

Designing Public Instrumentation as Interaction

The role of design research and practice
in the design for policy instruments

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Abstract

This PhD by thesis explores the ability of design to create new knowledge apparatuses that can bring change to, engage with and address the interactive nature of our current policy problems. The thesis contributes a new understanding of policies and policy instruments in their role as design entities. It examines the materiality and the mechanics of state intervention in design terms. To support this level of analysis, the thesis focuses on policy instruments, given that policy instruments delimit the means to deliver public value and the feasibility of policy goals, as meta-interfaces for policy design, delivery and implementation.

The current contribution of design practice and research, if assessed critically, tends to be concentrated at the operational end of the policy spectrum, where policy goals and means tend to be defined already. It is seldom, in a policy context, that design practice involves the opportunity to design policy and policy systems from scratch, making it more likely that design practice will involve the redesign of existing systems. A designer's role in dealing with policy systems therefore involves finding opportunities for leveraging the interactions in occurrence within these systems.

For its theoretical context, the PhD thesis adopts an interdisciplinary approach to the examination of policy making, policy design and public service innovation. To facilitate an in-depth and critical consideration of the contribution of design to policy making, I focus the research on a distinct area of policy, that of housing and the emerging policy problem of housing affordability. Working through the interstices of these fields of enquiry, the thesis explores the contribution of service design, design for services and design for policy to develop capabilities for the design of new instruments for state intervention by working with the interactive nature of policy instruments. Interaction, however, is often understood

as a given, as an outcome and as a by-product of services.

The research explores interaction as affordances and takes a practice led approach to the development of the understanding of working with policy instrument infrastructure that has different levels of maturity. The thesis proposes a service-oriented application of affordance, which provides an alternative to policy instrument choice frameworks and places a human centred design perspective and design practice as a form of enquiry at the heart of the design for policy instruments. In the form of a design canvas, the research develops a set of design guidelines to aid design practice in approaching the complexity and navigating the implications inherent in design practice at this level.

More importantly, the thesis develops analysis in order to establish design as an epistemology that is adept at building knowledge which provides theoretical and practical alternatives to the current praxis of policy making. By responding to the nature of interactions from a projective and self-reflective perspective, the application of research through design moves instrument design beyond the macro and micro dichotomies and the ideological straitjackets which frame policy making and into an evaluative activity, one which, through projective enquiry, can more adequately respond to our current policy challenges.

Contents

Acknowledgements	5
Abstract	7
1. Introduction	21
1.1 Context	21
1.2 Aims	23
1.3 Policy Instruments as Design Artefacts	24
1.4 Research Questions	26
1.5 Methodology: Research Through Design	27
1.6 Thesis Structure	28
1.7 Design for Policy Instruments as Meta-Interfaces	31
2. The Policy Context	35
2.1 Defining the Materiality of Housing Policy	35
2.1.1 Housing as an arena for experimentation	
2.1.2 The changing nature of tenure	
2.1.3 Public private partnerships	
2.1.4 Right to Buy and asset-based welfare	
2.2 Housing Affordability as a Public Problem	43
2.3 Summary	46
3. Literature Review	47
3.1 The State, Policy Making and Policy Instrumentalities	48
3.1.1 The state as a function	
3.1.2 The normative model of policy making	
Foundations of policy studies and analysis	
Solving policy problems through the specialisation of knowledge	
The policy cycle as a heuristic device	

3.1.3	Moving beyond specialised knowledge and the policy cycle Frameworks for assessing policy instrument choice	
3.1.4	Interaction at a Strategic Governance Level Forms of public governance Debates on public value	
3.1.5	Summary	
3.2	Design for Public Services	75
3.2.1	Design as an emerging tool for policy making	
3.2.2	What is meant by design	
3.2.3	Diagnosing policy problems	
3.2.4	Decision making as experimentation	
3.2.5	Services as instruments of policy implementation	
3.2.6	Services and emerging organisational principles	
3.2.7	Summary	
3.3	Affordance in Policy Instrument Design	111
3.3.1	The theory of affordance	
3.3.2	Design and affordance	
3.4	Summary of Findings and the Research Framework	120
4.	Methodology	127
4.1	What is Design Research	128
4.2	Projective Action as a Methodology	136
4.2.1	Methodology for research	
4.2.2	Research through design as action research	
4.3	A Research Strategy in an Interdisciplinary Context	141
4.4	Research Strategy for Studying Interaction	147
4.4.1	Designing as leveraging policy instrument infrastructure: Mobility & liquidity in the low-cost home-ownership sector	
4.4.2	Designing new policy instrument capabilities for rent regulation: The case of open data in the design for trust in the private rented sector	
4.4.3	Designing policy instrument infrastructure for networked governance: Maturing forms of social innovation in the community-led housing sector	
4.4.4	Design methods and tools	
4.4.5	Design project analysis and evaluation	
4.4.6	Final analysis of the research and design questions	
4.5	Summary	154

5.	Design Project 1	157
5.1	Introducing Shared Ownership	158
5.2	Designing for Legacy Instruments	160
5.2.1	Action: Mobility within shared ownership	
5.3	Reflection & Learning for Policy Instrument Design	164
5.3.1	Learning 1: Delivery at cross purposes	
5.3.2	Learning 2: Resources and organisational automaticity	
5.3.3	Learning 3: Shared ownership as a stepping stone	
5.3.4	Learning 4: Mobility, low liquidity and public value	
5.4	Design Project 1 Outcomes: Designing Pathways	170
5.5	Reflections on Design for Policy Instruments	172
5.5.1	Is the user always right?	
5.5.2	Sensemaking at a systemic level	
5.6	Summary of Findings from Design Project 1	174
5.6.1	Designing policy pathways and levers for calibration	
5.6.2	Design for policy making at a meso level	
6.	Design Project 2	179
6.1	The PRS as Housing Policy's Wicked Problem	180
6.1.1	Implications for policy instrument design	
6.2	Designing for Experimentation	183
6.2.1	Action: An alternative to rent controls	
6.3	Reflection & Learning for Policy Instrument Design	186
6.3.1	Learning 1: Instrument functionalities beyond regulation	
6.3.2	Learning 2: Open data as a resource for instrument design	
6.3.3	Learning 3: New forms of interaction and the design for trust	
6.4	Design Project 2 Outcomes: Design for Social Change	191
6.5	Reflections on Design for Policy Instruments	192
6.5.1	The role for vision in the design process	
6.5.2	Affording trust through recognition	
6.5.3	Design at a macro level: Governance implications	
6.6	Summary of Findings from Design Project 2	196

7.	Design Project 3	199
7.1	Community-led Housing as Social Innovation	201
7.2	Designing for Scaling Social Innovation	202
7.2.1	Action: Alternatives to a developer model	
7.3	Reflection & Learning for Policy Instrument Design	207
7.3.1	Learning 1: Operationalising collaborative organisations as instruments	
7.3.2	Learning 2: Designing policy instrument as networks	
7.4	Design Project 3 Outcomes: Designing Collaborative Capability	212
7.5	Reflections on Design for Policy Instruments	213
7.5.1	False affordances and collaborative organisational capability	
7.5.2	Design for experimentation: Infrastructuring diffuse networks	
7.6	Summary of Findings from Design Project 3	218
8.	Design Project Evaluation	221
8.1	Leveraging Policy Instrument Infrastructure	222
8.1.1	Developing design capabilities through interaction	
8.1.2	Evidence and a business case to reset policy agenda	
8.1.3	Rethinking instrument design and policy problem definition	
8.2	Experimenting with Affordances	230
8.2.1	Experimentation in instrument design to define policy goals	
8.2.2	Redesigning regulation as a policy instrument capability	
8.2.3	Leveraging policy resources: Open data as public value	
8.3	Affordances for Scaling Collaborative Governance	235
8.3.1	Uncovering untapped needs and resources	
8.3.2	The challenges of interfacing existing policy instrument infrastructure	
8.3.3	Policy instruments for networks and scale	
8.4	Common Findings: Design for Policy Instruments	239
8.4.1	Policy instruments as an interactive capability	
8.4.2	Designing as infrastructuring policy intervention	
8.4.3	Social conversation as lobbying and creating a business case	
8.4.4	Design practice and the role of vision	

9.	Discussion and Analysis	241
9.1	Situating the Research Framework	243
9.2	Design Project Findings	244
9.2.1	Assessing affordance in existing policy instruments	
9.2.2	Experimenting with affordances to develop new capabilities	
9.2.3	Affordances for instruments for collaborative governance	
9.2.4	Summary of design project findings & research implications	
9.3	Contribution to Design Knowledge	254
9.3.1	Design for policy instrument calibration and optimisation	
9.3.2	Design for policy instrument diagnosis	
9.3.3	Design for policy instrument innovation	
9.3.4	Design for policy instrument experimentation	
9.3.5	Design canvas & guidelines for the design for policy instruments	
9.4	Research Through Design as Interdisciplinary Enquiry	262
9.5	Affordance in a Service-Oriented and Policy Context	265
9.5.1	Situating affordance within the design for service debates	
9.5.2	The materiality of services as interaction	
9.6	Summary of Findings	270
10.	Conclusion	273
10.1	Introduction	273
10.2	The Research Context: State Intervention as Praxis	273
10.3	Contribution to Knowledge	276
10.3.1	Policy instruments as meta-interfaces of state intervention	
10.3.2	Design praxis for the design for policy instruments	
10.3.3	Towards a service-oriented application of affordance	
10.3.4	Research through design, projective enquiry and the materiality of practice	
10.4	Dissemination, Impact and Future Work	286
	References	289

Table of Figures

Figure 2.1	Intermediate tenures comparator by tenure type, target population & subsidy level. (Monk & Whitehead, 2010). P. 45.
Figure 3.1	Trade-offs between precision and inclusiveness. (Linder & Peters, 1984). P. 56.
Figure 3.2	Policy cycle, Laswell (1956). P. 57.
Figure 3.3	Policy cycle, Frohock (1979) & Jones (1970). P. 57.
Figure 3.4	Policy cycle, Howlett, Ramesh & Perl (2009). P. 59.
Figure 3.5	Policy cycle, Parson (2005). P. 59.
Figure 3.6	The Strategic Triangle of Public Value (Bennington & Moore, 2011). P. 73.
Figure 3.7	Contribution of service design, design for services and design for policy in the layers of decision making and components of policy making. P. 79.
Figure 3.8	Role of services in policy making (Junginger, 2016). P. 100.
Figure 3.9	Properties of affordance based on Gibson's (2016) construct. P. 114.
Figure 3.10	Gaver's (1991) model of affordance and the relationship with perceptual information. P. 116.
Figure 3.11	Design for usability. (Krippendorff, 2006). P. 118.
Figure 3.12	The research framework. P. 125.
Figure 4.1	Findeli's Bremen model (2010). P. 142.
Figure 4.2	Chow and Jonas's cybernetic model of research (2008). P. 143.
Figure 4.3	Checkland and Howell's (1998) soft systems thinking research model. P. 144.
Figure 4.4	Thesis research strategy. P. 146.
Figure 4.5	Research framework application design project 1. P. 148.
Figure 4.6	Research framework application design project 2. P. 149.
Figure 4.7	Research framework application design project 3. P. 150.
Figure 5.1	Research framework application design project 1. P. 160.
Figure 5.2	Design project 1 research plan. P. 161.
Figure 5.3	Shared ownership benefits map. P. 166.

Figure 5.4	Shared ownership beneficiary lifecycle. P. 168.
Figure 6.1	Research framework application design project 2. P. 183.
Figure 6.2	Design project 2 method & plan. P. 184.
Figure 6.3	Adapted from Ackoff's (1989) pyramid of information. P. 188.
Figure 7.1	Research framework application design project 3. P. 203.
Figure 7.2	Design project 3 research plan. P. 205.
Figure 7.3	NCLTN demand analysis. P. 209.
Figure 7.4	NCLTN organisational tensions. P. 211.
Figure 9.1	Thesis research framework. P. 244.
Figure 9.2	Design project analysis of different levels of interaction. P. 247.
Figure 9.3	Temporal dimensions of designing for policy instruments with affordance. P. 253.
Figure 9.4	Design canvas for the design for policy instruments. P. 255.
Figure 9.5	Service-oriented approach to affordance. P. 267.

List of Tables

Table 3.1	Policy and decision making theories and perspectives. P. 54.
Table 3.2	Layers of decision making and components of policy making (Howlett, Ramesh & Perl, 2009). P. 61.
Table 3.3	Effects of substantive instruments affecting goods and services; adapted from Howlett (2011). P. 62.
Table 3.4	Implementation tool criteria adapted from Howlett (2011). P. 67.
Table 3.5	Paradigms of public management adapted from Bennington and Hartley (2001). P. 70.
Table 4.1	Research evaluation interviews. P. 153.
Table 9.1	Design guidelines for the design for policy instruments working with affordance. P. 261.

'The way elements are chosen and linked together determines where policies hope to solve problems or make them worse. Policy designs affect who wins and loses. Over time, designs have a dramatic effect on the distribution of wealth and other resources within society. [...] Depending on the differential ways people are treated, lessons that prompt mobilisation and involvement or alienation and withdrawal are learned by citizens.'

(Schneider & Ingram, 1997:p. 101).

1 Introduction

In this introductory chapter, I will explore the context and background of my PhD by thesis and give a brief outline of the findings and structure of my research. My thesis examines the contribution of service design, design for services and design for policy to develop capabilities for the design of new instruments for state intervention by working with the interactive nature of policy instruments. The research focuses on a UK context and on a discreet area of policy, that of housing affordability, in order to conduct an in-depth analysis of the contribution of design for services and design for policy to housing policy and, more widely, to policy making. The thesis also explores research through design as an interdisciplinary approach to design enquiry in a policy context.

1.1 Context

As the public innovation agenda has gained momentum in recent years, design practice and methods have been at the forefront of these debates. This is also echoed in the recent interest from within design practice and research in public service innovation and policy making. Past examples from within design research (Simon, 1969) and design thinking (Cross, 2007) illustrate that attention has been paid to areas with less tangible applications of design practice. However a growing and concerted effort from within the emerging field of service design, and in particular design for services, design for policy and social innovation, is making significant inroads in the experimentation with and the advancement of design practice and research in a policy context (Bason, 2014, 2015; Junginger, 2013, 2014, 2016; Bunt & Christiansen, 2014; Meroni & Sangiorgi, 2011; Mulgan, 2007; Manzini, 2013).

Design practice in a public service and policy context, whether it occurs as a conscious endeavour or it occurs by default, and how it is manifested in the systems, the institutions and practices which underpin public services, is not new (Junginger, 2013). Sitting alongside the public innovation agenda is a drive to increase the efficiency of public services (duGay, 2000; Streeck, 2012; Schneider & Ingram, 1997), and here design is expected, at its most basic level, to do so by making service experiences more desirable and attractive (Bason, 2015). It is accompanied by a narrative built on the increasing complexity and interdependency faced by public services (Bourgon, 2008; Mulgan, 2009), coupled with the inability of existing policy practices and public service delivery models to develop alternatives in response to it. Whether this narrative and inability are due to the forces of globalisation or to other factors — such as the pressures of a networked society in an informational age (Castells, 1989, 2009), increasing urbanisation, the effects of a ‘tragedy of the commons’ (Ostrom, 2015) on a systemic scale, the growing diversity of populations, the multidimensional, interconnected and undetermined nature of public policy problems — all require integrated responses from the state and new institutional forms which are sufficiently adaptive to these diverse circumstances.

As design practice and research is called upon, and on the occasions it puts itself forward to provide alternatives to these challenges, the extent of its contribution is only now becoming evident. In the main, the emerging analyses assess design practice and its contribution to a public sector context according to how its processes and methods improve accessibility and enhance service experiences and how they might help foster innovation in the public sector (Bason, 2014; Junginger, 2013, 2014, 2016; Meroni & Sangiorgi, 2011; Sangiorgi, 2013; Kimbell, 2011; Bunt & Christiansen, 2014). A significant portion of the design research literature places emphasis on the dimension of value co-creation as a method and practice of working and on its integral role in the definition of services (Cottam & Leadbeater, 2004; Meroni & Sangiorgi, 2011; Kimbell, 2011; Spohrer & Maglio, 2007; Maglio & Spohrer 2008a; Vargo & Lusch, 2008). Whether through

examining value co-creation at the level of the interface (Secomandi, 2009; Secomandi & Snelders, 2011; Panceti, 1998) or through the collaborative, relational and socially constructed reality of services and the emerging organisational forms (Cipolla, 2006; Morelli, 2002; Manzini, 2008, 2011, 2013, 2015), less attention is devoted — which, in a policy context, is critical — to understanding the impact of these different forms of value on policy design and the mechanics of state intervention. Few have combined research through design in a policy context with an interdisciplinary investigation with the aim of bringing together the emerging service design research, issues from policy studies and the public administration perspective, in order to assess the contribution of design practice, knowledge and design as an epistemology to the policy context and field of enquiry.

1.2 Aims

The aim of this thesis is to explore the contribution of design practice to policy making and, as a research approach, to support the creation of knowledge, through design, about policy making. The research aims to ensure not only that the outcomes are replicable in a design context but also that the contribution to knowledge is applicable to policy studies and public administration. From the outset, a key research objective is to examine design's contribution to a public service and policy context from an interdisciplinary perspective and to find a lingua franca between emerging issues and debates in the area of policy and that of the debates in the emerging area of design for services and design for policy. Most importantly, the thesis develops analysis in order to establish design as an epistemology, adept at building knowledge and providing theoretical and practical alternatives to current praxis and to research that concerns public services and policy making. In my view, only then can design practice and research be assessed for its true contribution on its own terms. To undertake this level of analysis, I propose an approach which starts by considering policies as design artefacts subject to projective and reflective enquiry.

1.3 Policy Instruments as Design Artefacts

To undertake this level of analysis, I focus my examination on policy instruments, because they define the parameters, the scope and the means for policy delivery and public action. Policy instruments relate to the legal, fiscal, administrative and informational mechanisms at the state's disposal and are used to implement policies through which public services are delivered. Policy instruments not only provide the means to achieve policy, they also provide the means to determine the feasibility of policy goals and, as a result, to define them. From a service design perspective, policy instruments define and inform the content and the organisational system by which services come into being. As such, they are meta-interfaces for policy design, delivery and implementation.

This approach situates design practice at the heart of how public services come into being through the materiality of the state and the mechanics of state intervention. In my analysis, I unpack what state intervention consists of when exercised in the form of public services in order to explore the foundations of public intervention, through the consideration of various definitions of public problems and the current understanding of the mechanics of the state for addressing these. This, I argue, allows for an analysis which considers the praxis of addressing how problems in the public domain are addressed through policy design and delimit the state as a function of government separate from the political entity of governments. This distinction allows for an analysis, in light of Dewey's (1954) theory of the nature of public problems, whereby the policies and the means through which they are implemented can be approached as design artefacts. As entities for design research, they contain as much fluidity and changeability as the policy problems they are meant to address.

To facilitate an in-depth and critical consideration of the contribution of design to policy making, I further focus the research on a distinct area of policy, that of housing and the emerging policy problem of housing affordability. Housing affordability as a distinct policy problem owes its complexity to the interdependent nature of housing policy

with respect to other policy areas and housing markets. The changing nature of public intervention in housing, reflected in the policy instrument apparatuses designed to support it, also reflects changes in the preferred public administration models used at different times for policy implementation. The recent growing problem of housing affordability presents key challenges for the future development of housing and welfare policy — in terms of access to housing, choice over tenure, financial mobility, liquidity of assets and inequality resulting from poor policy outcomes and poor provision — as it cuts across different tenures of housing — for rent, for sale and state-subsidised. The challenges related to housing affordability are at odds with a one size fits all approach to policy making. They illustrate wider questions at the core of our current mechanisms and structures of policy and decision making practices.

I demonstrate that the interdependent nature of policy and public service delivery is, in part, due to the interactive nature of policies and their instruments, from which public value is derived. The ramifications of a dominant rational instrumentalist approach to problem solving and the increasing specialisation of knowledge, where attention is focused on determining, with ever increasing accuracy, policy problems, goals and the evaluation of the accuracy of such assessments, fails to develop new alternatives, mechanisms and means to bring policy goals to fruition. However, despite a broad consensus about or the need to conceive of new policy options and focus on the interactive nature of policies and policy instruments, the current debates in policy and public administration fail to address this and fail to provide new capabilities to support future policy design. This presents a clear research gap, which I intend to address.

As I demonstrate, design practice involves not only a generative, problem solving activity but one which is primarily concerned with interaction as a unit of analysis, which is critical to my research. The discussion situates the emerging debates from within the areas of service design — design for policy, services and social innovation — within the policy and public administration literature. It explores

the opportunities and challenges which arise from adopting a design perspective at the level of policy problem diagnosis, of decision making and of policy implementation through services and the wider organisational and governance implications for new service models.

Given that policy making entails making decisions across different layers of governance, the current contribution of design, if assessed critically, tends to be concentrated at the operational end of the policy spectrum, where policy goals and means tend to be defined already. The analysis also highlights that despite the ability of design in the context of policy and public services to address innovation challenges, interaction is often viewed as a given, as an outcome and as a by-product of services.

To address this, I introduce affordance, both as a theoretical construct and as a framework, to directly engage with interaction through design practice and research. The theory of affordance focuses on the interaction between the environment and information available to the observer. In particular, Gaver's (1991, 1992) model of affordance, located in the design literature, establishes different categories of affordances according to their availability and perceived information. I discuss how this model provides both a conceptual and a practical tool to guide analysis in the exploration of interaction and the development of design practice in order to define the parameters of my research.

1.4 Research Questions

My thesis intends to assess the contribution of design research in design for services and policy, to explore the interactive nature of policy instruments with the aim of developing capabilities for the design of new instruments for state intervention. Through a series of practice based design projects, the thesis seeks to develop an understanding of designing policy instrumentation as interaction.

The research question sets out to explore how design practice and research support policy making and policy instrument design (a) to

create new options and (b) to address the interactive nature of policies and policy instruments in creating new capabilities to support the design of policy instruments. This involves considering what new policy options design practice can create through the development of an understanding and a practice in response to interaction in the context of policy instrument design and of housing policy and, in particular, of housing policy in the context of housing affordability.

As part of that, I will examine the conceptual and practical implications for policy design and design practice of approaching policies and policy instruments as design artefacts. To undertake the analysis, I discuss how a design perspective and design interventions, at a meta-interface level of policy making, can be made accessible for application, both to designers not used to working in this context and to policy makers not used to the application of design and human centred design practices. Of significance to design research, the thesis will explore how research through design, as an epistemology with a supporting methodology, can contribute to wider policy research.

My research question will be explored concretely in relation to three distinct housing policy areas where the issue of affordability is cross-cutting — those of homeownership, the private rented market and of addressing the issue of supply through socially innovative models.

1.5 Methodology: Research Through Design

As stated earlier, a key aim of the thesis is to consider design not only as a practice but as a research epistemology which contributes to knowledge production in a policy context and the development of design theory. Research through design involves projective, cyclical, self-reflective and situated practice concerned with generating learning, not only about design practice but learning as a path to building knowledge about the world. I explore the methodological implications of conducting research through design, and I discuss how action research may support the development of an analysis which is both projective and reflective and which extends the role of the

designer beyond that of a facilitator (Roberts, 1997) to that of both an observer and a steersman (Glanville, 1997) of action. This allows a research strategy to emerge which examines design interventions and builds evidence about design practice and design knowledge in an interdisciplinary context in order also to replicate the contribution to design theory and the design of policy instruments and policy studies more widely. To support this, I draw on Findeli's (2010) framework for undertaking research through design, to develop a research strategy that can therefore accommodate design and overall research considerations to its approach to undertaking research and to the analysis of research findings.

Through my research framework, interaction within a policy context becomes understood as affordances created from the relationship between the state's capacity for action and its understanding of need. The research framework examines interaction, within the perspective of affordances, as the relationship between possibilities of action found within policy infrastructure and ecosystems and a refining of the understanding of need from a human centred perspective. It also informs the selection of design projects analysed in the thesis which consider interaction as affordances in distinct housing policy instrument infrastructures, seeking to advance, through reflective practice, the learning from previous practice. Through the design projects and the overall analysis of the findings, I provide insight into how to address the question of building knowledge using a research through design standpoint. The analysis will not only seek to address questions pertinent to the design solutions produced for each of the policy areas but will also, in a broader sense, examine the overall findings for design research, design for policy instruments and the development of future policy instrument choice frameworks and criteria.

1.6 Thesis Structure

Chapter 2 introduces housing affordability as a distinct policy problem and an area of public intervention. The analysis provides a brief

historical overview of public intervention in housing and considers the changing nature of public problems, the subsequent development of policy apparatuses and how policies interface with civil society and markets under different political and public administration models.

Chapter 3 sets out the theoretical analysis which underpins the thesis, drawing on debates from within policy studies, policy design and public administration as well as the emerging theory from service design, service sciences, design for services, design for policy making and social innovation. Through the analysis, I establish policy instruments as 'that which gives the state its function' and present an overview of the philosophical foundations of policy making and practice. As part of that, I examine a series of approaches, tools and choice criteria frameworks developed to support policy making and policy design. I then explore design's contribution by considering the parameters through which design practice and research distinguishes itself. The analysis assesses the emerging design literature within different levels of policy design activity in detail, examining how design practice has to date addressed the challenges involved with the production of new alternatives and the development of a practice in response to the interactive nature of policy intervention. I conclude this chapter by providing an overview of the origins of affordance, its application in interaction design and how it supports the development of my research framework.

Chapter 4 focuses on the epistemological foundations of design research and situates my PhD as research through design while discussing the methodological application of action research to a design context. I conclude the chapter by discussing my research strategy and proposed research framework development in the context of practice based design projects.

The findings of my three design projects explore different elements of interaction as affordances, given the state's capacity for action and its understanding of need. Chapter 5 examines the first policy instrument designed to address the issue of housing affordability. It focuses on

the challenges and constraints presented by an existing legacy policy instrument infrastructure to designing in response to hidden and perceived affordances in housing markets and at a systemic level of interaction. Chapter 6 develops design practice in the context of the private rented sector (PRS). It discusses how working with hidden affordances and those beyond experience supports the design of a new user-driven regulatory capability, used to unlock further public value as a result of the new forms of interaction fostered by the design solution. Chapter 7 examines the community-led initiatives that increase affordable housing supply. It discusses the impact of false affordances and the question of the fit of an existing policy instrument infrastructure to emerging organisational forms, collaborative service models and the wider governance ramifications arising from it.

As my research strategy consists of establishing findings from design practice and from wider research objectives and knowledge creation, the analysis of the findings is undertaken in two parts. The first part, discussed in Chapter 8, assesses learning from each of the design projects in the immediate policy contexts they worked within and which they helped to address. This brings together findings following a series of evaluation interviews carried out with the participants and the relevant stakeholders particular to each of the design projects, with a specific focus on the contribution of design practice, methods and processes to policy instrument design.

The final stage of analysis, discussed in Chapter 9, considers learning and reflection in view of the overall findings. This last chapter reflects on results from the perspective of these findings' contribution to knowledge beyond the immediate policy context of housing affordability, to consider the contribution of the design projects to the overall research questions and objectives of the thesis. In continuation of the research strategy discussed above, this chapter will consider the contribution to knowledge related to the wider research questions for design for policy making and policy instruments, within service design as well as in the application of research through design in a policy context. Chapter 10 sums up the overall themes and questions that are

covered by the thesis, as posed in the introduction. This summation will be followed by several concluding considerations regarding the importance of further, ongoing research in this area.

1.7 Design for Policy Instruments as Meta-Interfaces

The research findings offer a number of insights for the development of future design for policy instruments in a range of policy contexts. Design project 1 assesses design's contribution to an existing policy instrument infrastructure for addressing affordability in homeownership. It illustrates how approaching design practice through perceived or hidden affordances can unlock an existing legacy of instrument infrastructure by working with existing leverage points and the opportunities contained within those. I explore how the design for policy instruments, if approached as pathways, can increase resilience and reliance on existing and new instrument infrastructure and ecosystems. I conclude the analysis by discussing how the design for trust — within existing and new areas for policy intervention — mixed consumption and production models for policy instrument design present challenges. This is a significant area for future research, which is explored as part of design project 2.

Design project 2 develops design practice in the context of the PRS, a policy context where state intervention is complex, due to its fragmented nature and the high degree of interdependency required in instrument implementation in this context. It is a policy context where there is a poor understanding of the need of the different stakeholders operating in the PRS. Design project 2 works with hidden affordances and those beyond experience to produce a digital solution, RentSquare, which provides a new instrument capability for rent regulation and fosters new forms of interaction between tenants and landlords in order to address imbalances of information in this sector. To achieve this, the design solution applies open data to the design process, both as a design resource and in how it might address the design for trust in a policy context. The creation of this new regulatory functionality by an entity external to the state raises significant questions about the

scale, the impact and the long-term sustainability of policy instrument delivery through such a mechanism. It raises further questions of how an instrument functionality carried out on behalf of or alongside other forms of state intervention can be best achieved through organisational instruments as well as the wider governance implications arising from delivery through these means.

Through design project 3, I explore these wider questions of scale for social innovation and how these interface with existing policy instrument infrastructures. In it, I examine how design practice, by designing in response to collaborative interactions at a systemic level, can design new policy instruments that accommodate new governance arrangements. From a design perspective, design project 3 highlights a potential new role for government and of design for policy instruments for 'infrastructuring' (Eln, 2010) functionalities, to support new policy directions, innovation, experimentation and the organisational models for more diffuse models of governance.

I illustrate how the emerging overall findings point towards an interplay between the quantifiable aspects of interaction and the development of design practice in response to a human centred understanding of behaviour, both at the level of the user and, more importantly, at a systemic level. This illustrates a shift in policy instrument design away from individual punctual transactions delivered through finite linear processes, traditionally created to be complied with, towards design for policy instruments as systems of many-to-many interactions.

The final stage of my analysis considers learning and reflection in view of the overall findings. It reflects on results from the perspective of their contribution to knowledge, beyond the immediate policy context of the design projects, to the overall research questions, to the objectives of the thesis and to how they sum up important aspects of what it means to understand and work with policies and policy instruments as design artefacts. It characterises how these can be effectively approached by both designers and policy makers alike

to enhance the understanding of the implications of working with interaction as affordance for the design for policy instruments. As part of this process, I propose a set of design guidelines and a design canvas to support the design of policy instruments and of choice criteria frameworks which expand on the functionalities of different types of affordance, and I suggest how design practice might engage with these elements. The analysis also reflects on the learning for the emerging areas of research in service design and design for services and policy and in the development of a service-oriented application of affordance. I conclude by illustrating the relevance of research through design as an epistemology for producing knowledge about design research, about design theory and, more widely, about the contexts which design practice chooses to engage with. These findings extend the knowledge and the capacity of design to contribute to new areas and fields of study; they also seek to highlight the critical importance of developing the state's capacity and capabilities to address policy problems and to maintain the integrity of our political processes and our democratic models.

2 The Policy Context

In this chapter, I will explore housing policy as my overall research context to examine how it might be approached as an area for design intervention. In what follows, I will provide a brief historical overview of housing policy development in the UK over the last century. Through it, I will explore how the materiality of housing policy might be approached if it is to be understood as a design entity. Housing policy has been at the forefront of extensive experiments in public governance, and the understanding of housing as a policy problem has evolved and changed significantly over time. As I will show, this has led to the design of a number of different mechanisms and policy instruments which have been used for public intervention and used to respond to these changes. I will conclude the discussion with an exploration of housing affordability, which emerges in current policy debates as a key policy concern and one which is beset with challenges for current policy design and delivery.

2.1 Defining the Materiality of Housing Policy

To understand how housing policy can be examined as a design entity, it is important to explore how housing as a public problem has been conceived of and how housing policy has been implemented to date. In a policy context, housing is not only a public good but also a welfare product and a cornerstone of national economic growth.

'To put it more simply, housing is not just housing. Housing [...] has become central to the structure of international finance; the governance of national economies; the restructuring of welfare states; and the security, prosperity and well-being of individual households.' (Ronald & Elsinga, 2012:p.i)

Housing is deeply linked to welfare provision, being ubiquitous in how it mediates the flow of other public and welfare goods and services at

a household level (Doling & Ronald, 2009; Groves, Murie & Watson, 2007). The link between housing, asset ownership, wealth and levels of inequality (Piketty, 2014) reflected in labour market conditions (Malpass, 2004) further adds to the complexity of housing as a policy area.

Historically, state intervention in housing has been associated with the direct provision of homes. As I will show, the delivery and development of housing policy, however, is deeply entwined with welfare, health and social care, labour, and fiscal and economic policies, which have at their disposal a variety of mechanisms and instruments to support policy delivery. Some examples of these include planning legislation, welfare, adult and social care policy, financial and capital incentives for housing supply, financial subsidy for the management of public housing, legislation to regulate rents and letting practices, financial regulations over borrowing and mortgage lending.

In addition to this, and as the debates within housing studies demonstrate, housing policy is also a complex policy area, because it relies directly on markets to supply and deliver policy outcomes. As Malpass (2003, 2004, 2008) suggests:

'The housing-welfare state relationship is complex, more complex than is acknowledged in most accounts. Housing is generally treated as one of the five key public services that are the conventional focus of academic social policy, along with health, social security, education and the personal social services. This is an arbitrary and conventional list, which is open to challenge, and it is arguable that the welfare state should be seen as a policy stance rather than a bundle of public services. [...] There is a particularly strong case for taking a broader view of the welfare state when looking at housing, where the market is the main source of supply and distribution. The retention of a large market sector in housing, in contrast to the arrangements adopted for health and education, is widely recognised as a reason for noting that housing occupies a distinct position within the welfare state. Much modern writing about the welfare state focuses on public services and public expenditure, but in housing studies it has long been acknowledged that it is necessary to look at the ways

governments work through and with markets and not-for-profit organisations, as well as at the public sector itself.' (Malpass, 2004:p.3)

If viewed from a design perspective, housing is an interface from which a number of public and welfare goods can be accessed. Policy delivery through this interface involves risk and uncertainty and also presents a number of opportunities, given its interaction with other service systems and policy infrastructure (Ascher & Trippe, 2015). However, unlike many public services, housing as an interface for state intervention is fixed in the built form, which has costly ramifications if policy interventions and assumptions are proven to be incorrect.

'This paper develops a new perspective on the problem of how to depict the housing welfare state relationship, arguing that it should be seen as pioneering ideas that are central to the establishment of a new model welfare state for the twenty first century. (...) In the 1980s housing was effectively a kind of testing ground for reforms that were later adopted elsewhere.' (Malpass, 2004:p.2)

It is exactly because of this complexity that housing, as an area of policy intervention, presents a rich research problem and context to explore the contribution of service design and design for services to policy making and policy instrument design. Housing as a policy area features little within the service design and design for policy debates, with some arguing (Staszowski, Brown & Winter, 2014) that intervention in this context can be challenging, given its quite politicised nature. In what follows, I will provide a brief introduction to UK housing policy over the last century, to examine how policy makers have conceived of and responded to housing as a policy problem to date.

2.1.1 Housing as an arena for experimentation

The late nineteenth century (Franklin, 2006) saw the emergence of housing as a policy focus. Policy efforts were concentrated predominantly on public health matters to protect workers from the effects of rapid industrialisation and unregulated urbanisation. Concerns for workers enduring insalubrious living conditions

1. The 1890 Housing of the Working Classes Act marks the recognition that a lack of adequate housing supply was a major public health issue affecting cities' economic development.

2. This term refers to Friedrich Engels' seminal work on the living conditions of the working class in England, titled *The Housing Question* (1872).

3. The implementation of these policies saw an increase in state-owned housing in this period to around 50% of the UK's total housing stock (Franklin, 2006).

4. These early examples of housing policy are symptomatic of more traditional public administration models (which I will discuss in more detail in Section 3.14), designed to achieve one output: the production of sufficient units to address, at macro level, aggregate demand (Kemeny, 1992).

5. This refers to a term discussed by Peter Malpass and in a Nordic context Ulf Torgersen (1987).

prompted the development of a range of policy instruments to legislate on matters such as building control and to regulate the quality and the sanitary conditions of worker accommodation.¹

It was also around this time that the state's responsibility to address 'the housing question'² and to provide homes for working families came to be recognised. This was accompanied by the construction, on a massive scale, of factory villages for workers in an attempt to address housing shortages. These initiatives were led by private sector philanthropists and took the form of institutions set up to support these activities, as charitable housing trusts and alms houses. The 1919 Housing and Town Planning Act formalised the role of the state as a direct provider of subsidised housing — built and managed by local government — a role which extended well into the 1930s and into the post-war years.

To support this role, a number of policy instruments were created to devolve powers to local authorities, to finance house building and to support slum clearance programmes.³ From its inception, housing policy has been criticised for its focus on buildings as opposed to people (King, 1996; Power, 1987).⁴ The underlying assumptions which guide housing policy remain unchanged to this day, relying on normative types — the traditional nuclear family, income brackets and age requirements — which are no longer reflective of current housing demographics (Doling, 2012; Franklin, 2006).

It was also at this stage that housing policy became entwined with ideals of universal welfare provision, framing an understanding of housing as an integral part of welfare provision. This helped shape public expectations about the role of the state in housing provision. As debates within housing studies demonstrate, in practice, apart from the two post-war periods, housing has been a tenuous and wobbly pillar of the welfare state (Malpass, 2003; Torgersen, 1987).⁵ As I will discuss below, the determination of housing tenure emerges as a significant policy instrument used to deliver housing and welfare policy.

6. Dewey argues that property and how it is conceived of changed with start of modern state, where private property has a social function. 'The real issue or at least the issue to be first settled concerns the conditions under which the institution of private property legally and politically functions.' (1954:p. 109).

7. Leasehold Reform Act 1967; <http://www.legislation.gov.uk/ukpga/1967/88/contents>

8. Housing Act 1985; <https://www.legislation.gov.uk/ukpga/1985/68/part/IV>

9. Housing Act 1988; <https://www.legislation.gov.uk/ukpga/1988/50/contents>

10. Malpass suggests 'While social security spending increased (inevitably dragged up by the rapidly rising numbers of people with no income from employment), and NHS expenditure was maintained, taking the period 1975-88, the education budget fell as a proportion of gross domestic product, which had not happened before (Glennister and Hills, 1998: p.36), but after 1979 housing was targeted to bear three quarters of planned cuts in the government's first term (House of Commons, 1980: v). Capital expenditure on housing fell by two thirds in real terms between 1974/75 and 1988/89 (Hills, 1998: 182).' (Malpass, 2004:p. 7)

2.1.2 The changing nature of tenure

Enshrined in law, the determination of housing tenure is a key mechanism used to determine the extent of state intervention in housing markets and to legitimise individual property rights.⁶ In the UK, three forms of tenure developed in the post-war years. The first involves leasehold and freehold law protecting home ownership and property rights.⁷ Second are secure and protected tenancies,⁸ used solely for state-subsidised housing (social housing). Secure tenancies can only be issued by government bodies, but unlike contractual agreements, can be changed unilaterally by any act of parliament. This form historically has also been used to manage the delivery of welfare policy through housing. The third form of tenure involves assured shorthold tenancies. These are based on contractual law⁹ and are most commonly used in the PRS. As opposed to secure tenancies, assured shorthold tenancies allow parties entering into those agreements to set the parameters of their engagement, therefore limiting the intervention of the state in the individual matters concerning these contracts.

The creation of different tenures was accompanied by an increasing focus in the post-war period on home ownership as the preferred public tenure of choice. This trend reflected the gradual erosion of European models of welfare and marked a shift away from ideals of universal access towards policies of retrospective compensatory distribution (Mangabeira Unger, 2005:pp.84–85). It was accompanied by a rapid decline of direct house building efforts¹⁰ towards market based forms of housing provision. To achieve this, policy makers began to develop a range of instruments to support direct state intervention in housing markets (Gurney, 1990, 1999; Kemeny, 1992, 2005; Kleinhans & Elsinga, 2010; Malpass, 2008), which I will discuss below.

2.1.3 Public private partnerships

A shift in the understanding of housing policy since the late 1960s towards supporting home ownership saw changes to planning law and the deregulation of building restrictions. These changes supported the large-scale development of suburban areas and new towns, typified

11. Malpass argues 'work on developing a non-municipal sector was taken a substantial step further in 1974, when the Housing Corporation was re-launched as a central funding and regulatory body for the housing association sector as a whole. At the same time housing associations were given their own dedicated and very generous grant system to enable them to play a larger role in meeting housing need (Malpass, 2000).' (Malpass, 2004:p. 8).

in the Garden City movement. They were also followed by a period of rapid urban decline and the de-urbanisation of the UK's major cities, which intensified in the late 1970s and early 1980s.

To counter this decline, successive governments embarked on what has become known as 'property-led development', signalling a clear shift in policy towards market led approaches to address housing policy concerns. The collapse of the housing market in the late 1980s partly unravelled these attempts, but it also paved the way for a new type of policy response and the development of a new policy instrument infrastructure to incentivise housing market activity.

What became known as public private partnerships saw the development of policy instruments to 'pump-prime' state assets and to sell and lease public land to attract private investment. Deployed by both national and local governments, these efforts formed part of a larger national push to regenerate cities, renew the built environment and return to the construction of subsidised housing to reinvigorate economically deprived local communities (Harvey, 1996; Sennet, 2013). Unlike the post-war years, market-led approaches to urban renewal were used to cross-subsidise large-scale social housing building programmes.

These approaches were made possible also because of a new organisational instrument, Housing Associations (HAs), who became the preferred partner and interface for the provision of subsidised housing and welfare. The HA sector expanded significantly from the late 1970s onwards, due to the ambitious house building programmes which were led by these organisations. Primarily, however, this expansion was facilitated by public grants, subsidies, tax relief incentives and other restrictions on local government, which gave HAs a market advantage to dramatically increase their asset base (Malpass, 2004)¹¹ and cement their position as the preferred provider of subsidised public housing.

This trend continued into the 1990s, with a new wave of policy

12. Some examples of these include Housing Action Trusts, Stock Option, Decent Homes in Stock Transfer, Arms Length Management Organisations, Private Finance arrangements.

13. Malpass (2004) suggests this was accompanied by a generous grant regime from 1974 onwards, which helped HAs build financial strength to a point where they could access lending institutions as credible borrowers of large amounts of long-term capital.

14. In 2008 it provided 2.5 million homes for over 5 million people in England (Purkis, 2010).

15. The creation of a third sector, the housing association sector, illustrates housing policy and delivery at the forefront of experiments in New Public Management (Hartley, 2005; 2011; Budd, 2007) and models of public administration, which I will discuss in more detail Chapter 3. Although housing policy rarely features in writing about public innovation and governance, it is a prime example of experiments in public innovation and governance with a history of policy implementation. The burgeoning HA sector, bolstered by systematic large-scale public asset transfer programmes, quangoes tasked with regulatory functions, became part and parcel of housing policy and delivery, placing housing

instruments and large-scale national programmes intended to drive the quality of subsidised public housing. Local authorities who failed to deliver centrally set standards and who lacked the financial viability to improve housing services and the quality of the housing stock were forced to consider options which included the transfer of housing assets to HAs or other not-for-profit enterprises.¹² An extensive informational, organisational and regulatory instrument infrastructure was created to support these large-scale transfers of state assets and housing stock.¹³ From 1988 to 2008, more than 1.3 million council homes were transferred into HA ownership,¹⁴ consolidating the HAs' position as the main providers of subsidised public housing in the UK.¹⁵ This shift in the responsibility for housing provision away from the state has ultimately resulted in housing, over time, no longer being recognised and considered a key area for policy and state intervention.

2.1.4 Right to Buy and asset based welfare

The introduction of the Right To Buy through the 1980 Housing Act¹⁶ marked another significant change towards private ownership. The Act create a decisive instrument and turning point in successive governments' approach to housing policy away from direct intervention in housing supply. With it came the start of ongoing efforts to residualise social housing and increase access to low-cost homeownership.

The Act was accompanied by a wide range of economic policy instruments, including the deregulation of financial markets, the financial deregulation of building societies and the introduction of interest tax relief measures. These policy instruments helped widen the access to financial products, such as mortgages, and they provided a means for market-led provision to finance individual homeownership. The shift towards homeownership as the preferred tenure and form of housing provision was actively encouraged by policy intervention (Ronald & Elsinga, 2012; Forest, 2013; Whitehead, 2012). It also reflected the aspirational desire of many to own a home.

National and local governments began increasingly to divest

at the vanguard of New Public Management approaches.

16. The 1980 Housing Act enshrined in law the ability for any social tenant with a secure tenancy to purchase their own home, at a discount set nationally; <http://www.legislation.gov.uk/ukpga/1980/51>

17. Asset-based welfare approaches reflect wider shifts in public governance, and in particular, NPM trends which saw governments adapt to changing expectations from citizens, not only as beneficiaries of policies but as consumers of services.

themselves of financial responsibility for capital management and the maintenance of housing assets. For the section of the population who required some form of welfare, government's response was to subsidise individuals through revenue based forms of welfare as opposed to capital investment in house building. The decline of state provision of housing and state owned housing means it is now an option of last resort.

The legacy of the change in policy delivery paved the way for a new model of welfare, based on asset accumulation through homeownership, formalising the role of housing markets as cornerstones of a new welfare state (Malpass, 2008:p.2). Asset based welfare represents a move away from 'state managed social transfers [towards] individuals accept[ing] greater responsibility for their own welfare needs by investing in financial products and property assets' (Doling & Ronald, 2009:p.1). At the core of this approach to welfare,¹⁷ homeownership is considered the most appropriate investment vehicle for government-supported saving (Doling, 2012) and to offset pension trade-offs (Kemeny, 1980; Castles, 1998).

Doling and Ronald (2009) suggest there are a number of obstacles associated with this approach. It assumes individuals act purely as rational economic agents. The idea of rational choice also reflects the wider 'privatisation of housing policy' (Ronald & Elsinga, 2012) and the commodification of housing as a consumption good. Despite the benefits of asset accumulation to individual well-being and satisfaction and being well-documented at a wider neighbourhood level (Rohe & Freeman, 2001), concerns about the impact of increasing individual risk (Whitehead & Gausas, 2007) and the management of long-term welfare provision are widespread.

While policy debates continue to focus on the need to increase the overall supply of housing, the need to increase social housing and the need for access to homeownership, the changes in housing policy and provision and within housing markets have brought about a different housing policy problem and challenge — that of housing affordability.

18. Much work has gone into identifying the common causes that contribute to this problem. Some suggest high levels of urbanisation, pushing demand on cities to house an ever expanding urban population. As home ownership is a preferred tenure, peaks in demand inevitably drive up housing values. The high value of land, a concept put forward by Ricardo's law of rent from his 1817 *The Principles of Political Economy and Taxation*, driven in part by an increase in demand, restrictions imposed through planning legislation contribute to further increases in the price of land and consequently in housing. These practices, as exemplified over debates about the protection of green belt zones, act to restrict building activity and limit the supply of new housing (Glaeser, 2012; Glaeser & Gyourko, 2002; Mace et al. 2016). Others attribute the problem on the supply side to a housing market dominated by a few house builders, limiting the volume of output exacerbated by an interest in keeping supply low so as to command higher prices. The 2008 global financial crisis, subsequent market volatility and cuts to interest rates led many to turn to bricks and mortar as a safe investment option, attracted by the higher return rates when compared to pension pots. Finally, wage stagnation and high debt levels, particularly prevalent among a younger and more mobile population, affect

2.2 Housing Affordability as a Public Problem

It follows that if the current asset based welfare model is to be successful from a housing and welfare policy perspective, low and declining levels of homeownership are problematic. It effectively means a segment of the population is cut off from the benefits of such measures,¹⁸ whereby a lack of housing affordability — affordability understood as one's ability to exercise choice — represents a failure in the system of public welfare delivery.

As Doling and Ronald (2009) suggest:

'While many have been able to acquire housing investments which have in the long term increased in value, it has proved difficult to either transform such fixed assets into liquid resources for welfare consumption or get people to accept that housing wealth should be consumed, especially on welfare services (...) The [final] issue concerns the housing market itself. Housing-asset-based welfare is founded on the assumption that house prices increase faster than inflation, and in perpetuity.'

(p.170)

The problem of housing affordability affects not only low-income families but also an increasing number of working families. It has particular ramifications for a younger demographic (Forest, 2013; Franklin, 2006; Bugeja-Bloch, 2013; Hirayama, 2012, 2013), driving intergenerational inequality (Pikkety, 2014; Ronald & Elsinga, 2012; Hirayama, 2012; 2013), as the most economically productive segment of the population is cut off from the housing market. It sees the widening divide between an older asset rich population as opposed to a younger non-asset-owning population (Ronald & Elsinga, 2012).¹⁹ The result is a younger demographic which finds itself caught in an affordability gap between homeowners and those unable to access homeownership, reliant on a declining supply of public subsidised housing, unable to access any form of affordable housing (Hirayama, 2012, 2013; Forest, 2013).

'The fundamental outcome of super rapid rise in housing commodification and, subsequently, market prices in these societies has been the emergence of massive affordability gaps,

levels of first-time buyers (Clarke & Heywood, 2016).

19. Homeowners represent a much older demographic who benefited from high employment levels, increase in house values and heavily subsidised housing and welfare systems, although levels of homeownership are still fairly high even after a recent decline to 63% following the 2008 financial crisis, with the majority of homeowners (32%) being aged over 64 and those between 16 and 34 accounting for less than 10% of the market (Resolution Foundation, 2016).

with intense price increases cutting younger households off from the housing market.' (Ronald & Elsinga, 2012:p.4)

The 2008 economic crisis compounded this issue, given the exposure to and dependence of individual households, national governments and global finance on housing markets (Ronald & Elsinga, 2012).

Ironically, asset based welfare models and the resulting imbalances, made worse by the 2008 crisis, meant an even greater need for direct state investment to deal with housing liquidity and to sustain an inflated housing market (Ronald & Elsinga, 2012:p.7).

The policy response to the issue of housing affordability has seen the creation since the late 1990s of instruments to support the delivery of intermediate tenures that address affordability gaps between state subsidised housing and options available in the housing market (Figure 2.1). In the UK, intermediate housing is the result of an incremental process 'rather than the outcome of a structured analysis of objectives, gaps in provision and the exact nature of what should be provided' (Munro et al., 2005). In the main, efforts have supported low-cost homeownership products as shared ownership.

Intermediate tenures rely on specific policy instruments to subsidise the supply side of housing (Monk & Whitehead, 2010:p.3) to encourage HAs and other market providers to share the financial risk and burden of funding new housing supply and low-cost homeownership. Other examples of policy instruments instructed to support it include planning gains instruments (as Section 106) — which allow local authorities to extract financial uplift from an increase in land value from granting from a planning permission — to eligibility criteria set by both national and local governments to target specific sets of beneficiaries

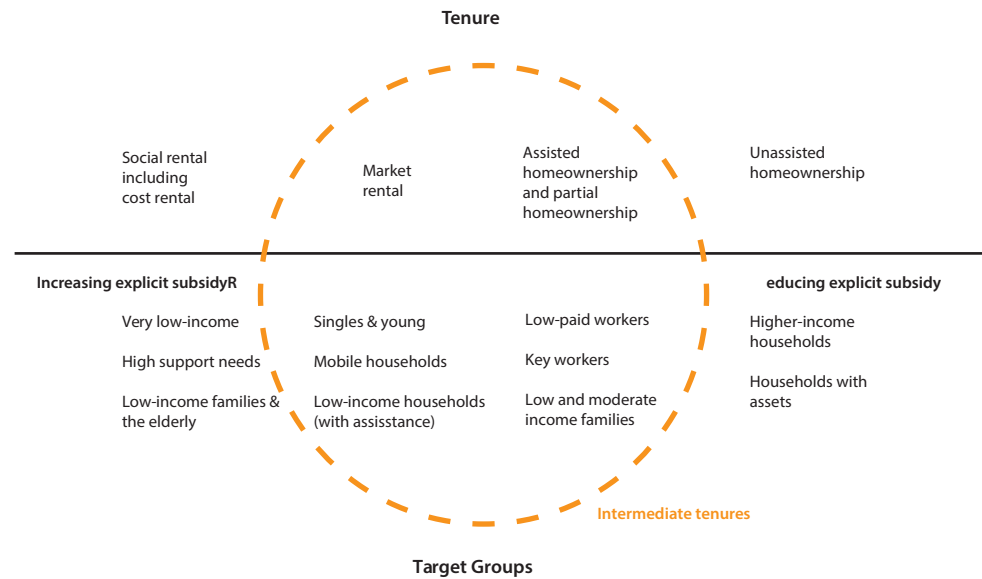


Figure 2.1
Intermediate tenures comparator by tenure type, target population & subsidy levels (Monk & Whitehead, 2010).

Monk and Whitehead (2010) suggest, despite their benefits, that the intermediate tenures in the UK are problematic. Having a large number of intermediate tenure products available in the market dilutes the offer and drives market uncertainty. A number of studies (Clarke & Heywood, 2012; Wallace, 2008, 2010) have highlighted issues with the long-term affordability and the lack of mobility within intermediate tenures:

‘Many of the objectives for subsidised home ownership schemes are [...] fiscal, reducing the need for state subsidies in other areas of housing or welfare policy, rather than tied to any beneficial outcomes for purchasers.’ (Wallace, 2010:p.17)

Concerns also involve the balance of risk and debt taken on by those who access intermediate tenures to take on too much personal debt and expose themselves to increased levels of social exclusion (Jarvis, 2008).

Despite these challenges, intermediate tenures offer ‘a more cost-efficient way to provide affordable housing than are social rental programmes’ (Elsinga & Hoekstra, 2005:p.75). In the UK, however, demand far outstrips the supply of intermediate housing. This problem is made worse by the strict targeting of these products to very specific beneficiary groups. This has meant many affected by

the issue of affordable housing rely on the private rented market as a long-term housing solution. As I will discuss in Chapter 6, the PRS has experienced a sharp rise in demand and, consequently, an increase in rent prices since the 1990s and early 2000s. The deregulated and fragmented nature of the PRS creates particular policy challenges to address the problem of housing affordability as it is now experienced across many of the UK's major cities (Alakeson, 2011, 2013; Alakeson & Gardiner, 2014). From the perspective of my thesis, the challenges presented by the policy issue of housing affordability provide fertile ground as a research problem and context in which to assess the contribution of service design, design for services and design for policy to the design of future policy instrument capabilities to address these challenges.

2.3 Summary

In this chapter, I outlined housing's complexity and uniqueness as a policy area. Housing policy is deeply entwined with other areas of policy intervention and is reliant on the market as the main provider of policy goals. The growing problem of housing affordability presents a complex challenge for future housing and welfare policy. The effects of a lack of housing affordability are felt across different tenures and belie a one size fits all approach to policy making and delivery. This calls, for a development of new policy capabilities which are able to respond and also pioneer new models of housing and welfare policy and provision, which move beyond the dichotomy of the state versus private sector provision. Policy delivery is conducted through a series of interventions and the deployment of policy instrumentation used to address how specific policy problems have been framed and diagnosed. From a design perspective, these mechanisms and instruments allow for the start of the development of an understanding of the materiality of policies as design entities.

3 Literature Review

In the previous chapter, I outlined the unique complexity of housing as a policy area. These challenges, however, are not unique to housing and welfare policy. They indicate a deeper problem with the mechanisms and the wider structures of public policy making activity and decision making practices. This chapter provides the theoretical analysis of how policy and the activity of policy making are understood. It contextualises how public decision making has been approached and, in particular, how this has influenced the purpose and intent of policy making activity and design.

I will draw upon Dewey's seminal book, *The Public and its Problems* (1954), on the nature of governments and public problems, which serves as a foundation and a point of departure to my analysis. Following from that, I will examine the emerging debates within the policy studies and the public administration literatures. I will discuss how policy making has, thus far, relied on the development of a series of knowledge apparatuses and the capability to primarily achieve policy precision in the diagnosis of policy problems and the accuracy of policy delivery. I illustrate how rational instrumentalists and the tensions found within the founding theories which underpin policy studies skew policy design practice in favour of the assessment of the consequences rather than towards the design of new alternatives.

I draw upon the policy sciences and, in particular, from the emerging debates in policy studies that focus on policy design and which examine the mechanisms — policy instruments — which determine the feasibility and the definition of policy goals. Across the literature, there is widespread acknowledgement that policies, and by consequence policy instruments, are interactive in nature as opposed to the finite

way in which these have been conceived of to date. Drawing on analysis from across the literature, I illustrate a significant shift in focus for future policy and public management towards policy making which concerns itself with how to best leverage the interaction between the state, civil society and the public to create public value.

Despite a broad consensus about the need to (a) conceive of new policy options and (b) focus on the interactive nature of policies and policy instruments, I will illustrate that the policy literature fails to address the manner in which these might be achieved and what new capabilities are necessary to support this direction in future policy design.

To address this, I turn to design research and the theory of affordance to support my analysis. I show how the theory of affordance, which originates from ecological psychology but was adopted in time by design researchers and the field of interaction design, provides a conceptual framework to examine the interactive nature of policies and their instruments. Design research and practice will be critically examined in its capacity as a practical tool to explore the design of alternative instruments and in its role in the development of affordance as a concept for application in a policy context.

3.1 The State, Policy Making and Policy Instrumentalities

In this section, I illustrate the philosophical underpinnings of policy analysis, how the activity of policy making has been theorised and its practice understood and the role of policy instruments within this context. I focus on the work of the American pragmatists (Peirce, 1958; Dewey, 1954; James, 1977) and in particular on the work of John Dewey, who has been a significant influence in the inception of policy analysis as a field of study and analysis.

3.1.1 The state as a function

Dewey's seminal work on political democracy, *The Public and its Problems* (1954), lays the theoretical foundation for policy analysis

20. For example, technological innovation and invention bring with them changes to how human interaction and associated behaviour occur. They affect the quantity and character of these interactions and behaviours and how these indirect consequences become manifest (1954: p. 30).

21. Although much of modern writing refers to governments, for the purposes of my PhD and consistency, I will continue to refer to the state as the machinery and functions of government - as the institution - as understood by Dewey.

and what constitutes the relationship between governments, the entity of the state and its citizens. He uses the idea of public and public problems — in the plural, since the definition of a public and its problems changes over time — where he conceptualises a distinction between the state — as a function — and the government — as the institution.

Governments, in Dewey's opinion, are an abstract but recognised political form that legitimately expresses recognised public problems. Government exists only in its capacity to confer authority on the state, which is made up of the institutions and laws which give the state its functions, and on the officials of the state, who have the means to control specific forms of human interaction of citizens. As such, Dewey distinguishes the state as a function expressed in the political and legal machinery (p.31) used to govern as opposed to the political institution of governments. The public is formed when the activities and the interaction of associated individuals produce indirect consequences whose effects extend beyond (p.144) those directly involved in the production of these activities.²⁰ When efforts to mitigate these indirect consequences of these associative activities become recognised as an 'effort to regulate them, something having the traits of a state comes into existence' (p.12).²¹

From Dewey, and significant to my thesis, is the argument that the result of human interaction brings about the need for a state and, most importantly, determines its function and the means by which it should address specific public problems. This viewpoint radically challenges the perspectives of structuralist and rationalist traditions which ascribe the state with a pre-given function and an ideal form (p.77). Creating a clear distinction between the idea of democratic government and how its function and structure is embodied in the state, Dewey opens up the possibility for the state to be in permanent development. As he suggests, given the changing nature of human interaction and, by consequence, the nature of public problems, the state must be constantly rediscovered (pp.33–34), and as soon it is stabilised, it must be remade (p.31), making the activity of forming

22. For Dewey, 'the line between private and public is to be drawn on the basis of the extent and scope of the consequences which are so important as to need control, whether by inhibition or by promotion.' (p. 15).

23. Dewey suggests 'A class of experts is inevitably so removed from common interests as to become a class with private interests and private knowledge, which in social matters is not knowledge at all.' (Dewey, 2008:p. 364).

24. '[T]here is too much public, a public too diffused and scattered and too intractable in composition [...] for conjoint actions which have indirect, serious and enduring consequences are multitudinous beyond comparison.' (1954:p. 137).

a state an activity subject to ongoing scrutiny and investigation. His approach suggests not only a materiality to the machinery of the state but also its experimental nature, involving practical problem solving.

A less discussed element of Dewey's theory of the public and public problems relates to how the state expresses its function, which includes the exercise of authority, through its many instruments, such as laws and regulations, seeking to control behaviour, inhibiting or promoting certain activities.²² Dewey points out that it is these instruments which give the state its function and agency to control associative forms of interaction. These instruments also enshrine rights and demands, commonly held means and ends (p. 57), modes of behaviour which become engrained and normalised in institutions and the functions of the state (Bacon, 2012:pp.58–60):

'The regulation and laws of the state are misconceived when they are viewed as commands. (...) Rules of law are in fact the institution of conditions under which persons make their arrangements with one another. They are structures which canalise action.' (Dewey, 1954:pp.53–54)

'[...]mistakes pile up and consolidate themselves into laws and methods of administration which are more harmful than the consequences which they were originally intended to control.' (1954:p.30)

For Dewey, the bases for joint human association (p.153) are mutually understood meanings, bound together by the formation and learning of habit (p.159). Learned habit stops new courses of action (p. 60), but it also can make possible the creation of new ones.

Dewey acknowledges that the task of forming a state is an increasingly complex one. As issues multiply, technical experts are required to address existing public problems in ever more specialised ways. Dewey warns against the prominence of experts, suggesting they could end serving their own interests,²³ posing a significant challenge to the public's ability to identify itself.²⁴

Dewey's analysis provides one of the cornerstones of my research. The state, understood as a function, along with its policies, instruments and the legal machinery at its disposal, enshrine human habit and define the scope of human associative interaction. In distinguishing between the functional machinery of the state and of government as a political form, Dewey approaches policy making as a set of experiments (Barg et al. 2009). This also establishes a particular and important link to design thinking and design practices in policy making.

3.1.2 The normative model of policy making

Although Dewey, along with other pragmatist philosophers, is credited as one of the founding fathers of policy studies, his viewpoint of the state's experimental nature is not widely shared by those who went on to develop this area of analysis. Over the years, different conceptual lenses shaped the understanding of the role of the state and the nature of public action. These use different units of analysis to theorise about the state and political decision making, and these shape the normative assumptions underpinning policy making and the design of instruments used to implement them. The most prevalent of these emerged from a positivist and rational instrumentalist tradition. Public policy theories and perspectives broadly examine the basis of public decision making — who from within and outside the state is involved — and the process by which decisions become legitimate (Knill & Tosun, 2012).

Foundations of policy studies & analysis

Policy analysis has deep ontological roots in positivist tradition:

'[T]he development of policy analysis must be placed in the context of [a] rationalisation of the state and politics as a "policy-making" activity. (...) The Enlightenment notion that the world was full of puzzles and problems which, through the application of human reason and knowledge, could be "solved" forms the background to the growth of the policy approach.' (Parsons, 2005:pp.16–17)

The foundations of policy studies can be traced back to one of the founding fathers of sociology, Max Weber (1864–1920), in his work

25. Studies, mainly from the US, emerge from the 1930s onwards which draw on the work of American pragmatists (Laswell, 1971) and other progressive thinkers, such as Karl Popper. They sought to offer alternatives to earlier analysis focused on technical statutes - constitutions, legislation - as opposed to the way in which policy decisions are made.

26. This instrumental problem solving approach later grew with developments in the US in Operations Research (OR), where a strong view of the role of the state being that primarily of problem solver took hold.

about the modern bureaucracy and its administrative apparatus. Weber highlights how, at the turn of the century, instrumental rationality increasingly dominated modern society and public decision making (Weber, 2013), with planning, technical processes and the precedence of rational decision making over other forms of authority based on ethics, hierarchy, divine power and charisma (Morrison, 1998). His metaphor of the 'iron cage' describes the state's bureaucratic form, where everyday life is subordinated to technical criteria, 'precision, speed, knowledge of files and cases, (...) [and] norms of procedure' (Weber, 2013:p.973).

In the early twentieth century, rational instrumentality gained prominence in policy analysis and in the analysis of public problems.²⁵ This was reflected in the manner in which the policy process became conceived of primarily as a problem solving activity,²⁶ with significant focus on examining the factors that shaped processes of collective decision making that brought policies into being.

The most enduring of these, the policy sciences, applies scientific principles to policy process and implementation (Parsons, 2005:p.20). Harold Laswell (1971) was one of the first exponents of the policy sciences. For him, the policy sciences were a direct response to the failure of the social and political sciences to engage in a direct fashion with policy practice. Laswell defines policy sciences as:

'concerned with knowledge of and in the decision processes of the public and civic order. Knowledge of the decision process implies systematic, empirical studies of how policies are made and put into effect. (...) The emphasis on decision process underlines the difference between policy sciences and other forms of intellectual activity. By focusing on the making and execution of policy, one identifies a relatively unique frame of reference, and utilises many traditional contributions to political science, jurisprudence, and related disciplines.' (1971:p.9)

At the core of the policy sciences is the assumption about individual decision making as a rational activity aimed at maximising utility. Instrumental rationality's view of decision making has been challenged

27. Herbert Simon's contribution to policy analysis is 'without doubt more far-reaching than any other single theorist' (Parsons, 2005:pp. 21-22). A key figure who is also associated with design research, Simon challenges the unrealistic view of objective decision making; instead he proposes rationality as a 'satisficing' process. 'While economic man maximises - selects the best alternative from among all those available to him; his cousin, whom we shall call administrative man, satisfies, looks for a course of action that is satisfactory or "good enough".' (Simon, 1996:p. xxv).

28. The role of the expert becomes paramount, in guiding the increasing specialisation of knowledge used for the development of optimal policy solutions and mechanisms for managing implementation. Seen by many as detrimental, this model of working creates a separation between the state, policy makers, politics and citizens (Fischer, 1990; Lindblom, 1959).

in recent times. This includes studies on heuristics, on cognitive biases (Kahneman, Slovic & Tversky, 1982) and on bounded rationality, which views decision making as a process for 'satisficing'²⁷ needs as opposed to maximising utility (Simon, 1969). Regardless of this, these assumptions remain prevalent in normative policy practice.

Alongside the policy sciences, as outlined in Table 3.1, there are a number of other perspectives that provide alternative approaches to the analysis of policy making and decision making. These perspectives offer different insights into the key drivers shaping the relationship between the state, the public, the wider civic society and the nature of public action through policy making.

The perspectives outlined above, in challenging the policy sciences and instrumental rationality as a basis for policy making, all highlight the multifaceted dimensions of policy making activity, whether by approaching policy making as a problem solving activity, as something which aims to mathematically model human purpose and behaviour or as something mired in a social construction of reality or whose aim is to build consensus. These analyses, however, are in the main concerned with either exploring how the context of policy making determines policy designs or influences policy goals or how authority and legitimacy are construed to support state action. Little reference is made to the mechanics of policy making and the policy means used to shape human interactive and associative behaviour. Notwithstanding these challenges, policy sciences have deeply influenced the normative view of policy making practice and activity, given that they offer a unique and comprehensive account of the mechanics involved in the design of policy.

To undertake this, the policy sciences developed analysis about the activity of policy making and policy design on two fronts. The first sees the creation of specialised knowledge and comparative models specific to distinct policy areas²⁸ to accurately identify and solve policy problems. The second involves exploring the overarching policy process using heuristic models about how policy processes broadly

Basis for decision making & policy design	Key figures	Key concepts
Pluralism	Chalres Lindblom (1959)	<ul style="list-style-type: none"> - Public policy making as the 'sciences of muddling through' - Decision making involves building political consensus through the definition of goals, the evaluation of alternatives and the comparisson of options - Critical of rational analytical techniques which consider the activity of policy making as a series of stages, given that they are not reflective of the realities of consensus building or are appropriate to complex policy questions
Critical Theorists	Habermas (1976) Dryzek (1990)	<ul style="list-style-type: none"> - Propose a model of decision making to drive social change - Challenge instrumental rationality's benefits to society & superiority over other forms of knowledge - Rationality distorts human interaction (Habermas, 1979) - Rationality creates a precedent for control over and disempowerment of people and is unable to address complex policy problems with competing goals (Dryzek, 1990) - Preference for creating opportunities for direct democracy through non-hierarchical political movements - Encourage disagreements to challenge political order & drive transformative social conversations and empathetic citizenship
Public Choice Theorists	Buchanan & Tullock (1962) Downs (1957) V Ostrom (1973) E Ostrom (1990)	<ul style="list-style-type: none"> - Apply economic and mathematical modelling to predict individual behaviour by quantifying values, perceptions, constraints in available information, to also address shortcomings of instrumental rationality - Model degrees of uncertainty to predict and quantify probabilities which influence decision making - Take a rational view of individuals as self-interested beings seeking to maximise utility - Focus on debates on the nature of institutions, both public and private, and the products and services - Role of the state as minimal, mainly corrective but involves also the direct provision of goods and services, which the market itself cannot provide - Challenge principles of centralisation, instead favouring competition, choice and privatisation of public services - Elinor Ostrom's influential work on institutional design, self-government and the management of common public goods provides an alternative to public choice theory. To address the tragedy of the commons, citizens mitigate negative consequences from self-interested behaviour, in relation to common pooled resources, through self-organisation and the design of institutions that facilitate enlightened self-interest (1989).
Social Constructivist Perspectives	Durkheim (as described by Morisson, 1998) Talcott Parsons (1951) Merton & Nisbet (1971)	<ul style="list-style-type: none"> - Sociological approach to the social construction of policy problems and its effects on policy decision making - Social problems are dysfunctions of society, manifest in deviant behaviour - Later influenced also by John Dewey and the Chicago School - Examine the social construction of reality - How social constructions become legitimised and problems defined in society by collective behaviour

Table 3.1 Policy and decision making theories and perspectives.

operate (Parsons, 2005), which will be discussed below.

Solving policy problems through the specialisation of knowledge

The specialisation of knowledge into discreet policy areas seeks to generate evidence (Schneider & Ingram, 1997) to enable policy makers in quantifying policy problems, predicting outcomes (Cahill & Overman, 1990; Bobrow, 2006) and objectively anticipating the consequences of state actions (Schön, 1992). Ultimately, its aim is to achieve precision in policy problem solving and practice (Birkland, 2010). This knowledge and evidence is used to transform social, political and economic issues into policy problems, to accurately quantify them and to design effective policy solutions for implementation. As a consequence, it has driven the development of a set of decision making apparatuses to estimate and predict probabilities and drive efficiency into decision making processes (Schneider & Ingram, 1997).

Despite the challenges involved in basing policy design in accurately defined and quantified policy problems and solutions, this normative model of policy making makes use of specialised knowledge to seek accuracy in two ways. Firstly, to accurately diagnose policy problems by identifying the needs of target populations (Linder & Peters, 1989) — who create or are affected either as beneficiaries or burdens to the policy problem in question (Schneider & Ingram, 1997). And secondly, to increase the accuracy of the means deployed to affect target populations, and therefore solve policy problems, by calibrating these policy interventions. Recent literature from within the policy sciences acknowledges the shortcomings of such a technical approach to policy making and design (Howlett, 2013; Linder & Peters, 1988), arguing instead that the socially constructed, value laden and consensus dependent realities which accompany these processes should also be accounted for.

Linder and Peters (1984) suggest this tension between the technical and sociopolitical dimensions of the policy process reflects a wider ontological and theoretical mismatch between the founding theories

which underpin policy studies, namely philosophy, sociology and economics. This mismatch becomes apparent in the tension which exists in policy analysis between requirements to build evidence and to target interventions at a micro level against the inability to reconcile these types of analyses with macro-level explanations about values and causes (Figure 3.1). The outcome of this mismatch results in an ‘implicit choice between alternative mixes of precision and inclusiveness’ (Linder & Peters, 1984:p.245).

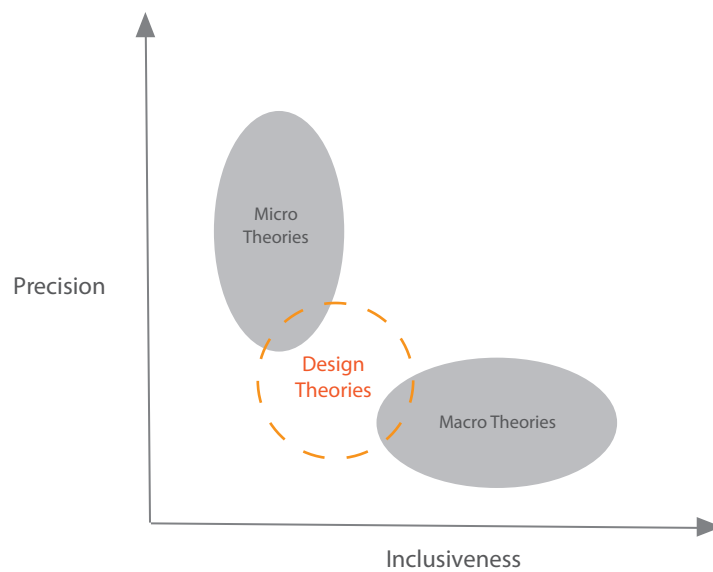


Figure 3.1
Trade-offs between precision and inclusiveness (Linder & Peters, 1984).

These debates from within policy design recognise the need to bridge such a divide between theories concerned with precision as opposed to those with a focus on a macro level of analysis (Figure 3.1). They question the overspecialisation of policy making into discreet areas of knowledge which, despite their benefits, might, in narrowing the focus of analysis, miss the bigger picture. They also suggest a clear gap in how specialised knowledge can inform the design of new alternatives, given its focus on accurately diagnosing policy problems and targeting population needs within specific contexts.

Despite this acknowledgement and the use of a broad definition of design, these debates fail to provide answers of how to address this need. They also raise a fundamental question of how technical considerations can be combined with socially constructed values in policy design activity. As I will show below, the policy cycle does little

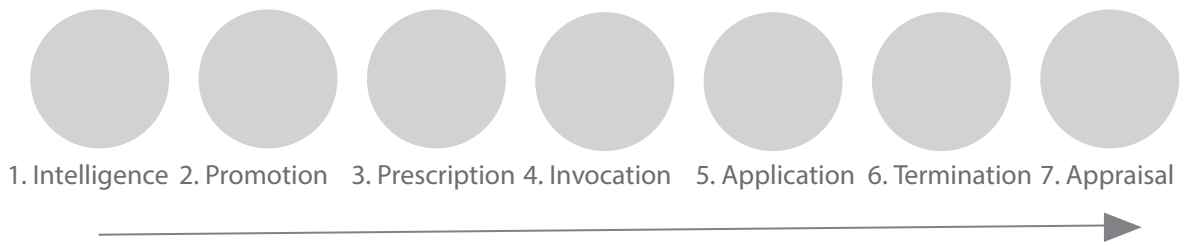


Figure 3.2 Policy cycle, Laswell (1956).

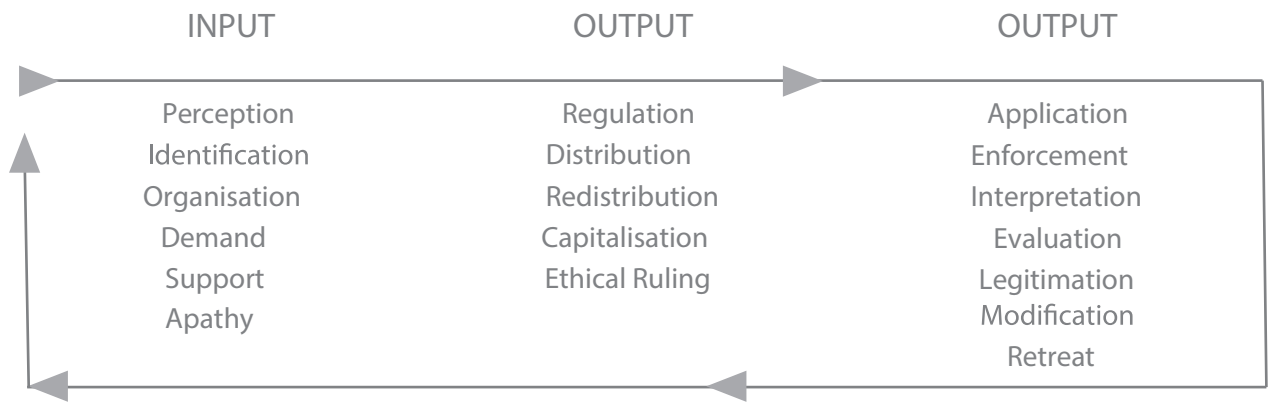


Figure 3.3 Policy cycle, Frohock (1979) & Jones (1970).

29. At the systemic end of the spectrum, David Easton's (1953, 1965) influential black box model divides the policy process into a complex system of received input flows being converted into policy outputs and outcomes. Writing from a structural functionalist perspective, his model accounts for the influence of wider political systems and institutions in the policy cycles (Parsons, 2005). Later, Frohock (1979) and Jones (1970) simplify the process into input, output and outcome stage. Brewer (1974) introduces the idea of cyclicity to the policy process. Finally, Howlett, Ramesh and Perl (2009) return to the idea of a sequence or funnel in the 'policy cycle-actor model'. Their model seeks to acknowledge the complexity of decision making by linking the cycle of activities interactively to roles undertaken by policy actors and institutions involved in each of those stages.

to address these shortcomings.

The policy cycle as a heuristic device

The policy cycle is one of the most enduring representations of the policy making process and is a tool to support policy making practice. Rooted in the policy sciences, it had Laswell as one of its earliest exponents. The process it broadly outlines is comprised of gathering intelligence — including the identification and measurement of the target population need, using expert knowledge — to the promotion of options and the prescription of courses of action and their application and appraisal (Howlett, Ramesh & Perl, 2009). The most popular representation of the policy process describes policy making as a series of interrelated stages, flowing in a sequential and linear fashion, moving from inputs to outputs (Laswell, 1956; Easton, 1953; 1965; Frohock, 1979; Jones, 1970). Other models (Figures 3.2 to 3.5) include a black box (Easton 1953, 1965), a series of inputs and outputs (Frohock, 1979; Jones, 1970), a continuous cycle (Brewer, 1974) or a funnel of divergent and convergent activities (Howlett, Ramesh & Perl, 2009).²⁹

Although they are widely accepted as elegant constructs of the policy process, the literature acknowledges the many disadvantages of these linear representations of the policy cycle (Nakamura, 1987; Stone, 1989; Lindblom & Peters, 1993; Sabatier & Jenkins-Smith, 1993), which cannot be further from the reality of policy making. Despite these shortcomings, the greatest advantage provided by these representations is a framework which simplifies the complexity involved in policy practice to a manageable form (Parsons, 2005; Cook, 1985). It also allows for different stages of the process to be disaggregated and investigated on their own merits as well as in relation to others within the cycle (Howlett, Ramesh & Perl, 2009).

The policy cycle is at best a heuristic device instead of a roadmap for policy making activity. Echoing Parson's (2005) views on the policy cycle as a 'stagist' model, 'as with all heuristic models, it must be treated with caution' (2005:p.80). The highly fractured and

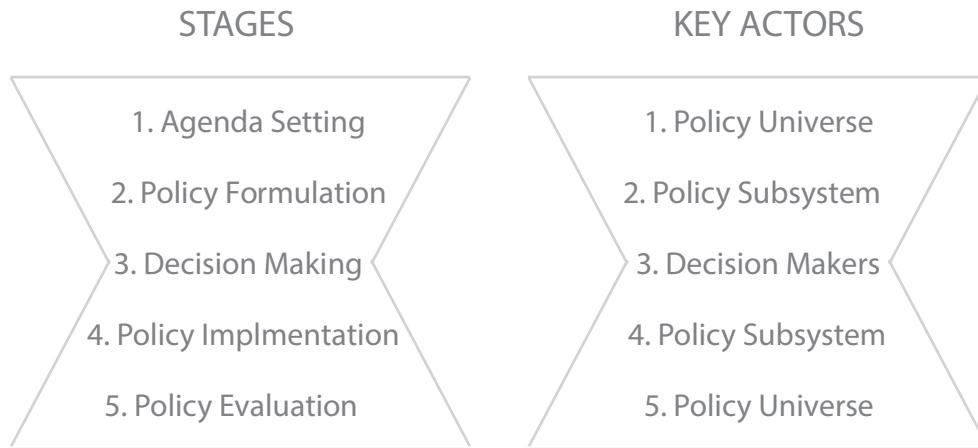


Figure 3.4 Policy cycle, Howlett, Ramesh & Perl (2009).

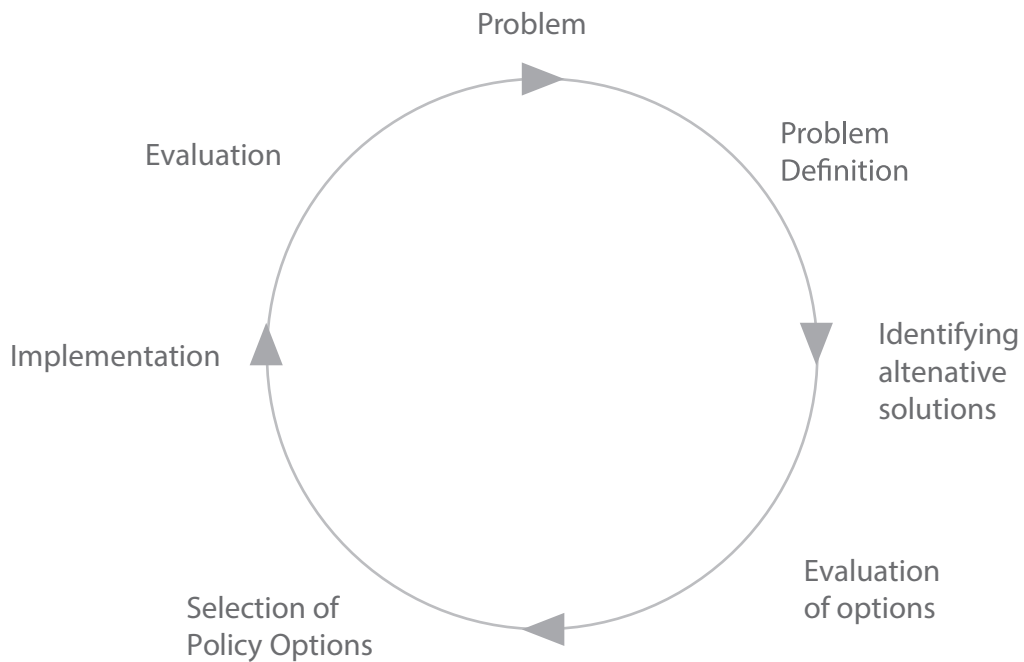


Figure 3.5 Policy cycle, Parson (2005).

multilevelled nature of policy making activity (Howlett & Cashore, 2009) means that a focus on the policy cycle per se, as the unit of analysis, is less relevant. It is too reductive in providing a roadmap of 'how' policies come about. It instead describes what is involved in each of the different stages of the policy cycle.

Furthermore, as Laswell's (1958) own definition of policies suggests, policy making involves decisions about two substantially different elements — policy goals and the means used to achieve them (Walsh, 1994). This creates a significant distinction between what is the policy content — where policy studies mostly focus — and how it goes about achieving its goal. This distinction between policy content and means spans across the different macro, meso and micro levels of decision making and governance (Howlett, 2011). Policy design at these levels (Table 3.2) points to qualitatively distinct policy design considerations which cannot be accounted for if analysis is structured around the policy cycle.

'Policies are complex entities composed of policy goals and means arranged in several layers, ranging from the most general level of a relatively abstract governance mode, to the level of a policy regime and finally to the level of programme settings (Cashore & Howlett, 2006; 2007; Howlett & Cashore, 2009).'

(Howlett, 2011:p.16)

The policy cycle offers a disjointed approach to policy design and problem solving, given that actions at a micro programme level are draw on and are informed by decisions at the meso and macro levels of policy making.

Even as a heuristic tool, the policy cycle is too reductive to inform policy design. This is particularly the case considering the design of policy instruments, which, due to their nature, affect many different levels of decision making. An analysis of policy means and instruments, from the perspective of the policy cycle, confines them to a technical consideration at the policy formulation stage. As the literature suggests, a focus on the policy cycle is of a second order (Linder & Peters, 1984) and is altogether less relevant. Coupled with the high

	Macro	Meso	Micro
	Governance	Policy Regime	Programme Settings
Goal	General abstract policy aims & ambitions in a specific policy area	Operationalisable policy objectives Areas policies are expected to address to achieve policy aims	Specific policy targets, on-the-ground micro-requirements necessary to attain policy objectives
Means	Long-term preferences of government in terms of the types of organisational devices to be used to address policy aims	Policy tool choices The specific types of governing instruments to be used to address programme level objectives	Specific policy tool calibrations & 'settings' of policy instruments required to attain policy targets

Table 3.2 Layers of decision making and components of policy making (Howlett, Ramesh & Perl, 2009).

Concerning Production	Instrument Examples
1. Who produces it	licences, procurement, subsidies
2. Types of goods and services produced	bans, limits or incentives
3. Quantity of good or services provided	subsidies or quotas
4. Quality of goods or services produced	product standards, warranties, consumer protection
5. Methods of production	environmental standards, subsidies for modernisation, direct regulations
6. Conditions of production	health & safety standards, minimum wage, inspection, legislation
7. Organisation of production	unionisation rules, antitrust laws, taxation
Concerning Consumption and Distribution	Instrument Examples
1. Prices of goods and services	regulation of fares, rents, rationing
2. Actual distribution of produced goods and services	location & type of schools, hospitals, housing, types of tenures & leasing
3. Level of consumer demand for specific goods	information release, labelling, export /import taxes
4. Level of consumer demand in general	interest rates, monetary and fiscal policies

Table 3.3
Effects of substantive instruments affecting goods and services; adapted from Howlett (2011).

Significantly, the literature recognises that policy instruments shape the behaviour and the relationship between citizens and the state. In doing so, it challenges the view that policy instruments are purely technical components of policy making. Instruments not only affect the behaviour of those involved in producing them, but they also affect the behaviours of those consuming these goods and services, regardless of their institutional origin (Hall, 1990):

‘policy tools, in close conjunction with the rules that specify what is to be done, define the kinds of experiences target populations will have with the public policy and they define the way different agencies will relate to one another. For the target populations, tools send clear signals about what kind of people they are, whether they deserve the benefits or burdens that have been assessed, and what their capacities are.’ (Schneider & Ingram, 1997:p.96).

For Schneider and Ingram (1990, 1993, 1994), writing from a social constructivist perspective, policy instruments are not only mechanical but also have a symbolic dimension in that they shape people’s experiences of the state and frame policy problems and the feasibility of new policy designs. These arguments are significant to my analysis, given the implicit acknowledgement, from within policy studies, of the interactive nature of policy instruments.

degree of specialisation of knowledge, these fail to inform analysis about the nature of state action through policy instruments as the means and mechanisms used to bring policies to life.

3.1.3 Moving beyond specialised knowledge and the policy cycle

The emergence of policy design as a distinct area of analysis within policy studies (Salamon, 1989) reflects a growing concern and awareness of the need to explore the instruments which enable policy intervention as its effects on policy outcomes (Laswell, 1954). Deeply influenced by Herbert Simon's considerations of design research, policy design responds to the high degree of specialisation in policy making (Bardach, 1980; Salamon, 1981). It is also driven by shifts in public administration, which took hold from the 1980s onwards, that required new instrument designs to support changes in the new forms of governance associated with the deregulation and the privatisation of public service delivery (Howlett, Ramesh & Perl, 2009; Howlett & Lejano, 2013).

As one of the main exponents of this approach, Howlett (2011) argues that the instruments and means used to achieve policy determine the feasibility of policy goals and come to effectively define them:

'Policy designs are observable phenomena found in statutes, administrative guidelines, court decrees, programs, and even the practices and procedures of street level case workers as they interact with policy recipients. The texts (provisions) of policy are part of the design as are the practices that reveal who does what, when, with whom, with what resources, for what reason, and with what kinds of motivating devices.' (Schneider & Ingram, 1997:pp.2-3).

Linder and Peters (1988) go further as they seek to establish a distinction between policy design and other areas of policy studies, given its inability to support of the design of new policy alternatives:

'Under these circumstances, only the most familiar strategies receive attention as possible solutions. Strategies producing even minimal success are guaranteed not only longevity but many

30. Procedural instruments (Ostrom, 1986) affect the behaviour of actors, the state or otherwise, who are directly involved in policy delivery and implementation. Substantive instruments in contrast, are concerned with the production, distribution, delivery and consumption of actual goods and services.

reincarnations (...) Moreover, there is a tendency to choose policy instruments on the basis of how they work, without seriously considering how well they may perform given what needs to be accomplished (...) Policy analysts, trained primarily in the social sciences, also de-emphasise the design of solutions, preferring instead to concentrate on the comparison and evaluation of given alternatives. Left to the political process, designs emerge less as the result of creative, systematic effort than as a product of experiences, precedent and expedience. Analytic skills simply are not devoted to the formulation of alternatives. The professional analyst typically accepts the set of alternatives as given, the product of some advocates' entrepreneurship and of political compromise. The analyst's role then is not to remake the alternatives but to predict their impact and, to an increasing degree, to evaluate the prospects for enactment and trouble-free implementation.' (1984:pp.251–252)

As a result, Linder et al. (1988) argue a focus on policy instruments is 'meta-oriented, and, therefore one step removed from the study of policy and policy making' (p.744), which focuses on evaluating poor implementation and mismanagement rather than poor instrument design in and of itself (Linder & Peters, 1984:p.251). Policy design shifts the analysis away from the evaluation of policy content against goals to the examination and design of instruments.

Echoing Dewey's work on the machinery of the state, policy design places emphasis on the 'tools of government action, on the "techniques" of social intervention' (Salamon, 1981:p.256). These instruments deeply affect the content — what goods and services can be delivered — and the behaviour of the actors — the state or otherwise — directly involved in policy implementation. As I have outlined in Table 3.3, Howlett (2000) distinguishes these two distinct types of instruments as procedural — how goods and services are produced — and substantive — which involves how these goods and services are consumed and distributed.³⁰

Frameworks for assessing policy instrument choice

To support the policy instrument design process, the literature proposes a number of comparative frameworks which assess the effectiveness of different instrument choices and options as a way of systematically informing instrument design (Linder & Peters, 1990, 1984). Different instrument choice considerations include technical and political constraints on state action (May, 1981; Sidney, 2007), the recognition of a range of drivers including resource limitations, the lack of credibility, capacity, legitimacy and the feasibility of instruments (Majone, 1989). These analyses have evolved over the years to include the evaluation of the impact of instruments on policy outcomes and studies which assess the legal ramifications of implementation failures (O'Toole, 2000).

Early attempts to inform policy instrument design sought to classify policy instruments by typologies and taxonomies (Lowi, 1966; Tupper & Doern, 1981; Hood, 1986). Lowi (1966) was the first to propose a framework to analyse policy instruments and tool choices. In it he sought to assess the degree of coercion needed for implementation and for targeting actions to specific target populations and beneficiaries. Later, in *The Tools of Government*, Hood (1983; 1986) shifted the focus towards assessing the different kinds of resources which instruments rely on — information, authority, finances and organisational capacity — and their degree of availability to the state. Another useful framework for modelling instrument choices is provided in Phidd's and Doern's (1983) policy continuum, where policy instrument fit is assessed alongside adoption within different governance preferences, linking policy instruments at a macro level of policy making to modes of governance and target population behaviour.

More sophisticated frameworks, such as the one provided by Schneider and Ingram (1997), not only recognise the availability of resources and their adoption by target populations but also account for the belief or entitlement felt by target populations in relation to these resources. These frameworks highlight how policy instruments not only seek to alter the behaviour of target populations but do so by

offering incentives, by motivating and by authorising people to take particular kinds of action (Schneider & Ingram, 1990). Furthermore, as most instruments are not deployed in isolation, the recent literature also explores the complementarity in the mix of policy instruments (Howlett, 2011; Barnett, et al. 2009; Buckman & Diesendorf, 2010) to assess how instruments interact with one another and within the wider policy system.

Table 3.4 combines Howlett's (2011) own instrument choice framework with the analysis developed by Hood and Schneider et al. as well as Ingram's, Phidd's and Doern's contributions. It highlights that instruments are not absolute entities but are instead relational in nature (Howlett, 2011:p.55). This is significant to my analysis, as instruments are:

‘composed of both a state capacity and a target group belief creating a “governance” relationship between the two parties to a policy arrangement.’ (Howlett, 2011:p.55)

The instrument choice criteria framework creates a link between three key elements involved in instrument design — organisational capacity, resource availability and adoption by citizens and target populations against predicted needs — to assess the constraints involved in instrument choices and design. Howlett's framework outlines four types of resources and adoption prerequisites. This includes nodality or the ability to transmit information to people and stakeholders, which requires credibility and visibility by target groups to be effective. Authority as an enforcement capability to coerce and force people to do something they might not wish to requires legitimacy in eyes of the citizens, the target populations, for it to be successfully deployed. The third element in Howlett's framework involves fiscal capacity to incentivise or disincentivise acts, determined by the availability of funds and cost measurements. Finally, organisational instruments provide administrative capacity to deliver services and goods, requiring trust by the citizens and target populations in the ability of these organisations to deliver policies. These debates demonstrate a shift in understanding of policy instruments away from

Organisational Capacity	Resource Availability	User Adoption Requisites	Choice Criteria	Calibration Criteria
Knowledge	Nodality / Information	Credibility	Visibility	Targeting Precision
Enforcement	Authority	Legitimacy	Intrusiveness	
Money	Treasure / Finance	Cupidity	Cost	
Administration	Organisation	Trust	Automaticity	

Table 3.4 Implementation tool criteria adapted from Howlett (2011).

a top-down perspective, involving resource allocation, towards an acknowledgement of the significance of understanding adoption by target populations and the relational characteristics of instruments in how they shape these interactions. Combined, these elements also open the way for the potential contribution of design to these debates.

Despite the significant insights drawn by these debates in the interactive nature of policy instruments, design activity is at best conflated with evaluative purposes. That is, design practice is equated with assessing instrument choice, fit to policy contexts, and with the weighing up of options and choices. Limited guidance is available, as is recognised in the literature, about how and what design capabilities are needed to design new policy instruments and to redesign existing ones (Howlett, 2011; Linder & Peters, 1984).

The recognition of the interactive nature of policies and their instruments alongside the need to design new alternatives, rather than to repurpose existing ones, points to a clear gap and an opportunity for design research in this area. Before examining the contribution of design to public services and policy making, it is important to situate these debates within the context of public policy and administration. The recent application of design to public services tends to be associated with innovation in public management. It is often discussed as a shift away from top-down models of governance and service delivery towards more collaborative forms of public governance. Of significance to my analysis, public management debates illustrate the changing nature of interaction between the state, the public, the market and other sectors of civil society — and the preference for the types of instruments favoured under each of these different governance paradigms. These preferences not only frame the nature of public interaction but also drive a newfound interest in the study of policy instruments in response to changing requirements and the nature of state intervention. It is therefore relevant to briefly consider these debates.

31. 'The hierarchical structures of public bureaucracies were very effective in the mass-production of standardised public services in the post war period, but they are now often found to be too rigid to respond rapidly to the fast-changing and increasingly diverse patterns of need in today's multicultural communities, being disconnected from the front line where needs and problems are first identified and where tailor-made solutions have to be developed and tested.' (Bennington & Moore, 2011:p. 11).

3.1.4 Interaction at a strategic governance level

In this section, I will refer briefly to the literature on public administration, drawing on Bennington's and Hartley's (2001) analysis of the roles of the state in each of these three paradigms of public management and governance (Table 3.5). These debates illustrate the different attributes and types of interaction between the state, civil society and the public which characterise different forms of public governance. Despite their differences, these paradigms are not mutually exclusive. Instead, they happily coexist in and across different policy areas — health, education and housing — depending on the contexts and organisational capacities present for policy implementation and public service delivery (Hartley, 2005:p.29) and depending on the instruments available for state intervention.

Forms of public governance

Up until the early 1980s, public governance was typically characterised by bureaucratic and hierarchical structures. Known as public administration, it was underpinned by political and economic theories which distinguished between public goods provided by the state as opposed to private goods provided by the markets (Bennington & Moore, 2011). By embodying Fordist modes of production and organisational form, public administration sought to standardise services and practices to ensure universality of public services at the point of access. This assumes the delivery of policy benefit to a fairly homogeneous population which has well established needs. In this model, professionals and civil servants, in their capacity as experts, are authorised to and do provide welfare, on behalf of the state, in its role as the sole provider of public goods.³¹ Civil society plays a limited role by delegating the responsibility to policy makers for the development of legislative technology and governance apparatuses to deliver against policy goals.

In response to the public sector's perceived lack of efficiency and effectiveness, the emergence of New Public Management (NPM) (Dunleavy & Hood, 1994; Dunleavy, 1991) favoured market led approaches to public service delivery and policy implementation

	Traditional Public Administration	New Public Management	Networked Governance
Context	stable	competitive	continuously changing
Target Population	homogeneous	atomised	diverse
Needs / Problems	straightforward defined by professionals	wants expressed through the market	complex volatile and prone to risk
Strategy	state producer-centred	market customer-centred	shaped by civil society
Governance Mechanism	hierarchies	markets	networks and partnerships
Actors	public servants	purchasers and providers clients and contractors	civic leaders
Theory	public goods	public choice	public value
Instruments	direct organisational administration, enforcement	fiscal, informational, enforcement	fiscal, informational, enforcement

Table 3.5 Paradigms of public management adapted from Bennington and Hartley (2001).

32. Bennington and Moore (2011) suggest networked governance lacks the support of an economic and social theory to provide a clear conceptual framework criteria to assess its outcomes. It partly mirror Gidden's (1998) concept of a 'third way', where a competitive market and a redistributive state act to balance and foster economic innovation and social justice.

(duGay, 2000; Streeck, 2012; Streeck & Scmitter 1985). As I alluded to through examples in Chapter 2, NPM unleashed a significant wave of organisational reform within the public sector, favouring the disaggregation of public service delivery from state functions as a way of increasing competitiveness in how public services were procured and delivered. In its preference for market led initiatives, NPM shifted the guardianship of service delivery and public reform to external expert providers (Budd, 2007). This in turn created a clear divide between those making policy and those commissioning public services (Pollitt & Bouckaert, 2004) vis-à-vis those delegated the responsibility for delivering public services through semi- or fully independent organisations. This shift, however, was not accompanied by a comprehensive review of policy instruments required to support this model of public management (Howlett, 2011). NPM as a management model relies broadly on instruments of a regulatory nature in the form of regulatory bodies, legislation and compliance measures to monitor and evaluate performance to ensure the quality of public services and of the providers who deliver on behalf of the state. Centralised setting of targets becomes key to the delivery and implementation of policy. Ironically, it also sees an extension of the bureaucratic form (Budd, 2007), as public managers now deliver policy outcomes, in quasi-market competitive arrangements, through publicly commissioned and underwritten services (Budd, 2007). Citizens in this instance are viewed as customers who should be provided with choice rather than have their predefined needs addressed.

In contrast, networked governance (NG) emerged in response to NPM market driven approaches. It brought with it renewed attention on the role of civil society as one which 'mediat[es] and co-ordinat[es] inter-organisational policy making' (Klijn & Koppenjan, 2000:p.136) and delivery. No longer is state intervention left to expert public servants or market providers, but instead, it is conducted through a series of enabling networks which foster institutional interaction through collaborative, cooperative and competitive policy practices both between and within these networks (Klijn & Koppenjan, 2000; Klijn & Teisman, 2000).³² Evidence suggests (Hartley, 2005) that the

33. Comprising the interaction between the economy and the state.

34. 'Challenges facing governments and public services therefore include how to complement improvement of basic services for individuals, with strategies also to improve the context and culture within which individuals live and work; to strengthen longer-term preventive measures as well as short-term remedial services; to create the preconditions for the development of communal and shared responses to needs; and to support and promote the development of citizenship, "the community" and the public sphere.' (Bennington & Moore, 2011:p. 33)

emergence of these new forms of public service delivery respond to a highly fragmented and diversified social context. Strong 'citizen-centric' and collaborative focus are characteristic of these new forms of governance. However, as is the case with NPM, NG is not accompanied by the development of appropriate policy instruments to support it. These debates also point to the transformative role of technology (Dunleavy et al., 2006), new information systems, ICT infrastructure and open government, open data and social innovation (Mulgan, 2011, 2013; Manzini, 2015) in increasing the state's ability to solve social problems through these networks. However, NG presents challenges to public managers in how to develop complex institutional arrangements to support a more collaborative and demand-driven approach to public governance and policy reform.

Debates on public value

Underpinning the public administration debates are the theories concerning public value (Moore, 1995; Bennington & Hartley, 2001; Hartley, 2005; Bennington & Moore, 2011). The notion of public value extends a consideration of value beyond market driven circumstances to 'also encompass social, political, cultural and environmental dimensions of value' (Bennington, 2011) and to guide the state in steering complex social systems (Newman, 2001) and networks of collaborative interaction. Control is replaced by a focus on the relationships and interactions between the state, civil society and its citizens. Distinctions between civil society,³³ the state and markets become more porous as these actors are encouraged to co-produce public outcomes.³⁴ In the context of these debates, there are some who welcome a more entrepreneurial approach to the creation of public value (Mazzucato, 2011), where others (Budd, 2007) warn against overlooking the difficulties of managing services in a way which, perversely, reinforces the need for further standardisation of day-to-day service to ensure accountability and regulatory oversight.

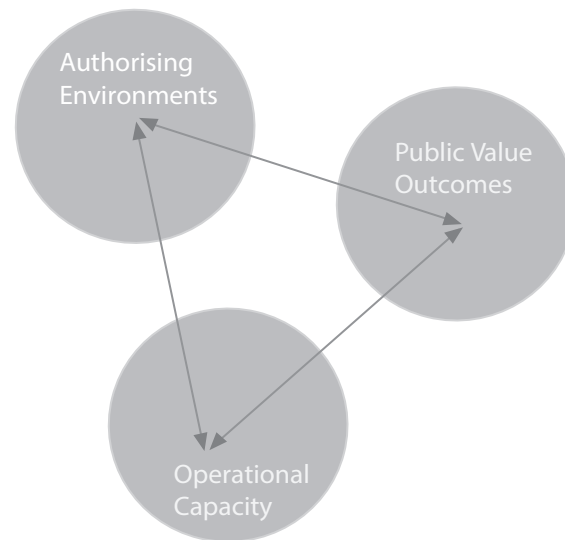


Figure 3.6
The Strategic Triangle of
Public Value (Bennington
& Moore, 2011).

The literature suggests, as outlined in Figure 3.6, that there are three key elements which are required for the creation and delivery of public value. The first involves operational capacity, resources and people, from within and from outside of the state, to support the creation of public value. The second relates to the existence and presence of consensus in the form of authorising environments required to design and to implement new approaches that create public value and deliver service innovation. The final element involves the definition of public value outcomes and goals. It is in the interaction between these three elements — resources, authorising environments and the alignment between policies and their goals — which allows public value to be strategically uncovered and delivered by policy makers.

As a concept, public value has been met with varying degrees of enthusiasm and scepticism by those within the policy and wider specialist policy fields. However, debates surrounding public value remain at a strategic and rhetorical level of policy making (Alford & O'Flynn, 2009). The literature offers little guidance to how it can systematically be applied to policy design and implementation. Despite there being little overlap between public value theories and the debates emerging from policy design and concerning instrument choice frameworks, the combination of the concept of public value with instrument design provides an interesting dimension to my analysis. This is especially, as in Section 3.1.3, given that instruments are of a

relational and interactive nature, in that public value comes to express the legitimacy, automaticity and viability of certain instrument choices. Fundamentally, it points to the need to design policy instruments which can foster the kinds of interaction between the state, the public and civil society that deliver public value to achieve policy intent.

3.1.5 Summary

In this first part of the literature review, I have outlined the theoretical foundations and some of the fundamental challenges faced by policy studies which underpin my analysis and provide it with a point of departure. Dewey's distinction between the state as a functional capacity — in its body of laws and regulations — as opposed to its form as the institution of government and how the changing nature of challenges which arise from human interaction suggests the need for the state to constantly reinvent itself.

Instrumental rationality which permeates normative models of modern bureaucratic form as well as policy analysis, confining policy design to an evaluative activity. These shortcomings in designing policy are acknowledged across the policy literature, as they not only constrain policy design to a limited set of already existing options, but they also fail to address the demand for new policy directions.

Considerable attention is given to examining the policy cycle as a model for policy making. despite it failing to grasp the complexity of decision making involved in policy making activity. It further fails to account for the distinct macro, meso and micro levels of decision making and governance which cross-cut the different phases of the policy cycle.

As policy making involves not only the definition of policy goals. It also encompasses the design of the means to achieve these goals, that is, the very instruments which, in turn, determine the feasibility of policy goals. Critically, policy instruments determine what public services and goods are delivered as a result of state intervention.

Policy instruments shape our experiences of the state and, given their relational nature, they also shape the behaviour of citizens and the viability of state action. As I discussed earlier, to support the design of instruments, the literature's response has been to develop instrument choice frameworks which catalogue and assess different typologies of instruments. Again, these tools and frameworks do little to support the design of new instrument alternatives; instead, they seek to optimise instrument calibration to particular policy settings.

Finally, the increasingly interactive nature of instruments, characteristic in the relationship between the state, civil society and the public, has become a key feature of recent analysis across policy studies and public administration debates. It demarcates instrument preferences for a new governance paradigm where the dimension of public value becomes the ultimate expression of successful forms of interaction between the state and civil society to guide the design of policy instruments in each of the distinct paradigms of governance. As we will see shortly, recent design contribution to public services has begun to be recognised in the course of public administration debates, as it explores new service models for collaborative governance and social innovation. In the remainder of my literature review, I will focus on two distinct areas of analysis — design research in the context of services and policy and the theory of affordance — to examine how these might support the challenges identified thus far and what this might mean for future policy instrument design.

3.2 Design for Public Services

In this section, I will assess and explore the contribution of design research and practice to policy making and address the interactive nature of policies. I begin by contrasting definitions of design provided from within the field of design with those, as I discussed earlier, emerging from a policy studies perspective. As I will demonstrate, design practice and research are uniquely placed to support policy making and instrument design, due to the fact that they are projective in nature. I will also discuss how design practice and design research

are well placed to address directly how to develop a policy practice which accounts for and works with the dynamics of interaction between artefacts — physical or otherwise — and people.

This leads to a discussion where I will examine key design and service design constructs prominent in the research literature to assess critically how each of these constructs helps address the shortcomings identified the first part of the literature review.

As I will demonstrate, despite the recent contribution of design, service design and design for services and policy to public service innovation and policy making, efforts have, in the main, been located at the micro level of policy implementation. Intervention at the micro level of policy making offers little scope for design to contribute at a more strategic level to define policy means and goals, since at a micro stage, these are already broadly defined. I query the view emerging from design for policy research, which defines policies as services. I suggest instead that policy instruments, as they define and inform the content and the organisational system by which services come into being, act as meta-interfaces for policy delivery and implementation.

I will also discuss how recent efforts, despite bringing into focus the co-creative and human centred design perspective in policy making, approach interaction as given, as an outcome of adopting design methods. This fails to address, as I will discuss, how design practice might be developed to respond to the interactive nature of policies, their instruments and the contexts in which they intervene. To address this, I will conclude the analysis by considering the theory of affordance, which has its origins in ecological psychology but was later developed by interaction design, to examine how an understanding of the interactive nature of instruments can be enhanced by this construct and, in turn, how to extend its use towards a service-oriented perspective within a policy context.

3.2.1 Design as an emerging tool for policy making

Increasingly, design practitioners are concerning themselves with the

contribution of design thinking and practices to service innovation in the public sector. Design activity in a public context is not in and of itself new. Junginger (2013b) observes, echoing Schneider and Ingram's (1997) analysis which I discussed in Section 3.1.3, that much policy making is in fact design activity — albeit carried out by silent designers (Gorb & Dumas, 1987), who create systems, policies and institutions which fundamentally shape our experiences of public services and the state. It is well accepted by policy makers that design practice, at its most basic level, can significantly contribute towards increasing service accessibility, facilitating use and bringing ease and a more user-friendly experience to public services. The growing interest of the public sector in design practice often sits alongside ongoing debates on public sector innovation and the drive for public sector efficiency.

The service design literature concerned with policy making and public service innovation broadly accepts narratives which call for innovative approaches to address the growing complexity faced by current governments (Bason, 2014; Bunt & Christiansen, 2014; Manzini, 2013, 2014; Banerjee, 2014). This concern echoes the literature from public administration and public service innovation, which much of the design for policy research draws upon (Ansell & Torfing, 2016; Bourgon, 2008, 2011; Mulgan, 2007). Whether complexity is framed within a problem solving context — as ill-defined problems (Junginger, 2014; Bason, 2014) or wicked problems (Buchanan, 1990; Bunt & Christiansen, 2014; Banerjee, 2014) — or as opportunity spaces which create platforms for action (Manzini, 2013), managing this complexity is widely accepted as the challenge for current governments — requiring integrated responses from the state and new institutional forms sufficiently adaptive to these diverse circumstances — and one which design practice is seen to be able to contribute towards.

It is important to situate these emerging design debates alongside the policy literature outlined in Section 3.1. If one accepts, as I discussed earlier, that policy making entails making decisions across several different layers of governance — from operationalising policies

through services to defining the means or goals these services are to deliver against — design's current contribution, if assessed critically, tends to be concentrated at the micro level of policy making, that is on improving service delivery by making overall service experiences more desirable, accessible and attractive (Bason, 2015). Figure 3.7 situates the design contribution to policy making to date, which includes efforts in the following key areas:

1. **Problem Diagnosis:** The redefinition of policy problem spaces in day-to-day policy delivery using user and human centred design approaches. These also have the potential to impact the definition of wider policy goals — at a meso level of policy making;
2. **Decision Making:** Service redesign through the means of collaborative and co-design practices used to envision new service models and future policy implementation scenarios;
3. **Service Proposition:** Design practice to address issues of accessibility, desirability to improve overall public service experiences and the effectiveness of operational models; and
4. **Organisational Principles:** Policy innovation through new service models and collaborative organisational models.

The focus of design activity at the operational end of the policy spectrum is understandable, given design's growing expertise within the realm of services. This, however, limits design's contribution to intervention at a level where policy goals and means are already defined. It occurs in spite of the recognition from across the policy and design fields for the need to address the wider structural and strategic issues which face our public services and current policy making practices. A failure within the design literature to situate its contribution within the policy debates also prevents its ability to demonstrate the potential of design practice to challenge existing policy design models and to help drive innovation in more strategic areas of policy making.

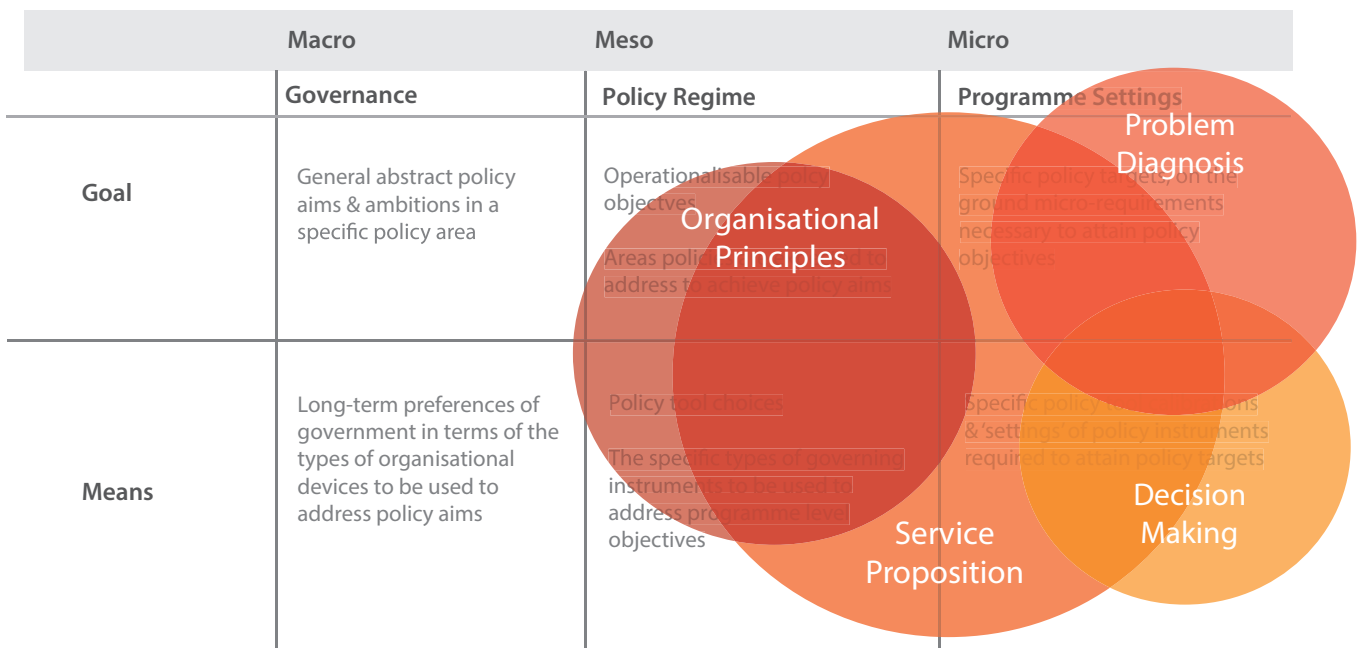


Figure 3.7 Contribution of service design, design for services and design for policy in the layers of decision making and components of policy making.

35. They draw their understanding of design from the work of Herbert Simon (1969), a key figure in design science. Schneider and Ingram (1997) suggest strongly that elements involved in policy making are essentially artificial in nature.

Design focus at this level does not reflect what I believe is a growing realisation of design's potential to play a significant role across the full spectrum of policy design and public governance. In the analysis which follows, I will explore this in more detail. But first it is important to understand what exactly is meant by design and how it differs from how policy design conceives of it.

3.2.2 What is meant by design?

To understand design's unique contribution to policy making, it is important to examine the similarities and differences between the activity of designing, as defined from the perspective of policy studies, in comparison to the definitions of design provided from within the design discipline.

Policy studies refer to design as a systematic activity of planning and scoping. In its simplest form, design is understood as a problem solving activity through which the best and most optimal solutions are found to clearly identified problems. Despite this association with problem solving, the policy debates also acknowledge that policy design is unable to produce finite outcomes. Policies constantly evolve, which means policy design activity also involves the practice of consensus building amongst multiple or disparate actors. There are some from within the policy design literature who go further in drawing their understanding of design directly from the design field. They define design as a broader concept of human invention and creation of the artificial,³⁵ implying that it is both a process as well as an outcome of human activity:

'While somewhat similar in this regard to activities such as planning and strategic management, policy design is much less technocratic in nature than these other efforts at "scientific" government and administration (Forester 1989, Voss et al. 2009). (...) As May (2003, 226) has argued, rather than treating design as simply a technical activity of finding the best design, it should be seen to involved channelling the energies of disparate actors towards agreement in working towards similar goals. In this sense, policy designs contains both a substantive component — a set of alternative arrangements potentially capable of resolving

or addressing some aspect of a policy problem, one or more of which is ultimately put into practice — as well as a procedural component — a set of activities related to securing some level of agreement among those charge with formulating, deciding upon, and administering that alternative.’ (Howlett, 2011:p.4)

‘Designs are variously intended to fulfil educative, economic, aesthetic, personal and other somewhat disconnected aims, some of which may be partially conflicting. A number of different designers are involved at various points in time and each may have different ideas of what constitutes success. People attribute meanings to designs — whether the designs are those of books, cities, public policy or any other humanly created object — and people act on their interpretations, which may be quite different than designers’ intentions. Through time, the meanings of designs become socially constructed and accepted as a “natural” part of the design itself even though other constructions are possible. Designs seldom stand in isolation, but rather are part of a larger whole and contain within themselves a multitude of submerged designs. Designs are not fixed and static but constantly evolving. Not all parts of designs are physically obvious in the object itself.’ (Schneider & Ingram, 1997:pp.1-2)

The perspectives outlined above point to some significant parallels between the definition of design in policy studies and that from within a design epistemology, namely that design activity moves beyond a purely technical endeavour and involves building consensus and is context dependent and socially constructed in nature. These perspectives reflect closely Herbert Simon’s (1969) influential work, *The Sciences of the Artificial*. Despite this overlap, in practice, policy design is mostly confined to an evaluative function (Section 3.1).

Simon’s definition of design as a science of man made things, whose subject can range from the study of artefacts to that of organisations, provides a broad basis and subject area for design as an epistemology and research field:

‘Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual

activity that produces material artefacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state.' (Simon, 1996:p.111).

For Simon, the universality of design capacity is present in every human being. Whoever is involved in devising new courses of action to change existing situations is also involved in the activity of designing. Simon also highlights that design activity is inherently co-creative in nature, bringing it into dialogue with other fields of knowledge and subject areas. The vastness of design's subject matter is also echoed in Archer's (1981) and Buchanan's (1995) definition of design, as that of exploring and producing knowledge about the artificial. For them, the design is understood as:

'...a systematic enquiry whose goal is knowledge of, or in, the embodiment of configuration, composition, structure, purpose, value, and meaning in man-made things and systems.' (Archer, 1981:p.33)

'...the discipline [of design] is the exploration of instrumentalities, technologies and specific methods which are suited to the changing circumstances of contemporary culture.' (Buchanan, 1995:p.29)

'Design rests on the ability of human beings to reason and act with prudence in solving problems that are obstacles to the functioning, development, and well-being of individuals and society. Furthermore, design is enquiry and experimentation in the activity of making, since making is the way that human beings provide for themselves what nature provides them only accident.' (Buchanan, 1995:p.30)

Despite these similarities, there is a qualitative difference between how design, as a practice and way of knowing the world, is approached by those in the design field as opposed to those from outside of the design epistemology. As Buchanan suggests, problem solving from a design perspective is arrived at through making and experimentation rather than, as the policy doing debates illustrate, by evaluative means.

It involves acquiring knowledge through projective activity — as man-made things come to embody how things are composed, formed and given value and meaning through making (Archer, 1981; Frayling, 1993; Findeli, 2008; 2010; Jonas 2007, 2012). These differences not only affect the outcome of design activity but also highlight significant epistemological and methodological implications for research activity, and they will be examined in more detail in the next chapter.

Archer and Buchanan go on to argue that design practice and the design process is context-specific, belonging to a particular time and culture. This is reflected in Simon's work, where he also argues for the context-dependency of design. For Simon, the situatedness of design becomes expressed through its interfaces, which embody the interaction between the context and the means by which one comes into contact with it:

‘The artificial world is centred precisely on this interface between the inner and outer environments; it is concerned with attaining goals by adapting the former to the latter. The proper study of those who are concerned with the artificial is the way in which that adaptation of means to environments is brought about and central to that is the process of design itself.’ (Simon, 1996:p.113).

The nature of this interaction between the context and what Simon calls the artificial world becomes the focus of design enquiry and practice. In contrast to the policy studies debates, where the onus is on defining the nature of policy problems through the specialisation of knowledge, for design, the interaction between people, the context and artefacts is central to the debate. Interaction, from a policy studies perspective, is static and something to be managed as a result of well-defined target populations and well-targeted and calibrated means of intervention. Design's focus on interaction provides a qualitatively and epistemologically alternative perspective to conceptualise interaction and design in response to its dynamic and interrelated nature. This is not only significant in defining design but also in confirming the object of design enquiry as one which involves working with and in response

36. Borrowing from Aristotle's treatise poetics, as a form of study which is inherently integrative in nature, combining 'theoretical knowledge with practical action for new productive purposes.' (1995:p. 35).

37. Dialectic and enquiry are two well-established strategies of design practice as well as design theory and research. Dialectic is the art of finding and interpreting systems in the relationships and interrelationships of our surroundings. In contrast, enquiry is the art of transforming surroundings into environments for human thought and action. The intersection of these two arts is the theme of this presentation. (...) The intersection of dialectic and enquiry is fertile ground for exploring new dimensions of design practice and theory in the complexity of contemporary life (Buchanan, 2017).

41. 'The idea is simple enough: every change in our conception of knowledge acquisition instruments must have huge effects on what we can expect from the State to envision and to foresee' (Latour, 2007).

to interaction.

In addition to the focus on interaction, many of the founding writers in design point towards the 'inherently rhetorical dimension of all design thinking' (Buchanan, 1995:p.24). Concepts such as human centred design, which I will examine shortly, mark a 'fundamental shift in design: the semantic turn toward meaning' (Krippendorff, 2006:p.47). Interaction as meaning creation establishes design practice and design thinking as an integrative practice aimed at creating instrumentalities of forethought to integrate meaning and practice in a systematic way.³⁶ Buchanan refers to this as the fourth order of design, whose focus is on the sphere of thought, which requires what he terms 'dialectic design' (Buchanan, 2017).³⁷ Practice at this level extends well beyond the realm of artefacts, concerned instead with making, in its broadest sense, a persuasive argument (Friess, 2010). An understanding of design as focused on interaction as meaning creation has significant parallels, with regard to the overall purpose, to public policy making and design.

'Design has become an art of deliberation essential for making in all phases of human activity. [...] It applies to making policies and institutions which may guide practical action, as in a constitution for a newly emerging state or in political, social and economic institutions repeat to new circumstances.' (Buchanan, 1995:p.46)

From a policy perspective, and for the purposes of my analysis, this is deeply significant. This positions design research beyond a problem solving and evaluative activity to one concerned with generating knowledge through making by examining the interaction between people, artefacts and the environments they inhabit. Design as making involves the capacity of integrative thinking and linking theory and practice, also at a rhetorical level, in the generation of meaning.

Despite these marked differences, as I have highlighted, in what constitutes design practice and research, Junginger (2013b) underlines that the state 'has always been in the business of designing; [p] rinciples and methods of design have shaped the public realm from

38. Writing from a systems design perspective, Banerjee (2014) suggests 'Governance systems, policies and regulations have the potential of having broad impact ... while containing great potential, is also coupled with inbuilt barriers that impede scaled transformations. The design of new policy, regulatory mechanisms and governance systems tends to be incremental, overly risk averse and slow.' (p.79).

its inception' (p.18). In what follows, I will examine how the emerging design for policy and design for services literature conceives of policies and will illustrate the difference in interpretations of the role of design in the context of policy making and public service innovation. I will consider how these recent contributions understand the interactive nature of policies and their instruments and support the development and future practice of policy instrument design.

3.2.3 Diagnosing policy problems

As I have discussed, the increasing complexity involved in state intervention is often attributed as a driving factor behind the need for policy innovation and is echoed in the emerging design debates focused on public services. Bason (2014) suggests this is due, in part, to the interdependent nature of ill-defined problems which, from a policy practitioner's viewpoint, directly concerns issues of problem diagnosis (2014:p.227). The challenge as to how to frame policy problems is well-documented in the field of policy studies, as I discussed in Section 3.1. Accuracy in problem definition alone is insufficient in diagnosing policy problems, due to its dependence on the ability of policy makers to transform social problems into political ones. Not only does problem diagnosis require the establishment of a firm evidence base, but it also requires a process for consensus building, agenda setting and negotiation for how these problems are legitimised (Knill & Tosun, 2011), are translated into policy goals and are operationalised into services.

Echoing Dewey's own observations about the obsolescence of state instrumentalities, processes of change from within government are typically slow, incremental and beset with inbuilt barriers that thwart both the best of intentions and the best laid plans.³⁸ The rise of new technologies, their effect on organisational models and the growing movement towards an opening up of government to allow for devolved decision making to create opportunities that challenge the delivery models which sit at the heart of our current policy making processes. These debates express an urgent need to explore new 'alternative "tools of government" which may hold more promise than the current

repertoire available to policymakers' (Bason, 2014:p.3) — although these alternatives, particularly from a design perspective, are, in my view, often poorly articulated.

Junginger (2014) rightly suggests, writing from a design perspective, that the ability to empathise and design for the human experience is a blind spot in both current policy literature and in current policy practice. Furthermore, the ability of design to conceive of possible futures (Krippendorff, 2006) rather than only identifying problematic situations and evaluating problematic situations, in principle, offers great promise in addressing the policy challenges outlined above.

User-centred design (UCD) approaches are widely recognised to contribute to policy making and addressing the issue of problem diagnosis, due to their ability to bring to the fore the human experience. UCD is both a methodology and a philosophy which underpins design practice and design's understanding of interaction. As a construct, UCD has come to increasingly define design.

UCD emerges in part as a response to the failure of the modernist movement to translate a focus on function into actual use (Papanek, 1971) and the view of design as a purely problem solving activity (Mattelmäki, Vaajakallio & Koskinen, 2013:p.67). UCD principles shift the emphasis away from the design object (Thackara, 1988) and its function to that of experience (Redström, 2006).

Despite its pervasive use, there is little consensus within design research around what the concept means and even less clarity regarding its application in design practice. As can be seen from the range of perspectives below, the term is poorly defined not only due to how it is applied interchangeably, and how it has evolved to mean different things:

'User centred systems design is a philosophy based on the needs and interests of the user, with an emphasis on making products usable and understandable' (Norman & Draper, 1986:p.13)

‘Problems of designs failing the tests of use have generated a set of ideas relating to the role of the user in design. First, that these problems can be avoided through the optimisation of fit between object and user; second, that design can, or even needs to be based on knowledge about users, their capacities, abilities and desires. These ideas, then, seem to have pushed definitions of design towards being increasingly in terms of the user.’ (Redström, 2006:p.128)

‘[User centred design] help[s] make new product and services better meet the needs of the “users”. They use research-led approaches with an expert mindset to collect, analyse and interpret data in order to develop specifications or principles to guide or inform the design development of products and services. They also apply their tools and methods in the evaluation of concepts and prototypes. (...)’ (Sanders & Stappers, 2012: pp.18–19)

‘Simply put, this design philosophy aims to improve usability by keeping the experiences of end users in mind at every stage in the design cycle. Without a doubt, user centred design is often successful in identifying and tracking those characteristics that make products more or less intuitive, efficient, and safer to use. User centred design has made significant contributions to the field of design research in particular, by developing techniques to manage and analyse findings systematically. (...) Despite these benefits, however, the phrase “user centred design” can be said to be vague at best and misleading at worst. The term “user” is in and of itself complex and poorly defined — not only is it difficult to define what characterises a “user” in design, but the term is also often loaded with pejorative connotations related to consumption and the manipulation of circumstances. Furthermore, the practice of user centred design can be somewhat misleading in that it indicates a degree of user agency that may or may not be present in actual practice.’ (Erlhoff & Marshall, 2008:p.426)

Early exponents associate user centredness with the usability of artefacts, although, as some have argued, the activities now associated

with the application of UCD methods are not unlike those which designers would have used to test their designs in the past (Erlhoff & Marshall, 2008). More recent interpretations tend to conflate UCD with the greater involvement of users in the design process itself, which implies it is more akin to a methodology of design activity. Concepts of human centred design, participatory design, co-design, ethnography and empathic design (Steen, 2012; Crilly 2011; Erlhoff & Marshall, 2008; Almquist & Lupton, 2010; Sanders & Stappers, 2012) break away from the more technical interpretations of usability and ergonomic design assessments to instead engage with users, through sensemaking, to explore how people make sense of and create their mental models of the world (Crilly, 2011; Sanders & Stappers, 2012). From an organisational perspective, studies have shown how a UCD standpoint requires organisations to design processes around users and effectively change to occur from the outside in (Junginger, 2008:p.33).

UCD perspectives are widely adopted in the emerging service design literature, despite the realisation that use, interactions and user experiences cannot be as easily programmed or designed as artefacts (Redström, 2006; Cipolla, 2006. 2013; Meroni & Sangiorgi, 2011; Manzini, 2011). These challenges are well-documented in design research (Redström, 2006; Lupton, 2004) and consequently highlight critical issues to the application of UCD in the context of policy making.

The first challenge involves the concern that UCD positions designers as experts (Sanders & Stappers, 2012), whereby users become viewed in an idealised and universal fashion, as people with impulses, needs and impairments which need to be scrutinised and controlled (Almquist & Lupton, 2010). As Krippendorff (2006) suggests:

‘...the user is a myth, or at best a statistical artefact. People who conform to all statistical attributes are rare and may not even exist in real life; the proverbial family with 2.3 children is an example. [...] [It] not only stereotypes a whole population of people, it also smacks of paternalism — as if users had no mind of their own and needed designers to understand what is good for them.’ (2006:p.63).

39. Drawing on second-order cybernetics, Krippendorff suggests HCD requires designers not only to appreciate how their understanding might be different from that of their stakeholders, but that by engaging with other subject areas, designers bring different kinds of understandings into the design practice (2006:pp. 65-66).

The construct runs the risk of reflecting an oversimplified user-producer nexus at the expense of other stakeholders who may become taken for granted (Krippendorff, 2006).

Participatory design perspectives (Eln, 2008) tend to address the oversimplification of the user by repositioning them as experts and make them integral to the articulation of the design problem, to guide the design process and in the development of design solutions (Steen, 2012). However, this raises a series of questions regarding the application of UCD as a methodology — as it is unclear to what extent the user determines the problem identification, the design process or the design solution (Erlhoff & Marshall, 2008). As a method, UCD fails to address if and how designers might cast aside their views and whether they should acknowledge the effects of their biases on the design process and the design outcomes which are subsequently produced (Steen, 2012:p.78). If design practice is to be serious about contributing to areas such as public policy, where these challenges are well rehearsed, developing considerations of this kind is critical.

In contrast, human centred design (HCD) addresses some of the shortcomings discussed above. Primarily, it avoids falling prey to a reductionist approach and the pitfalls of an over idealisation of the end user, as it aims to consider the full range of stakeholders in the design considerations (Krippendorff, 2006; Junginger, 2016). Most importantly, it acknowledges the position of the designer as one which cannot escape his or her situatedness and biases when seeking to understand the position of others in the world (Krippendorff, 2006):³⁹

‘It is important to notice the differences of a human centred design approach and a user centred design approach. A human centred design approach (...) begins with the experiences of individuals as they engage with a particular system. But while a user centred design approach remains focused on the interactions of one person with a specific product, service or system, a human centred design approach concerns itself with the implications on a wider social scale, situating the human experience in the context of communities and environments, concerning itself with issues of justice and human dignity.’

(Junginger, 2016:p.32)

Unlike policy evaluation and research methods, an HCD approach shifts the perspective of analysis through sensemaking by combining different ways of priming and sensitising those engaged in exploring problem diagnosis. It responds to this by creating paths for the creative expression of behaviours and motivations and the design of possible futures. Due to the fact that HCD and sensemaking examine and bring to light the behaviours, motivations and mental models of those who interact directly with policies, these methods provide richer and deeper qualitative insight when compared to traditional forms of quantitative research and external observation typically associated with social research (Sanders & Stappers, 2012:p.67). When allied with more expansive systems perspectives (Jones, 2013), which explore purposeful behaviour at organisational and systemic levels, these methods help reveal the wider casual types of interaction and the potential levers — physical, conceptual and relational — available within the context where design activity occurs.:

‘The behaviour of an ecosystem is defined by attributes such as the behaviour of the various stakeholders, their motivations and mental models, the nature of the relationships including the feedback loops, the resource flows, the extrinsic or contextual conditions and the paradigms within which the system operates. Looking at a system through a behavioural lens allows us to perceive the causal pathways that lead to patterns of system behaviour, and eventually the outcomes and trajectories of the system. Similarly looking at the stakeholder through a behavioural lens gives us a nuanced view of not just the forces that shape that behaviour, but also the motivations, cultural barriers, opportunities and leverage points that could change the behaviour.’ (Banerjee, 2014:p.80)

In a policy context, HCD is well placed to connect the implications of working with a user-centred focus at a granular scale of services to wider strategic, macro level considerations connected to public policy programmes and governance models (Junginger, 2016).

The emerging literature on design for policy and design for services

places great emphasis on the benefits of UCD and HCD, coupled with other qualitative research approaches, to public service innovation and policy design. The literature underlines how UCD and HCD generate new insights about the nature of policy problems, in particular, how they are experienced by citizens and the interdependent nature of how these problems become manifest (Bason, 2014; Mulgan, 2014a; Bunt & Christiansen, 2014; Siodmok, 2014). Evidence emerging from the application of UCD and HCD to a range of policy areas indicates that these perspectives, more importantly, help policy makers foresee any unintended consequences arising from existing policy and service configurations (Junginger, 2013b). It also helps mitigate the risks of new service deployment (Junginger, 2013b:p.19) by preventing the flaws and failures, although unintended, which result from unreflected design practice (Schön, 1983). Design practice from an HCD perspective, by creating empathy, can support the delivery of wider policy goals, such as fostering trust, social justice and greater social inclusion (Junginger, 2013b) and can also generate a social conversation (Manzini, 2013) which can build a shared consensus for new policy directions.

The increasing application of UCD and HCD to policy making is accompanied by a number of trends within the public sector. Though their origins lie in other areas such as the behavioural sciences, analyses which encompass the behavioural dimension of policy making are growing in prominence. This is evident from the successes of the UK's Behavioural Insights Team and its recent transformation out of the UK government into a private joint venture (Mulgan, 2014b). Furthermore, the worldwide proliferation of public policy and government labs across many layers of government (Mulgan, 2014b) demonstrate an appetite and a growing recognition amongst the policy making community of the need to rethink public service delivery. However, Mulgan (2014a) warns of the challenge of embedding design thinking and practice in the public sector. To him, the challenges are in part due to the radically different working practices and knowledge apparatuses which designers and policy makers use. As Mulgan (2014a) suggests, the push to disseminate design methods and tools

in policy making must be approached sensibly to ensure its promise is not overstated:

‘Policy makers have grudgingly accepted that they might have quite a bit to learn from the designers; but the designers appeared baffled when it was suggested that they might have something to learn from the policy makers, or from the many other organisations and fields with claims to insight into service design: social entrepreneurs, professions, consultancies, IT, policy makers, etc. (...) overblown claims that design methods are uniquely placed to tackle complex, holistic problems has not always helped to inspire a culture of collaboration and mutual learning.’ (Mulgan, 2014a:p.6)

Despite this growing appetite for design to be embedded into policy making, the evidence about how design methods, of which HCD is an integral part, can systematically influence and contribute to problem diagnosis, also at a strategic level, remains circumstantial (Bailey & Lloyd, 2016). The evidence suggests designers have been unable thus far to address challenges arising from the ethical and political implications of problematising in a policy making context (Bailey & Lloyd, 2016a, 2016b; Kimbell, 2016).

3.2.4 Decision making as experimentation

‘In traditional public governance, decisions tend to be related to the development of a specific policy, regulation, law or guide for action. Sometimes the goal can be the decision itself being made through political mandate or professional expertise. This rather static way of dealing with problems conceals a not so hidden premise which points to the solution as an “endpoint” of development, improvement or innovation through the right application of effort, knowledge and strategy. Public solutions are often understood to be problems strictly defined by public institutions. Thus, efforts to “solve” them are based on project and programs developed according to criteria that are applicable with current systems and procedures. In this way, “silver bullet” solutions become possible because social reality gets squeezed into projects where an intended plan in its theoretical shape can

be put into effect through concentrated efforts within a stable system.' (Bunt & Christiansen, 2014:p.44)

Design's recent contribution has also been associated with attempts to address concerns with top-down models of decision making. This is widely recognised as an issue, but it is not one that is exclusive to the design space (Cottam & Leadbeater, 2004; Meroni & Sangiorgi, 2011), as the long history of participatory policy and participatory development demonstrates (Chambers, 1997; Sen, 2001; Chant, 1997).

When considering the role of design, Bunt and Christiansen (2014) suggest that top-down approaches reflect a deeper problematic concerning the nature of decision making apparatuses and the outcomes they set out to achieve — and, I would argue, the instruments designed to achieve them. These top-down approaches are symptomatic of a 'silver bullet' syndrome, where emphasis is placed on defining a clear end goal alongside a one-size-fits-all approach to decision making. Initial attempts by design practitioners and others in public service innovation place emphasis on co-creation, co-design and co-production practices to address these challenges. Co-creation is understood to foster more participative forms of decision making and, consequently, participative forms of public service delivery (Cottam & Leadbeater, 2004; Mulgan, 2014a, 2014b; Manzini, 2013; Harris & Albury, 2009).

Defined from a design perspective, Sanders and Stappers (2012) broadly describe co-creation as 'any act of collective creativity, [...] shared by two or more people' (p.25). It can be conducted in several ways in order to achieve different purposes. At its most basic level, it is a tool used in the design process which can also be applied as an overall methodology for enquiry or adopted as a mindset as part of generative creative processes (Sanders & Stappers, 2012:p.30).

Following from Herbert Simon's view that the activity of design is innate to us all, Manzini (2014) goes a step further as he attempts to distinguish between the general activity of co-creation and design's

unique approach to it. According to Manzini (2014), as a general activity, co-design results from the cooperation between different actors in areas where design methods might be applied but where the role of an expert designer is less prominent. Beyond that, as a process for developing what he terms new collaborative services, co-designing involves the cooperative working between a range of stakeholders over extended periods of time, where the solutions developed promote varying degrees of collaborative involvement in how they come to be delivered. It is Manzini's view that these require both design capabilities to facilitate cooperation (p.43) and the expertise in design practice as making (p.47) to bring new design solutions to life. Finally, he describes co-creation as a pure design initiative of an explorative and experimental nature, which has the aim to also engender a social conversation as it brings to life socially innovative services and forms of organisation. This practice is specific to design and combines the role of the designer as a maker, mediator and facilitator (p.49).

Junginger (2013b), however, warns against unintentionally equating design as an activity with co-creation as a method for engaging with people. Similarly, as Staszowski, Brown and Winter (2014) suggest, designers should avoid conflating the participative element of co-creation with more democratic practices per se:

'Designing for social [or public service] innovation cannot be merely an exercise of consultation or placing the user at the centre of the design process. Designing in this context is mostly about creating meaningful mechanisms of public participation. As a result, designers must acknowledge the complex political environment in which their work is situated.' (2014:p.163).

As Knill and Tosun (2012) highlight, participation does not automatically coincide with equality of representation (p.218) or create a level playing field or equal voice for those taking part. It is important, in order to avoid this, that the application of co-creation in a policy context should not assume equality of representation, usually associated with wider democratic processes, and therefore should be aware of possible limitations to its use.

40. I suggest this fragmentation is further exacerbated by the decentralisation of governance arrangements, where it is not accompanied by the devolution of decision making powers.

Despite these limitations, co-creation has the potential to bring to life future services models that drive innovation into public service delivery of a more collaborative kind (Cottam & Leadbeater, 2004; Parker & Heapy, 2006; Mulgan & Tucker, 2007). From an organisational perspective, co-creation supports change across both horizontal and vertical organisational aspects (Banerjee, 2014:p.76), ensuring that top-down strategies are matched with operational and contextual realities. In the application of co-creation alongside design thinking, it is also strongly associated with collaborative innovation processes that foster more open-ended and cross-disciplinary approaches to tackling complex public problems (Ansell & Torfing, 2016):

‘Collaborative solutions aim to break up the paternalistic and top-down approach to public services, transforming the conception of people as passive receivers of services to one of the active participants and collaborators.’ (Meroni & Sangiorgi, 2011:p.120)

‘Co-designing has emerged as a powerful argument to justify and to place design in the public sector. Co-designing follows human centred design principles and is a method in its own right. Because it involves people not merely as subjects in a project but partners, it can aid in fostering a sense of social inclusion and result in appropriate user centred services.’ (Junginger, 2013b:p.22)

Much like problem diagnosis, co-creation is most often deployed at the implementation stages of policy making. The impact these practices might have if they are adopted widely in current democratic models remains to be seen.

In an attempt to address this, Junginger (2013a, 2014), in particular, devotes considerable attention to examining the policy cycle from a design perspective. Junginger (2014) suggests that within the policy cycle, decision making becomes a reactive practice and an activity dependent on the precedence of past problem definition and the existence of past strategies used for policy implementation. According to her, this is highly problematic.⁴⁰

This shortcoming of the decision making process is further complicated by the incongruence which exists between policy decision making processes and the process by which policy implementation strategies, primarily services, are designed. According to Junginger, due to the services being designed after policy decisions are made, services might not as easily translate original policy goals. The implementation of policies as services inevitably brings to light problems which can compromise delivery, which are less evident at the decision making stage. I would also argue that this disconnect might miss opportunities for future policy development, which might become evident during policy implementation. For Junginger (2014), design addresses these shortcomings, as it combines as part of the decision making process the problem definition stage with considerations of implementation through the design of services.

Junginger's argument goes deeper, in that it is critical of the overriding problem solving paradigm which frames the policy making process, for which in her opinion, design is partly to blame:

'...it is only after a problem has appeared on policymakers' radar screen that the policy cycle can begin. Once a problem has been recognised as such, the first task according to the policy cycle is to identify if "this" problem warrants the need for a new policy. Once this task is completed and the policy has been formulated and put into words, policymakers, in this model, are done with their job. They have designed a policy that now awaits implementation. The responsibilities for any further action shifts from policymakers to policy-implementers whose task it is to develop the kinds of products and services through which the intent of the policy can be fulfilled and translated into reality. This handling of tasks and responsibilities is indicative of a fragmented design approach that has come under increased scrutiny.' (Junginger, 2014:p.59)

This assertion reflects a wider debate within the design discipline between problem solving and sensemaking approaches in design research (Schön 1983), which give prominence to experimentation and self-reflective enquiry and which I cover in Chapter 4. However,

as Manzini (2015) points out, ‘in the face of complex issues and different possibilities for solving them, problem solving and sense making cannot be separated’ (p.43). This indicates the act of making policies and the nexus of decision making should not be approached in isolation but instead should be treated as an integral part of design enquiry:

‘The moment we link policy implementation and policy making with the products and service that people actually experience, the human experience moves into the foreground. Human experiences can guide our questions and inquiries into ill-defined and problematic situations that we encounter in policy design. (...) policy making as designing begins with an enquiry, not with a problem. The aim is to arrive at policies that are meaningful, useful and usable to people and society.’ (Junginger, 2014:p.62)

‘If we were to approach the development of a policy as a design challenge rather than a problem solving task, we would have a chance to transform an ill-defined or indeterminate situation and all its constituent elements into a unified whole. We would be able to apply design not only to problem solving tasks but also to generate and envision new and desirable futures and policies. (...) This would aid policymakers in envisioning desirable futures and enable them to develop strategies to realise these visions — product for product, service for service.’ (Junginger, 2014:p.64)

Finally, Junginger establishes a distinction between policy making as a problem solving activity as opposed to it being approached as a design challenge. She is less explicit in addressing how a problem solving challenge differs from a design one. It is my view, as I have shown earlier, that a problem solving approach is premised on highly specialised knowledge used to define target populations and to accurately quantify policy problems and the impact of their solutions. The effect of a problem solving approach to policy making drives an expectation that policy making should produce ‘single bullet’ solutions. This, in turn, furthers the need to design policies by optimising and calibrating from an existing repertoire of solutions. In contrast, to approach policy development as a design challenge requires manifesting opportunities for intervention as a way to engage with

41. 'The idea is simple enough: every change in our conception of knowledge acquisition instruments must have huge effects on what we can expect from the State to envision and to foresee' (Latour, 2007).

policy problems and define policies by placing the human experience and sensemaking at the forefront of policy design.

The debate also highlights another significant issue for assessing the contribution of design in policy decision making, that of policy relevant and legitimate knowledge and the question of public accountability. Staszowski, Brown and Winter (2014) provide one of the few examples of design enquiry into public service innovation in the context of housing. They highlight the challenges of public accountability involved in disseminating co-design practices and how these must be recognised by the design community. The challenges involved not only affect public trust in decision making processes but also are affected by what counts as legitimate knowledge, how legitimate action comes to be defined, and they inform the feasibility of any design decisions.

Christiansen (2014) goes further in his examination of the knowledge practices and cognitive apparatuses that inform political decision making and policy processes in the context of public innovation. Following Latour's (2007) political epistemology of state interventions, cognitive apparatuses form the basis of the state's authority to intervene in people's everyday lives:⁴¹

'Knowledge practices are not just "engaged in by state actors of all kinds — of making distinctions, compartmentalising, cutting off, and setting limits" (Riles, 2011: p.65). They are also, more importantly in this context, determining the particular kind of "cognitive equipment" (Latour, 2007) and creative processes that are allowed to determine the causal relationship between knowledge and action in practice. [D]ominant knowledge practices not only influence how practices of public policy and project management are planned and carried out, but also shape the basic perceptions of public authority and systems of justification that determine how the state formalises, authorises and legitimises its interventions.' (Christiansen, 2014:p.21)

In his PhD thesis, Christiansen is writing from an anthropological perspective, and although it is too lengthy for the purposes of this analysis, his argument is significant for two reasons. First, in examining

a key barrier to innovation in public services and consequently policy decision making — that of legitimacy — it opens opportunities for analysis of areas where designing legitimacy in the policy design process can be tackled head on. Second, it acknowledges the importance of perceptions in establishing public legitimacy as a relational process, which is just as relevant to policy making as the technical and the functional dimensions of policy design. I will return to this later in Section 3.2.7, when I discuss the contribution of design, also as a rhetorical practice, to the creation of a social conversation within the contexts it intervenes in.

Considerations about the role played by policy instruments in policy design are less evident in the design literature, apart from when it becomes loosely connected to services as the means by which policies come to be implemented, as I will explore in the next section.

3.2.5 Services as instruments of policy implementation

Emerging debates surrounding services are strongly linked to new ways of thinking about innovation and new forms of value creation, technology and organisational change (Sangiorgi 2011, 2013; Howells, 2007; Maglio & Spohrer 2008a, 2008b). Services are broadly defined as:

‘[C]omplex, hybrid artefact[s]. They are made up of things — places and systems of communication and interaction — but also of human beings and their organisations. Permeated with human activity [...], they can never be reduced to the simplicity of mechanical entities. Like all complex entities they are largely undesignable.’(Manzini, 2011:pp.1–3).

By their very nature, services are open-ended, heterogeneous and based on relational exchanges, which are reliant on human interaction rather than embodying purely technical processes (Cipolla, 2009; Meroni & Sangiorgi, 2011). Initially considered by other disciplines as being peripheral to products, the centrality of a service-driven economy is now widely recognised beyond the design discipline (Sangiorgi, 2013).

In the context of public policy making, ‘services remain first and foremost instruments for policy implementation’ (Junginger, 2013b:p.19). Not only are services the primary instruments for policy making but, as Junginger suggests in Figure 3.8, they act as the ‘organising principle of public policies’ (Junginger, 2016). Services connect policy making and problem diagnosis around human experiences and guide changes, at an organisational level, to support new forms of service and policy delivery. This perspective creates a direct link between services, policy making and policy instruments as defined in the policy design and studies literature. It makes essential an examination of how services are understood from a design perspective and where, in this respect, an analysis of policy instruments, from a service design perspective, might fit.

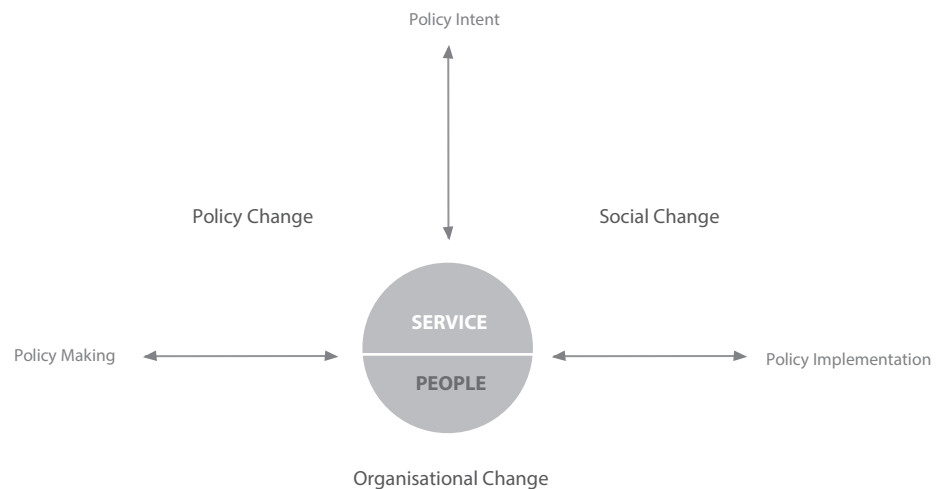


Figure 3.8
Role of services in policy making (Junginger, 2016).

A defining feature of services, as opposed to products, is the centrality of the user in their production — the co-creation of service experiences (Edvardsson, 1997) and the co-creation of value at the point of service exchanges. This occurs despite the fact that the users do not directly control the means of production (Pinhanez, 2009), whether or not services are designed with them in mind. Despite echoing the design concepts discussed in the previous sections, this shift had profound implications for design practice (Sangiorgi, 2013), given that the co-creation of value takes centre stage in defining service design practice.

42. Kimbell (2011) defines 'designing for service as one specific way of approaching service design, combining an exploratory, constructivist approach to design, proposing and creating new kinds of value relation within a socio-material configuration involving diverse actors including people, technologies and artefacts.' (Available from: <http://www.ijdesign.org/index.php/IJDesign/article/view/938/345>).

43. The service sciences combine marketing, management, engineering, computing and behavioural science disciplines to a focus on services.

44. The service sciences also consider the separation between production and consumption activities, evident in the manufacturing processes, to no longer apply in a service context.

This is reflected in the emerging literature of service design and design for services as it seeks to create 'new kinds of value relation within a socio-material configuration involving diverse actors including people, technologies and artefacts' (Kimbell, 2011).⁴² The service design literature is deeply influenced by the service sciences (Spohrer & Maglio, 2007; Maglio & Spohrer 2008a, 2008b; Pinhanez, 2009; Vargo & Lusch, 2008)⁴³ and its view that services express the real-time interaction between service providers and users (Gallouj & Weinstein, 1997).⁴⁴ For the service sciences, the interconnected and systemic nature of services is one of constant value co-creation (Ramirez, 1999; Weiland et al., 2012). Services come to represent a higher 'conceptual framework within which to think in a different way of value creation' (Ramirez, 1999:p.54). Martinez and Turner (2011) go further, describing this as 'value in use', where value shifts from the exchange of products to value derived from the users' interactions with a service. Service interactions are dynamic, fluid and collaborative and rely on the application of skills, knowledge and capabilities, which are often seen as intangible activities (Weiland et al., 2012). The unit of analysis becomes the point of interaction through which value is created.

Interaction not only creates new resources but also generates new opportunities for further value co-creation at each of these instances:

'[...]many social and economic actors create value for themselves and others through reciprocal resource integration and service provision.' (Martinez & Turner, 2011:p.12)

'[S]ervice exchanges enables actors not only to access resources for their own benefits but, through integration, to create new and exchangeable resources in the process.' (Weiland et al., 2012:p.14)

'In this sense the focus is not [only] on what the firm produces as an output but how it can better service its customers (Lusch, Vargo & O'Brien, 2007) and support their own value-generating processes (Gronroos 2008).' (Sangiorgi, 2013:p.97)

The notion of value co-creation is not only pertinent to the individual exchanges between service providers and users. In the innovation

45. These considerations are well-documented in the materialist debates, in Karl Marx's seminal work on the capitalist economic system, which distinguishes the exchange value of commodities as opposed to their price or use value (Harvey, 2013). Although too lengthy for the purposes of this thesis, an awareness of the disparity of resources and capabilities at the point of interaction is relevant for design practice in this context.

and marketing literature, value co-creation also extends to a systemic and organisational level, where value comes into existence when it is offered as part of a wider 'value proposition' within a service system which 'connect[s] internal and external service systems and shared information' (Maglio & Spohrer, 2008:p.18). Here, 'value in use' becomes extended to 'value in context'.

'Value in context' and the interactive dimension of services has parallels in the debates concerning public value discussed in Section 3.1.4. Given the relational nature of policy instruments, 'value in use' and 'value in context' add a significant dimension to policy instrument choice considerations. In a policy context, however, these need to be approached with some caution. Service design and service science debates tend to overemphasise the emancipatory potential of value co-creation (Sangiorgi, 2013; Manzini, 2013; Sander & Stappers, 2012). Less attention, however, is paid to how services might replicate — albeit through different structures — imbalances of resources and capabilities available within the interactions where value is co-created.⁴⁵ These considerations are important, especially within a policy making perspective, as the business of government is driven by wider imperatives of equity, social justice, fairness and trust, which policy interactions seek to engender.

Despite this, the concept of value co-creation establishes a clear a link between value, beyond individual interactions, and the inclusion of wider systems of interactions. From the perspective of policy instrument design, value co-creation has the potential to shift practice away from instruments as enforcement mechanisms towards mechanisms that can foster more enabling interactions, an area which remains underexplored in the policy literature.

In addition to services being the organising principles of policy making, policy content and the organisational systems by which services come into being are informed and fundamentally defined by the policy instruments. How might insights from service design systematically inform policy instrument design? In order to answer this, I will now

turn attention to a number of concepts, both developed by and co-opted by practitioners, to support service design practice.

The first relates to the materiality of services. Writers from a marketing perspective (Shostack, 1977; Ramaswamy, 1996) have warned about the challenges which emerge from what they view as the inherent intangibility of services. Service design's response (Panceti, 2008; Secomandi, Hultink & Snelders, 2009; Sangiorgi & Meroni 2011) borrows from interaction design and applies the concept of the interface to bring tangibility and materiality to services. As a design construct, the interface is a useful entry point with which to explore the physical manifestation of services through touchpoints where service interactions occur (Panceti, 1998). This has led some (Secomandi & Snelders, 2011) to argue that the object of service design is the interface, as it assigns roles and defines the scope of human agency and interaction through different service encounters and touchpoints designed through it:

'The interface actualises the co-production of a service, as it conveys the infrastructure and brings to fruition an exchange relation between providers and clients.' (Secomandi, 2012:p.29).

'... the service interface materialises an exchange relation between providers and clients, and that the design of the service interface, perhaps more than anything else, is the design of the service itself.' (Secomandi, 2012:p.33)

The interface also points to the line of visibility which separates what users are sensorially able to experience from the background infrastructure needed to support these experiences (Shostack, 1977; Gallouj & Weinstein, 1997; Secomandi, 2012). It is at the interface where the user and all the resources involved in the delivery of services intersect. Although the design of interfaces and service touchpoints are the starting point of design activity, in a policy context, they should not be designed in and for themselves. More importantly, service interfaces manifest complex service systems delivered across multiple channels (Holmid, 2011), accessed over space and time. These require service interfaces and touchpoints to ensure continuity and

coherence, not only in the experience of the user but also in the role of service providers and in the overall service outcomes.

In addition, a number of methods — co-opted by service design practitioners from other areas of design practice and beyond — are used to support service design processes in moving from research to ideation and the prototyping of design concepts. This includes examples such as service blueprinting, used to define and design the complex service systems and identify what lies on either side of the lines of interaction and visibility. Another key method involves service prototyping, which allows service designers and practitioners to tease out organisational and capability requirements to ‘design out’ risk in new services (Ramaswamy, 1996; Coughlan, Suri & Canales, 2007; Junginger, 2008; Design Council, 2013). Borrowed from software and computer engineering, the benefits of working in ‘alpha’ and ‘beta’ versions of services at a service implementation level are evidenced in how this fosters ongoing learning and experimentation (Bunt & Christiansen, 2014:p.49) and helps to address the silver bullet tendencies of policy design I discussed above.

The complexity and heterogeneity of service interactions makes ‘synchronising the perspectives goals and existing practices of service participants’ (Meroni & Sangiorgi, 2011:p.22). Tools such as GIGA-mapping (Sevaldson, 2008, 2011, 2013), mapping product service ecologies (Forlizzi, 2013) or mapping of value networks, as found in the service sciences, provide a good basis to visualise points of interaction and design with the complexity of multilevelled interaction. These tools serve not only to visualise interactions, but they also play an active role in supporting the co-creative and ideation processes.

In spite of these, the design for services literature rightly points out how service exchanges — and people — cannot be programmed, standardised and replicated. Unlike products, standardising interaction can compromise it, sacrificing its distinctiveness and authenticity (Cipolla, 2006). Despite wide recognition that optimising user experiences and generating efficiencies are only part of the answer

to delivering better public services and policy outcomes, the fluidity of service interactions as exchanges presents a challenge for public service delivery. This is evident in concerns around the scale and diffusion of innovation evidence in these debates (Harris & Albury, 2009).

In response to this, Morelli (2002) describes design activity in this context as also being about social construction — of bringing about convergence between several social and technological factors and, I would argue, wider cultural, political and structural factors. According to Morelli, understanding these factors helps ‘to determine the paradigmatic context in which new technologies, products and services can be accepted or refused’ (Morelli, 2002:p.6). Echoing Buchanan’s rhetorical dimension of design research, the designer’s role encompasses that of a facilitator. Service design practice involves exploring how to diffuse, replicate and also, importantly, how to conceptualise the interactions that connect individuals in a collective pattern, through more approachable and accessible systems (Manzini, 2011; Jégou & Manzini, 2008).

Despite the view of services, as they have come to be seen increasingly as organising principles of policy making, I instead argued that services in a policy context are defined by policy instruments, given that they determine the nature and content of interactions available to policy delivery and service implementation. This effectively renders instruments as meta-interfaces of policy making and in the design for public services.

The new service models which begin to emerge have the potential to have a profound impact on the experiences and the nature of interactions between citizens and the state and the scope of public value creation. They see design practice also engaging with the implications of the emerging forms of organisation which come to life as a result of innovative service propositions, which I will discuss next.

46. 'A fundamental challenge for designers and the design community is to move from designing 'things' (objects) to designing Things (socio-material assemblies). We also argue that this movement involves not only the challenges of engaging stakeholders as designers in the design process, as in 'traditional' Participatory Design (i.e., envisioning "use before actual use," for example, through prototyping), but also the challenges of designing beyond the specific project and toward future stakeholders as designers (i.e., supporting ways to 'design after design' in a specific project). We see this movement as one from 'projecting' to one of 'infrastructuring' design activities.' (Björgvinsson, Ehn & Hillgren, 2012:p.102).

3.2.6 Services and emerging organisational principles

Public service innovation efforts of design for policy highlight wider governance implications which arise from service reconfiguration and the reformulation of existing value networks and business models (Cottam & Leadbeater, 2004; Maschi & Winhall, 2014; Parker & Heapy, 2006; Parker & Parker, 2007; Manzini, 2008, 2011, 2013, 2015; Cipolla, Melo & Manzini, 2013; Junginger, 2014, 2016). These perspectives emerge from another strand of literature, that of design for social innovation, which finds its roots in participative design. The concept of social innovation extends the co-created nature of services, not only to provide new opportunities for value creation but most importantly, new and more sustainable patterns of human interaction and collaborative, distributed forms of social organisation (Thackara, 2006; Manzini, 2011, 2015):

'[P]eople's behaviour cannot be designed. However, it is possible to create conditions that make some ways of being and doing things more probable than others. (...) Design for social innovation replies to these questions by intervening on the enabling ecosystem in various ways, at various moments and different levels. The common aim of these interventions is to create a new infrastructure: a complex, structured platform capable of sustaining many autonomous but interconnected activities.' (Manzini, 2015:p.151)

From an organisational perspective, the role of design is to identify and connect existing disparate and distributed resources in different ways, to find better working models for collaboration (Holmid, 2011). The aim of design is to create enabling ecosystems (Manzini, 2014, 2015), or what Björgvinsson, Ehn and Hillgren suggest as a move away from projecting towards 'infrastructuring things' (2010, 2012).⁴⁶ This involves providing new sociotechnical infrastructure to support new types of interactions between those involved in these emerging organisational forms (Manzini, 2015:p.169).

These debates reflect a belief that 'the most radical innovators in public services are likely to be developed outside of existing services, rather than within them' (Harris & Albury, 2009:p.23). Collaborative

47. His analysis borrows the economist Amartya Sen's and the philosopher Martha Nussbaum's work on the capability approach (1993) and the sociologist Richard Sennet's work on the nature of cooperation in our societies (2013).

48. This second element takes from the work of Granovetter (1973) around social ties' strength and the philosopher Martin Buber on the nature of encounter between human beings, as cited in Manzini (2015).

organisations break with old economic and organisational paradigms. In doing so, they create new forms of value from these organisational models and, more importantly, they foster new collaborative behaviours and forms of social interaction to produce social impact. Manzini closely equates these new collaborative forms of social interaction with 'a new kind of social services that, involving active and collaborative citizens, generate values for them and (...), for the whole of society' (2015:p.103). To those involved with them, collaborative organisations are attractive not only as they fulfil a need or are desirable as consumables, but rather, due to the manner in which these align to their values and the 'broader visions on the life participants want to live' (Manzini, 2015:p.109).

Technology and digital based social networks (Manzini, 2015; Morelli, 2014) provide a critical foundation for the formation and establishment of these diffuse and collaborative organisational networks. In the context of public services, particularly in areas of health and welfare delivery, the idea of networked and collaborative forms of care (Winhall et al., 2006; Maschi & Winhall, 2014) have gained significant traction.

Manzini (2015) suggests that although social innovation and collaborative organisations can take many forms, there are some generic characteristics regarding the nature of collaborative interaction found in these organisations (p.94). These characteristics are based on both the operational nature of these interactions — active and collaborative involvement⁴⁷ — and the social tie strength and relational intensity which these encounters are based on.⁴⁸ By defining these dimensions, Manzini 'provides not only the language for talking about these encounters but also a criteria for designing them (or more precisely, for designing the conditions that make them more possible)' (p.105).

The debates on collaborative organisation have strong parallels to the principles of NG, where new public service delivery models emerging from distributed networks, and new forms of interaction between

49. Despite the attractiveness of NG as public administrative principle, this enthusiasm, from a policy making perspective has not been reflected in the design of new instruments which can support a more interactive nature of policy delivery (Howlett, 2011; Olson, 1969; Rhodes, 1996; Salamon, 2001; O'Toole & Meier, 2010).

50. This can be seen from the way in which Christiansen and Bunt's suggestion - that under these new arrangements, formal contractual relationships are replaced by more organic and informal social systems that make use of the resources of society in a much smarter and more efficient way (2014:p.47) - is not corroborated in the debates in public administration concerning the application of NG in practice.

actors and stakeholders from outside of the state can come together to deliver policy outcomes (Cottam & Leadbeater, 2004; Harris & Albury, 2009). The implications of these models at a policy instrument level require the state to rebalance its authority, given the reliance of these models on those from outside the state to advance collective interests and policy outcomes (Bourgon, 2011:p.16).⁴⁹ The design debates, however, engage with this shift towards more decentralised approaches uncritically with regard to the impact on policy making and instrumentation.⁵⁰

3.2.7 Summary

In this section, I have examined design's contribution to policy making and policy instrument design, focusing in particular on two distinct elements regarding its contribution. These involve design's ability to generate new policy alternatives and directions and in doing so, to demonstrate how it responds to the interactive nature of policies to bring these to life. The emerging literature in service design, design for services and design for policy making confirms the contribution of design practice to policy innovation, in areas of policy diagnosis, of decision making and of service and organisational reconfiguration. Despite the emerging plethora of examples, the design contribution to policy making has, in the main, been located towards the micro level of policy making, concerning decisions and diagnosing issues at the implementation level.

UCD and HCD can be deployed both as evaluative tools, to examine the consequences of current interaction, and as a method to project preferred contexts and forms of future interaction. Despite UCD's and HCD's promise of reorienting the identification and the diagnosis of policy problems towards the human experience, an overemphasis on the end user is not only too reductive but also runs the risk of missing wider systemic and structural elements which shape policy making and define the nature and constraints on these forms of interaction — a challenge which an HCD approach in part addresses. Despite design's ability to inform both policy making discussions and evidence based analyses, its adoption is still considered a 'nice to have' and is often

located where problem diagnosis has already largely taken place. It remains to be seen whether design can systematically inform policy problem diagnosis at a strategic level.

The contribution of design to decision making has often been equated to co-creation practices. In the main, these are deployed to support the design of policy implementation strategies. Once again, co-creation potentially provides a more collaborative and experimental mechanism to guide design practice within a decision making context. However, co-creation should also be approached with caution, so it does not get wrongly equated with democratic processes of representation. Although not addressed explicitly in the literature, it follows that co-creation understands interaction to be an integral part of the process of consensus building, either as a one-off exercise or as an extended process of collaborative working. The literature also draws significant parallels between policy decision making and the act of design. It suggests that a problem solving approach to policy making creates an unhelpful distinction between the policy making and the implementation, making it a disjointed activity. Instead, it makes a case for the contribution of design practice, in the context of policy making, not just as a problem solving activity but one which concerns itself with design enquiry into possible futures, starting from an understanding of the policy experience from a lived human centred perspective.

Within current design debates, policies have come to be defined as services and services as the principle instrument for policy delivery, where the co-creation of value occurs through service interfaces, relationally shaping people's experiences of public policy services and systems. I argue instead that policy instruments define and inform the content and the organisational models by which services come into being. Instruments sit behind the services designed to deliver policy intent, as they delimit the experience, the tangible and intangible assets and the scope of the value creation opportunities found in public services and which are extended over a series of interfaces. As such, instruments act as meta-interfaces for policy delivery and

implementation, helping to extend the potential of design to play a more strategic role in policy making and design.

Value co-creation provides a key construct to understand the nature of interactions. The dimensions of value, although providing a clear link to debates on public value and the relational nature of policy instruments, should not inadvertently dismiss or recreate imbalances of resources and capabilities in future service interactions. Despite this, 'value in use' and 'value in context' open the gamut of interactions to include wider systems of interaction and to explore the impact of these on existing organisational and economic paradigms. Regarding the content of interactions and their manifestation, the concept of service interfaces helps bring materiality to the analysis. However, design practice and research solely focused on interfaces runs the danger of being too reductive in examining and responding to interaction. As discussed, this is particularly the case in a public service context, given the relational nature of policies and their instruments and how interaction extends over long periods of time, across space and across multiple channels. The new service models which begin to emerge have the potential to have a profound impact on the experiences, the nature of interactions between citizens and the state and the scope of public value creation.

I explored how emerging services characterised by new forms and patterns of interaction potentially give rise to new collaborative organisations and models of governance. At this level, the focus of the analysis shifts towards a consideration of networks of collaborative interaction. These in turn can be designed to encourage alternative forms of behaviour potentially emerging from new forms of collective association and collaborative action. To facilitate design practice and enhance understanding about the nature of interaction in these emerging networks, the design for social innovation literature examines the operational nature of interactions and the social tie strength and relational intensity on which these encounters are based. From a policy perspective, emerging design debates tend to overlook some of the challenges involved in operationalising networks

of collaborative organisations, which require alternative approaches to policy making, to the authorising environments needed to bring them to life and, I would argue, to the instruments needed to turn new service models into reality.

More importantly, this section also set out to explore how design might help us better understand and respond to design which takes into account the interactive nature of policies. It is in its understanding and engagement with interaction where the design literature examined thus far, concerning service design, design for services, design for policy and social innovation, is found to be wanting.

In the design concepts and approaches analysed above, interaction is either a given or an outcome of services and policy intervention. As such, interaction as a concept which can support the design process and, in this case, the design of future policy instruments, is poorly understood. It is therefore important to explore how to understand interaction from a design perspective and how this might respond to the calling of policy instrument design. I will now turn to the subject of affordance, both in its role as a theory and in its function as a design construct, to address this gap in the literature.

3.3 Affordance in Policy Instrument Design

The theory of affordance, a construct central to interaction design and which accompanied the advent of UCD, remains an underexplored area within service design, design for services and design for policy debates. As I will discuss in the last section of the literature review, affordance provides a valuable contribution to address the interactive nature of policy instruments. With its origins in the field of ecological psychology, affordance also provides a framework for approaching the interactive relationship between affordances in an environment and an observer. Both as a construct and as a framework for design, affordance offers a significant viewpoint to explore the interactive nature of policies and their instruments across the different levels of policy making, avoiding the pitfalls of other structuralist, behavioural

and econometric interpretations. In the analysis that follows, I will illustrate how the theory of affordance, drawing on design research's own contributions to the understanding of affordance, can address the shortcomings of policy instrument design and challenges to design practice highlighted thus far.

3.3.1 The theory of affordance

I start by drawing on Gibson's (1979) work, *The Ecological Approach to Visual Perception*, from which the theory of affordance originates. Writing from the context of ecological psychology, Gibson's theory of affordance argues against mechanistic conceptions in psychology and visual perception. He defines affordances as a set of action possibilities which can be perceived, which can be interacted with and which can also shape behaviour. As such, affordances do not change according to the needs of the perceiver but are properties innate to the environment, ready to be interacted with. Affordances are what environments — or for that matter, artefacts — offer, provide and furnish, for good or ill, to the observer, implying a complementarity between the observer and the environment (Gibson, 1979):

'An important fact about the affordances of the environment is that they are in a sense objective, real and physical, unlike values and meanings, which are often supposed to be subjective, phenomenal, and mental. But, actually, an affordance is neither an adjective property nor a subjective property; or it is both if you like. An affordance cuts across the dichotomy of subjective-objective and helps us to understand its inadequacy. It is equally a fact of the environment and a fact of behaviour. It is both physical and psychical, yet neither. An affordance points both ways, to the environment and to the observer.' (Gibson, 2015:p.121)

'The theory of affordances is a radical departure from existing theories of value and meaning. It begins with a new definition of what value and meaning are. The perceiving of an affordance is not a process of perceiving a value-free physical object to which meaning is somehow added in a way that no one has been able to agree upon; it is a process of perceiving a value-rich ecological object. Any substance, any surface, any layout has some affordance for benefit or injury to someone. (...) The

51. The concept of affordance bears some similarity to earlier concepts proposed in Gestalt psychology. In particular, Gibson acknowledged that his work was influenced by Koffka's notion of 'demand character' and Lewin's notion of 'invitation character' or 'valence' (Gibson, 2015). At the same time, Gibson insisted that there was a substantial difference between these concepts and affordance.

central question for the theory of affordances is not whether they exist and are real but whether information is available (...) for perceiving them.' (Gibson, 2015:p.131–132)

According to Gibson, affordances exist in the environment as properties which can be both measured and quantified, but they also exist as properties that are perceived relationally by those interacting with the environment. An affordance points simultaneously to the environment and to the observer, and so does the information to specify an affordance, which determines the utility of the environment and information about the observer himself. For one 'to perceive the world is to co-perceive oneself' (2015:p.133), suggesting a self-reflective circularity in understanding of oneself and the environment.

Affordance addresses the subject-object duality,⁵¹ offering an ecological account of agency (Withagen et al., 2012). It does so by making behaviours possible as it provides meaningful information about the environment, which may or may not be perceived and interacted with. Although Gibson subsumes the dimension of an object's value within the affordance construct (Flach, Stappers & Voorhorstet, 2017), the construct itself defines the meaning of an object both in terms of what people could do with it and why they might (or might not) want to use it.

This provides a significant contribution to my analysis, as Figure 3.9 suggests, in that it offers a dynamic focus for examining interaction, which takes into account both the properties of action possibilities and of the available perceived information.

Writing from a psychological perspective, Reed (1982, 1985, 1993, 1996) expands on Gibson's original concept by adding the dimension of value and intention to the theory of affordance. Reed suggests that through interaction, we seek not only meaning, derived from information, but also value from the affordances in our environment (Figure 3.9): 'Intention (...) emerge(s) out of competition among perceptual and action processes for utilising affordances' (Reed, 1993:p.65). Intentions, as goal-oriented purposeful behaviour, result

from processes of variation and selection in the search for value and meaning.

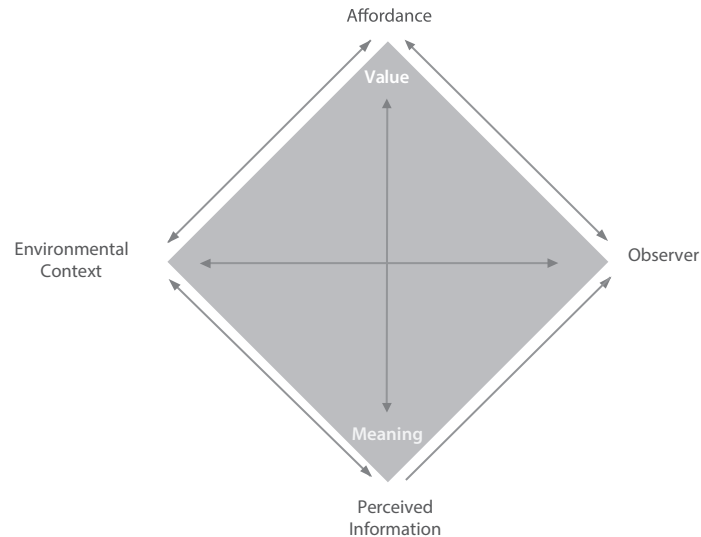


Figure 3.9
Properties of affordance
based on Gibson's (2016)
construct.

Applied to a context of policy making, the theory of affordance offers a theoretical framework to examine both the quantitative aspects as well as the relational dimension of value, of meaning in policy interventions. As a construct, affordance reinforces the fluid and dynamic definitions of 'value in use' and 'value context' in regard to the relational nature of services, discussed in Section 3.2.7. Affordance offers a structured way to approach, examine and potentially design for interaction. Despite not originating it, design has had significant impact on design research and practice, including in the development of user centred methodologies, which I will now consider.

3.3.2 Design and affordance

Affordance makes its first appearance in Don Norman's (1999) work on interaction design, *The Psychology of Everyday Things*. In a design context, the properties of affordance migrate from the environment which humans interact with to the objects, artefacts and forms of interaction designed within them. Its popularity coincides with the emergence of new technologies, such as desktop computers, which challenged design practice due to a loosening of the relationship between form and function (Flach et al., 2017). As the function of objects became more abstract, their physical form no longer provided clues about their use, and affordance became a critical element to aid

52. 'The topic of conceptual models (...) are part of an important concept in design: mental models, the models people have of themselves, others, the environment, and the things with which they interact. People form mental models through experience, training, and instruction.' (Norman, 1999:p. 17).

53. In his later work, Norman (1986, 1999) acknowledges some of these shortcomings by exploring the different physical, logical and cultural aspects of affordance. As part of this, Norman describes interaction and affordances as occurring through ongoing cycles which move from execution to evaluation.

54. Gaver goes further, as he suggests affordances can occur as a series of sub-actions. These can either be sequential in nature, where one affordance leads to information indicating new ones, or nested affordances which are grouped in space (1991).

users in the correct use of these artefacts.

For Norman (1999), affordances in design provide strong clues about the operation of things. They determine the perceived and actual properties of how an artefact can be used. Affordances need to be designed into products to provide an artefact's clear conceptual and mental model⁵² and to make visible a set of possible actions and consequences for these courses of action. Unlike Gibson, Norman does not strongly distinguish between affordances and the information which specifies an artefact's possible use. Neither does he emphasise the existence of innate affordances within an artefact. Furthermore, he pays less attention to the importance of the agency of a user in seeking and making use of affordances. For much of his analysis, the designer takes on the role of the expert (Sanders & Stappers, 2012) in assessing the best courses of possible action for future design application in the creation of affordances. His initial work attracted criticism from within design research (Kaptelinin, 2013) for its imprecise and oversimplified take on affordance.⁵³ Despite this, analyses that followed Norman's tended to examine the cognitive and ergonomic dimensions of affordances and the explosion of UCD methods in design.

Writing from an interaction design perspective, Gaver (1991, 1992) returns to Gibson's original analysis (McGrenere & Ho, 2000) to address some of these shortcomings. Gaver defines affordance as the 'complementarity of the acting organism and the acted-upon environment' (1991:p.2), returning an element of agency to users in those interactions. He also acknowledges the influence of cultural, social elements on what affordances are and how the information about affordances is perceived. Gaver returns to the idea that affordances are distinct from the perceptible information about them and develops a framework to systematically analyse this relationship (Figure 3.10).⁵⁴

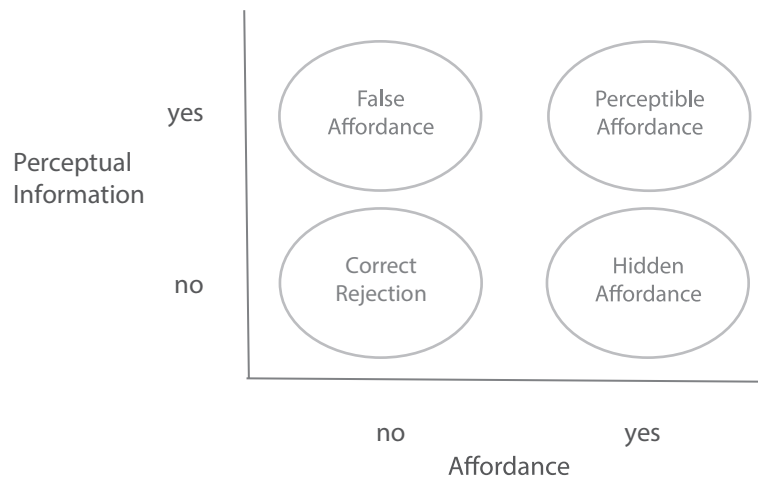


Figure 3.10
Gaver's (1991) model
of affordance and
the relationship with
perceptual information.

He also introduces the idea of learning as discerning patterns within culturally and socially recognised contexts and the compatibility of these with attributes of artefacts which make them relevant:

'The actual perception of affordances will of course be determined in part by the observer's culture, social setting, experience and intentions. Like Gibson, I do not consider these factors integral to the notion, but instead consider culture, experience, and so forth as highlighting certain affordances. (...) Learning can be seen as a process of discriminating patterns in the world, as opposed to one of supplementing sensory information with past experience. From this perspective, my culture and experiences may determine the choice of examples I use here, but not the existence of the examples themselves. (...) The concept of affordances points to a rather special configuration of properties. It implies that the physical attributes of the thing to be acted upon are compatible with those of the actor, that information about those attributes is available in a form compatible with a perceptual system, and (implicitly) that these attributes and the action they make possible are relevant to a culture and a perceiver.' (1991:p.3)

Perceived information, in particular in the case of new forms of technology, becomes available through interfaces which guide users to explore affordances. McGrenere and Ho (2000) go further, naming the distinction between an affordance, as the utility of an object, and the information that specifies affordance, as usability (Kaptelinin, 2013). The emphasis on perceived information as usability, its compatibility to cultural references which guide perception, and affordance as innate

55. His analysis echoes that of Buchanan (1995) by suggesting designers play a role helping to negotiate the advance of design concepts in their several manifestations through stakeholders engaging in the construction and design of meaning itself.

56. This echoes Dewey's suggestion about the significance of meanings and habits to the formation of the public - and of public problems - and consequently the state where Dewey suggests 'Habit is the mainspring of human action, and habits are formed for the most part under the influence of the customs of a group. (...) Habits bind us to orderly and established ways of action because they generate easy skill and interest in things to which we have grown used and because they instigate a fear to walk in different ways because they leave us incapacitated for the trial of them.' (1954:pp. 159-160).

to artefacts all highlight parallels to the nature of policy instruments and the design challenges involved in it. Despite this, the analyses from interaction design tend to reduce affordances to a series of interfaces.

By extending the idea of affordance as usability, Krippendorff, in *The Semantic Turn* (2006), introduces semantics and second-order cybernetics (which will be discussed in more detail in Chapter 4), to understanding and designing in response to affordances. Although not writing exclusively about affordance, Krippendorff (2006) focuses on meaning as socially constructed and as a habit, to define it.⁵⁵ According to Krippendorff (2006):

'artefacts are not entirely stable entities. Their meanings change with use. As users become competent, they change their understanding without a necessary end in sight. People learn all the time, which means changing one's understanding. Also artefacts tend to undergo several transformations in meaning, without changing their material composition.' (pp.77-78).

Krippendorff concludes that affordances are 'habits of being-in-the-world' (2006:p.113)⁵⁶ and proposes a design framework to ensure designers can systematically explore affordance as usability and the various dimensions of meaning and value and can design in response to affordances. According to Krippendorff (2006), second-order understanding consists of a designer's understanding of an artefact and, in turn, a designer's understanding of different users' understandings of it, both of which are inextricably entwined (p.66). Krippendorff's (2006) framework (Figure 3.11) supports the design process by breaking down users' engagement with artefacts and their affordances at different stages of interaction.

The framework allows designers to move users effortlessly from recognising to exploring and to relying on affordances, according to the users' own constructs, meanings and understandings of the world (p.78):

'Design for usability (...) may be measured by the periods between disruptions and by the time required to correct them. But to assure usability, designers should concern themselves

57. As discussed in Section 3.1.2, the principle of 'satisficing' as found in Simon's (1969) work challenges the unrealistic view of objective decision making; instead he proposes rationality as a 'satisficing' process.

with ways of discouraging meanings that could distract users from achieving reliance on the artefact under consideration.' (2006:p.141)

The framework links affordance to HCD, offering a wider systemic application of the concept. It also reflects, as I showed in Section 3.1, how the relational dimension of policies and their constructed meanings might be approached through the design of tangible interfaces and by exploring habits which sustain or change the current behaviours which policies seek to intervene in.

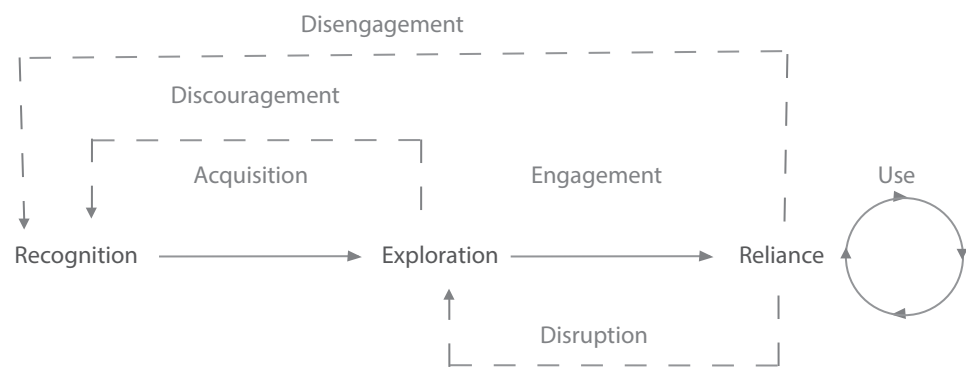


Figure 3.11 Design for usability (Krippendorff, 2006).

In Flach et al.'s (2017) recent work, they explore meaning in the context of value, adding the dimension of 'satisficing'⁵⁷ to affordance. They return to Gaver's model and Reed's (1991) earlier work to explore a key 'question [...] of what action [is] chosen — [and the] potential value associated with the consequences of performing an action' (2017:p.80). They also return to Norman's (1999) original view of affordance, which makes clear the consequence of choices as a key element present in the perceived information and usability of artefacts. By combining three dimensions of affording, specifying and satisfying, Flach et al. (2017) explore affordance in line with how people choose actions that are compatible with their intentions, by being able to appreciate the consequences of their actions:

'Our claim is that fully appreciating human experience in terms of either sensemaking or control requires that all three dimensions be considered. Affording reflects the constraints on action (e.g., the field of possibilities or the process dynamics). Specifying reflects the feedback that is available to control actions and

anticipate consequences. Satisfying reflects the underlying value system in terms of functional significance (meaningfulness) or in terms of the criteria for success (e.g., payoff matrix or cost function or emotional satisfaction).' (Flach et al., 2017:p.87)

Flach et al.'s (2017) analysis is not only significant in that they add the dimension of value to the analysis of affordance. Significantly, they reflect the idea of 'value in context' as one of choosing, in relation to the meaningfulness, the consequences and the pay-offs, the satisfying and 'satisficing' strategies being considered and which are afforded by artefacts, interfaces or policies, for that matter.

In this section, I examined the theory of affordance from its origins in Gibson's (1979) seminal work in ecological psychology and how it has been approached by design practice and research. I will discuss in more detail the relevance of affordance to policy instrument design and policy making in the context of my research question in the section below. For now, it is important to reflect on how affordance contributes to an understanding of interaction.

Affordance, as a concept, from its origins and application in design, provides both a conceptual and a practical framework to explore interaction and the development of a design practice in response to it. The distinction between the innate properties and physical attributes of affordances and the meanings in the perceptual information about affordances provide a robust way to approach interaction. Gaver's (1992) model highlights this distinction well, proving a systematic way to assess the relationship between affordances and meaning and the potential for action which emerges from it. In particular, the distinction between the utility in affordances, which allows for an objective and quantitative evaluation of affordance, alongside more qualitative aspects of usability, meaning and value, is meaningful to a policy context. Although Krippendorff's (2006) framework might be too rigid if applied directly to the design for policy instruments, it outlines useful temporal dimensions regarding the user's engagement with affordances and how to approach design practice in response to

these. Overall, affordance ultimately provides a mindset for engaging with and exploring interaction, which, in my view, has been lacking in service design and design for services debates.

In the context of policy instrument design, affordance highlights elements of meaning, behaviour and habit and how these help navigate the opportunities to be interacted with which are present in policy contexts and which are critical for future policy instrument design. It is seldom in a policy context that design practice involves the opportunity to design policy and policy systems from scratch, making it more likely that design practice will involve the redesign of existing systems. A designer's role in dealing with policy systems involves finding affordances within these systems, affordances which users themselves have created in how they wish or expect to experience public services or to adjust systems that are no longer fit for purpose from a policy implementation or goal perspective. It therefore follows that affordance, as a design construct, can help address the gap identified in the context of policy and policy instrument design for the need to focus on the interactive nature of policies and their instruments. I conclude this chapter discussing how I propose, through my research framework, to develop service design and design for policy practice using affordance in the context of policy instrument design.

3.4 Summary of Findings and the Research Framework

In this section, I examined the philosophical underpinnings of policy studies and how policy making has evolved, under a dominant rational instrumentalist approach, to solve policy problems through the specialisation of knowledge and the creation of knowledge apparatuses that seek precision in diagnostics and delivery. The consequence of this, recognised in the literature, sees significant effort placed on evaluative activity, leading to an incremental approach where only the most familiar strategies, benefiting from a proven track record of delivery, are chosen to justify public action. This not only positions policy design as a purely problem solving activity but also ultimately prohibits future alternatives from emerging, which are critically

needed.

Analyses which are focused on the processes for policy making provide few answers to these challenges. I intentionally shift my analysis away from considerations around the policy cycle, given that it is at best a heuristic device. This shift in part addresses the many critiques of the linear and sequential way in which the policy cycle fails to support the dynamic and contested reality of policy making in action.

Instead, I turned to policy design, a distinct area of analysis within policy studies, which reflects a growing awareness of the need to explore policy instruments as mechanisms which cut across the policy cycle and sustain policy intervention. I defined policy instruments as artefacts and relational entities which define people's experiences of policies and which ultimately determine the feasibility and definition of policies and public services. Design practice at the level of policy instruments spans across the macro, meso and micro layers of policy making (Howlett, Ramesh & Perl, 2009:p.172), making it meta-oriented activity.

Instrument design practice and the knowledge apparatuses created to support it, however, are characterised by an evaluative nature. These are limited in their ability to support the creation of new policy instrumentation to propose new directions for state intervention. Drawing from across the policy and public administration literature, my analysis further highlighted an increasing focus on the interactive nature of policies, their instruments and wider governance arrangements, which these current policy instrument design frameworks are ill-equipped to respond to.

To address this in the context of my thesis, design research and practice are used not only as a practical tool but also as an epistemology concerned with the projective enquiry for creating knowledge through making new artefacts and things. I demonstrated how design enquiry moves analysis beyond an evaluative role of problem solving activity to uniquely exploring the interaction between

artefacts and people.

My research draws on the service design, the design for services and design for policies alongside the theory of affordance, which is concerned primarily with interaction, to assess the contribution of design practice and research to create new design for policy instrument capabilities. The analysis which I have undertaken in my literature review points to a clear research gap concerning the need for new policy design capabilities which can respond to the opportunities arising from the interactive nature of policies and their instruments to provide new policy alternatives.

I demonstrated recent efforts from within the design literature and research, evidence of the contribution of design to public service innovation and across a range of policy areas, including policy diagnosis, decision making, operationalising policies through services and organisational change. Design debates place significant emphasis on UCD and HCD approaches. Despite their porous definitions and the need to avoid the oversimplification of users, there is growing evidence of their ability to offer significant insight into policy problem diagnoses, using sensemaking to bring the human experience to the fore. This centrality of users is also reflected in the adoption of co-creation and collaborative processes into the policy decision making nexus and their having become synonymous with design practice in government. However, as I argued, these should be approached with caution, as they are not equivalent to wider democratic processes of representation. Despite these challenges, there is a growing body of evidence regarding the application of design practice to policy problems, seeing the emergence of socially innovative service models and collaborative organisational arrangements which have the potential to challenge our current public governance models and models of democratic participation. As I have argued, however, they lack, the necessary policy instrumentation to support the wider viability and dissemination of some of these models.

The emerging debates from service design and design for services

and policy place emphasis on the role of services as the primary expressions of how citizens experience public policy, making services an integral mechanism by which policies come to be delivered. I instead proposed that services are defined by policy instruments — the legal, regulatory, fiscal and informational infrastructure — which determine the content and scope of services and are in need of innovation (Barnett et al., 2008; Shore, 2009; Beckman & Diesendorf, 2010). This suggests a significant shift in policy design focus towards the design for policy instruments. Services are defined by value co-creation, which arises from the interaction between users and providers and becomes manifest at the level of the interface. With clear parallels to public value debates and the relational nature of policy instruments, the concept of value co-creation and ‘value in context’ ground the unit of analysis to the point of interaction as a by-product of services and place a strong emphasis on value as a multidimensional construct. Despite this, design debates fail to acknowledge the need to address the impact of dimensions of power and inequality in shaping these interactions when considering value co-creation in a policy context.

As I have argued, there is growing evidence for how design research and practice contribute to policy innovation, despite this contribution being located mainly at a micro level of policy intervention. However, this is less the case when concerning designing for and in response to interaction, which is not examined in its own right. To address this, I considered how the theory of affordance provides a mindset for framing engagement with and developing design practice in response to interaction and the potential opportunities arising from it. The distinction between affordances as possibilities of action — as quantifiable properties — and their perception and usability, through the information in an object’s interface, proves key to the analysis of how the theory of affordance could be developed for the design of policy instruments. Given the socially constructed reality of policies and their instruments, and given that design practice in a policy context inevitably involves working with and within existing systems, an appreciation of affordances might prove critical for a successful

58. In their analysis, Johansson and Woodilla (2008) apply Burrell and Morgan's (1979) framework to map the design, design management and management literatures and epistemological approaches.

design intervention in policy making.

As I have shown, there is a significant overlap between affordance as a theory and affordance as a construct and the design literature that addresses services and innovation. However, given its focus on interaction as the relation between utility and its compatibility with perceptible clues and patterns of meaning and behaviour, affordance provides a robust framework for the development of instrument design practice, where affordance comes to dynamically determine the feasibility of public intervention.

Policy instruments, as meta-interfaces of policy delivery and implementation, delimit the experience, the tangible and intangible assets and the scope of public value creation opportunities extended over a series of interfaces. Gaver's affordance framework provides a significant insight into how to develop policy instrument capability to complement policy instrument choice frameworks through design practice and its application of affordances.

My research framework aims to shift the analysis and application of Gaver's model of affordance as a conceptual tool away from the relationship between the observer and the environment nexus towards an application which encompasses analysis at an organisational level. To do this, I borrow from the analysis of Burrell and Morgan's (1979) sociological paradigms for organisational analysis and Johansson-Sköldberg and Woodilla's (2008) application of this paradigmatic framework to design management.⁵⁸

Burrell and Morgan's (1979) paradigmatic framework offers a multidimensional intellectual map to locate the theoretical assumptions and the contrasting standpoints, concepts and analytical tools which frame sociological analysis (23). Their four paradigm framework focuses the analysis on the objective versus subjective theoretical dimensions of social theory against the contrasting aims of sociological research for either regulating or changing the world. Although none of the quadrants implies unity of thought, they 'define

four views of the social world based upon different meta-theoretical assumptions with regard to the nature of science and of society' (1979:p.24) that are mutually exclusive.

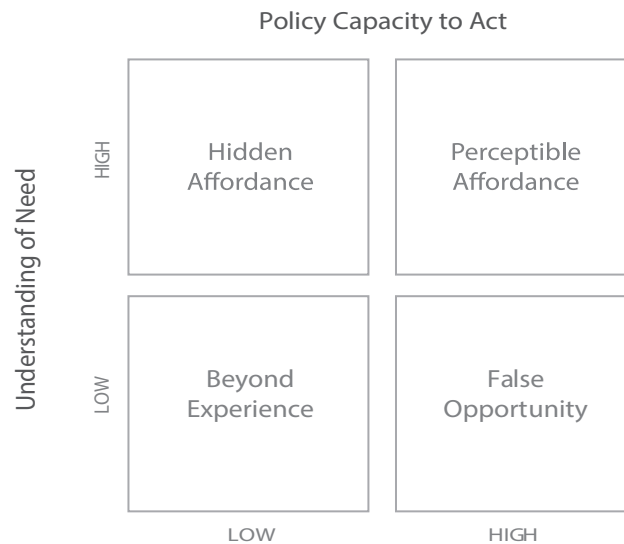


Figure 3.12
The research
framework.

My research framework provides a 2 x 2 matrix to guide design practice and research into the design for policy instruments. It examines interaction as affordances alongside two distinct axes of analysis: (a) the relationship between possibilities of action found within a policy ecosystem and (b) the identification and understanding of policy need from an HCD perspective. As shown in Figure 3.12, the research framework labels affordances into four distinct quadrants, as:

1. Affordances beyond experience
2. False affordances or opportunities
3. Hidden affordances
4. Perceptible affordances

Unlike Burrell and Morgan and the applications of their model, the aim of this framework is not to classify existing research but instead to function as an aid to diagnosing current policy instrument design and intervention and future policy instrument design directions. My aim is to provide an analytical tool to guide design activity and, like Burrell and Morgan, uncover current frames of reference in existence within policy instrument design and implementation. But unlike Burrell and Morgan's and Johansson-Sköldberg and Woodilla's (2008) application

to design management theory, my research framework does not set out to map opposing dichotomies of practice or to locate one's own practice. Within the framework, the quadrants share a common set of features on the horizontal and vertical axes; however, given that the framework is aimed at assessing the current state and at designing future policy instrument design directions, it is possible that quadrants might be mutually applicable across seemingly opposite dimensions. As the design projects covered in Chapters 5, 6 and 7 will demonstrate, policy settings display a combination of elements within each of the quadrants, suggesting instead a spectrum for design interventions.

Overall, the research framework proposes working with interaction as affordances, applying a service-oriented perspective to highlight the range of affordances arising from different combinations and forms of interaction in a policy context. As I will discuss in Chapter 4, my research framework will inform the design project selection and analysis into how we might explore the interaction and design of policy instruments and their choices. In what follows, I will expand on the methodological perspectives which underpin the analysis and guide development of my research strategy and the selection of design projects to address the main objectives of my thesis.

4. Methodology

In this chapter, I will focus on the methodological implications of conducting research through design into the design for policy instruments, through making and projective enquiry, from the standpoint of design as a distinct epistemology. I adopt a research through design (Archer, 1995; Frayling, 1993; Findeli, 2005) approach and examine, first, how design for services and design for policy can develop the theory of affordance to combine specifying quantitative, qualitative, interactive, systemic and value co-creation considerations used to assess and design future opportunities for new policy instruments. Secondly, I examine what the new alternatives to the traditional instruments might look like to in order to address shortcomings in our current policy making practices.

In what follows, I consider 'how we know what we know' (Crotty, 1998:p.8) and 'the nature of the relationship between the knower or would-be knower and what can be known' (Guba & Lincoln, 1998:p.201) in the context of design research. I will explore the epistemological foundations of design research, drawing on its history and its evolving development alongside systems theories and cybernetics. I discuss how its development has helped establish design research as a distinct epistemology to the sciences, by examining distinct areas for design research and analysis. I situate my PhD as research through design and explore this form of enquiry's unique nature as a projective, cyclical and self-reflective form of research (Glanville, 1997, 1999, 2004; Findeli, 2008;3 Findeli & Bousbaci, 2005; Chow & Jonas, 2008; Jonas, 2012). I will consider the contribution of action research methodologies to the development of my analysis and research through design more generally. Given that one of the research aims involved building evidence to replicate the contribution

of design to policy instrument design, it was important to uncover which elements could be generalised for wider application in future design practice and design research directions. I follow that by discussing project selection and analysis and by the application of my research framework in order to identify contexts and to set parameters for project identification, based on the identified constraints and opportunities within existing policy instruments for future action. I conclude this chapter by setting out my methodology and design project framework, alongside each of the design project research questions and objectives.

4.1 What is Design Research

Exploring policy instruments as design entities in their own right carries with it research into the epistemological consequences of this approach. If design's contribution to policy instrument design is to be understood on its own terms, it must account for both how design outcomes are produced and what is involved when designing in such contexts. But most importantly, it presents an opportunity to explore whether approaching the policy context from a design perspective might also shed new light on how we understand design research itself. But first it is necessary to consider the epistemological foundations of design research.

The development of design as a distinctive epistemology has parallels to other research epistemologies, which saw the modernist ideals of empiricism, objectivity and rationality drive early debates, followed by rebuttals from post-structuralist, discourse, reflexive and critical theories. The history of design research is no different, where, as Johansson-Sköldberg and Woodilla (2008) suggest, different paradigms have replaced one another, both in the epistemological and in the methodological discussions surrounding design (p.12) and where design research has been marked by a desire to establish its relation to the sciences and to legitimise design as a discipline in its own right.

The beginning of the twentieth century saw a marked effort by

59. Cross (2001) terms this as scientific design and sees mechanistic and industrialised design take precedence over more intuitive and craft based approaches.

60. Examples of this can be seen across the design movement, as for example in the work of Le Corbusier, De Stijl and others. The 1960s marked a culmination of this movement.

61. For instance, this is illustrated in Christopher Alexander's early work (1977).

62. An example of this included methods from operational research (OR), with high levels of abstraction and delegation of decision making to experts' over-simplified design methods (Bayazit, 2004).

designers to create a distinction between craft-based forms of design and the new industrial practices.⁵⁹ Scientific methods were adopted and were seen to bring objectivity and rationality to design activity by systematically cataloguing and creating a taxonomy of design form and function and its elements.⁶⁰ Coined by Buckminster Fuller (1965) as the 'Design Sciences' decade, it sought to combine sciences, technology and rationalism and to solve complex social and environmental problems. The aim was not only to create scientific knowledge of artefacts and their interfaces (Simon, 1969) but was also to systematise the design process and develop rigorous design methods (Archer, 1965).⁶¹

Simon's (1969) *The Sciences of the Artificial* was fundamental to the establishment of design as an epistemology. In this book, he argued for scientific methods and knowledge from other disciplines to be incorporated into the process and methods of design. Scientific methods were seen to produce intellectually robust empirical knowledge, ensuring that design could carry weight equal to that of other disciplines.

This trend in design research mirrored and was deeply influenced by emerging trends in systems thinking. These trends led to efforts which simplified the design processes and methods but, in doing so, created several challenges for design practice and research.⁶² In searching for optimal solutions, they were unable to handle the complexity of design's ill-defined problems, bringing a rigidity to design practice. Applications became prone to failures (Bayazit, 2004; Krippendorff, 2007), often discrediting design's contribution as reductionist and simplistic in its concern with defining and designing processes.

The end of the 1960s saw a backlash against this quest for rationalism, objectivity and empiricism in design. Rittel's (1972) seminal work on wicked problems, which considers findings emerging from his engagement in social policy and planning contexts, challenged this oversimplification of problem definition as part of the design process and the linearity of design processes. Influenced by the philosopher

63. Rittel's work is significant in addressing and highlighting the challenges of clear problem definition. His approach also sought to establish the design discipline in relation to the sciences by pursuing positivist problem solving approaches to design problems.

Karl Popper and his work on the paradigms of knowledge, Rittel suggested that the nature of the problems designers tackle is indeterminate and ill-defined, making clear problem definition and linear design process highly problematic and unlikely to address real-world problems.⁶³

In the wake of Rittel's analysis, Buchanan's own paper on wicked problems (1990) suggests that the problems designers tackle have an inherent interdisciplinarity. Although for Rittel (1972) this appears problematic, Buchanan suggests that the 'universality' of design's subject matter provides a significant opportunity to expand the breadth of design research. The interdisciplinarity of design is also reflected by Simon (1969) in his call for design to create common ground across the arts, technology and the sciences and his later acknowledgement that designers must deal with the unpredictability of human aspects, which requires designers to work within an ever evolving system without the pursuit of a final goal.

Donald Schön's (1983) book, *The Reflective Practitioner: How Professionals Think in Action*, provided a paradigmatically different perspective, which challenged previous design activity and research that presumed well-formed and clearly defined problems. Following a constructivist tradition, he proposed an approach which consists of reflection in action. For Schön, design practice is messy, or 'swampy', but as he describes it, it is within these 'swampy lowlands' where the problems of greatest human concern reside (Schön, 1983:p:42) and, potentially, wherein lies design's greatest contribution. According to Schön, working with these swampy problems requires a more intuitive, experimental and reflective practice as well as an epistemology of practice. Dorst (1995) provides a critique to Schön, raising issues about the rigour and relevance of a self-reflective approach. Despite this, Schön calls for an epistemology of practice, chiming in with Simon's (1969) own reflections about the need to create common ground across different disciplines. This view is also echoed in Cross's (2001) later attempts to understand 'designerly ways of knowing' as a distinct way to talk about design which is both interdisciplinary and

disciplined (Cross, 2006).

Despite these critiques, the 1980s and 1990s saw a continued concern in the design sciences, with debates surrounding design methods in architecture, engineering and computer-aided design (Hubka & Eder, 1988, 1996; Cross, 1994). Archer's (1981) definition of design research reflects this view, where he argues that design research involves a 'systematic inquiry whose goal is knowledge of, or in, the embodiment of configuration, composition, structure, purpose, value, and meaning in man-made things and systems'.

This focus on processes was accompanied by the growing prominence of design practice and by the design community's own efforts to make the design process intelligible to non-designers. The UK Design Council's double diamond representation of the design process serves to illustrate this, and this has had a profound impact both on how design is externally perceived and how it has come to subsequently define itself.

As Hubka and Eder (1988, 1996) and Cross (1994) continued to develop design methodologies that later came to define the design sciences, a significant distinction began to emerge within design research — of research 'about', 'for' and 'through' design practice 'as a system of logically related knowledge, which should contain and organise the complete knowledge about and for designing' (Hubka & Eder, 1996:p.50).

Archer, in his paper 'The nature of research' (1995), was the first to distinguish amongst these distinct categories of research, later made popular by Frayling (1993) in his Royal College of Art address through the classification of research 'into', 'through' and 'for' design. Despite the lack of a clear definition of the difference in these research stances, these debates highlight fundamental differences in the epistemological standpoints amongst these approaches, and they mark significant differences as perspectives on the concern with the purpose, value and meaning in design enquiry.

64. Whereas first-order cybernetics explored principles of self-organisation, it focused on the world of machines. Key to first-order cybernetics is an understanding of complexity where principles of the dynamics of behaviour and goal seeking behaviours. Constructs, such as the black box, were developed to model the hidden behaviour of mechanical systems by systematically testing different inputs and observing the outputs these produced. Conversely, second-order cybernetics moved away from identifying goal seeking behaviour. Von Neumann's self-producing automata (1966), Maturana and Varela's autopoiesis (1984) and von Foerster (1992) explored positive and negative feedback loops, the flow of information through systems, circularity and aspects of causation.

Broadly speaking, research 'into' design involves more traditional forms of empirical research to investigate the processes and activities of design as external and observable entities which are not exclusive to designers or design activity. Its purpose is to understand the conditions and to systematise the processes for replicating design practice in the future. Conversely, research 'for' design involves building knowledge through reflecting on design practice and its materiality and processes. Learning is therefore specific to design practice in and of itself. Finally, research 'through' design combines these perspectives, suggesting both a systematic and self-reflective element of research with a clear purpose of building knowledge beyond the practice of design about the world. It presents a clear break with previous attempts at design research, which sought to approximate design to other existing epistemologies of knowing.

These emerging distinctions reflect debates within systems theory and cybernetics — first- and second-order cybernetics (Glanville, 1997, 1999; Chow & Jonas, 2008) — which, as we saw earlier, influenced previous design research and the design sciences.⁶⁴ In particular, second-order cybernetics shifts the focus of research activity to an understanding of the flow of information through systems and aspects of causation, positioning cybernetics within a radical constructivist tradition, echoing Schön's position:

'[It] returns to the core of cybernetic concept of 'circularity', or recursion, by recognising that observers bring forth their worlds (Maturana & Poerkston 2004; von Foerster & Poerkston 2004).'
(Ison, 2008;p.145)

For my research, this is epistemologically significant, because the aspects of circularity, the flows of information and the self-reflective analysis are critical to the examination of the interactive nature of policy instruments and for the examination of affordance as a design concept in this context. This shift is present in the ongoing debates in design research, as they move away from focusing only on design artefacts towards consideration of the contexts which surround design activity.

65. Echoing Frayling's earlier distinctions, Findeli also seeks to create a distinction between design research and practice. Unlike the self-reflective practice argued for by Schön, research about design, in Findeli's view, separates design practice from theory. Research for design involves studio based, exploration of design materials, technology and applied sciences (Findeli, 1998), for the sake of developing an applied practice of design. Finally, in research through design, Findeli brings together both some of the objectivity as well as the reflective nature of doing research through design.

I draw on Findeli and Bousbaci's (2005) Bremen model, where they propose a shift away from an analysis based on products towards a concern with ethics in design, and from the context where design occurs to where it creates change. They critique Cross's 'designerly ways of knowing', arguing that although it takes into account the creative and projective element of a designer's activity, it ignores the context which the designed artefacts interact with. This preoccupation with the context is echoed in Simon's (1969) *The Sciences of the Artificial* and Krippendorff's (2006) *The Semantic Turn*. This is significant, as we saw in the previous chapter, for the theory and the use of affordance in design. Findeli, however, draws an important distinction between approaches based on ecological perspectives and second-order cybernetics and the projective nature of design when he states:

'the aim of human ecologists is to construct a theory of human-environment interactions; their stance is descriptive and mainly analytical. Conversely, the aim of designers is to modify human-environment interactions, to transform them into preferred ones. (...) As design researchers consider [the world] as a project, their epistemological stance may be characterised as projective.' (Findeli, 2010:p.128).

From an epistemological perspective research through design is defined as research grounded in projective action (Findeli, 2008), distinguishing itself as unique in the way in which it creates knowledge about the world. In differentiating research 'about', 'for' and 'through' design, Findeli and Bousbaci (2005) argue research through design combines both research 'for' and 'about' design through the application and use of design practice in a manner which is embedded, engaged and situated.⁶⁵

The projective, situated and self-reflective nature of research through design echoes my own research objective of exploring how design practice, design research and the theory of affordance can contribute to the design for future policy instruments. Research through design

provides the opportunity to explore, through projective enquiry, the possibilities of action afforded by the context in which policies intervene and, in turn, how policies and the stakeholders affected by them come to be defined by the relational nature of their interactions.

Echoing Frayling's (1993), Archer's (1995) and Findeli's (1998) distinctions of research through design, Jonas (2012) highlights this as a significant shift in design research. It moves design research away from its previous focus, intent on establishing the position of design as a discipline in relation to the sciences by establishing an empirical and objective basis for design research and practice. According to Jonas, this shift changes the purpose, the intention and the subject of design and sees the emergence of a 'genuinely designerly research paradigm' (p.21). According to Jonas, the inconsistencies that remain present in the definitions of these different categories of research through design and research 'for' or 'about' design lead him to suggest that further work is required to establish research through design as a distinct epistemology and to understand the methodological implications which accompany it.

In his paper, Archer (1995) is the first to discuss the methodological implications of how to conduct research through design — or what he terms research through practitioner action. In this paper, Archer suggests that action research methodologies are well suited for this, as they build knowledge by taking action in the real world. Findeli also proposes the use of action research methods but suggests they should be combined with grounded theory methods, in what he terms project-grounded research. This view is echoed by Jonas (2012), who proposes, alternatively, the use of these theory-building methodologies — grounded theory and action research — to develop a bespoke methodology for research through design. Archer (1995) and Findeli (1998) both warn against equating R&D practices, which are part of design practice, with design research. Friedman (2003) goes further in highlighting the challenges of the application of research through design and the development of a theory of construction in design when he argues designers often confuse practice with research:

‘Instead of developing theory from practice through articulation and inductive inquiry, some designers simply argue that practice is research and practice based research is, in itself, a form of theory construction. Design theory is not identical with the tacit knowledge of design practice. While tacit knowledge is important to all fields of practice, confusing tacit knowledge with general design knowledge involves a category confusion.’ (2003:p.519)

To avoid these pitfalls, Archer (1995) highlights two areas which researchers must be aware of when conducting research through practitioner action. First, researchers need to make clear their ideological and ethical positions, both in the actions and in the interventions they are seeking to make and in the observations they draw from research interventions. Secondly, Archer argues that the findings designers produce as an outcome of action research are context- and situation-specific. For him, to create generalisable knowledge from these context-specific findings is challenging. Archer’s arguments raise an interesting consideration regarding objectivity, but more importantly, regarding the replicability of research findings and the transferability of the design outcomes in the course of employing research through design. It is my view that this can be addressed if the design research is well-situated within a well-defined context and if it occurs through the development and the application of a clearly defined research framework to guide research through design. As I will discuss in Section 4.3, this is a research objective which I seek to address throughout this thesis.

In this first section of the methodology, I explored the evolution of design research in order to position my thesis as one which undertakes research through design. I discussed how the earlier focus in design research involved the establishment of design as a discipline in its relationship to the sciences. I showed how design research has attempted to build knowledge about design in order to bring rigour and empiricism to the design discipline, through the clear definition of problems, and to ensure both the quality of the design outcomes and the replicability of this method of enquiry. In contrast to this, those

writing from a constructivist perspective have argued that design research involves a reflective practice. These attempts involved the building of knowledge about design through the practice of designing itself by examining the design artefacts and the design materials used in the design process. The recognition from the design sciences and from the cyberneticians of the benefits of design to the sciences (Cross & Roozenburg, 1991; Glanville, 1999) helped establish design as a distinct paradigm of knowing and understanding the world. Research through design emerges from this, proposing to build knowledge both about design and about the world through design practice and enquiry. Research through design involves a projective, self-reflective and cyclical form of enquiry. Now I will consider the methodological implications of conducting research through design.

4.2 Projective Action as a Methodology

In the previous section, I discussed the epistemological foundations of design through research, drawing on the debates from within design research (Archer, 1995; Findeli, 1998; Jonas, 2012). As I showed, research through design is projective in nature and has strong parallels to theory-building methodologies. In this section, I will consider these methodologies and examine how they might support the development for research through design within the context of my thesis.

4.2.1 Methodology for research

Action research, by its very nature, is embedded in real-life situations and is characterised by a dynamic ongoing interaction between the development of theory and the pursuit of practice. Reason and Bradbury (2013) define action research as:

‘a participatory process concerned with developing practical knowing in the pursuit of worthwhile human purposes. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities.’ (p.4)

In the social sciences, action research follows a post-positivist

66. Checkland, reflecting on Ackoff's own account of wicked problems, which Ackoff defines as messes, considered the focus of system thinking theories on purely identifying goal-oriented behaviour to be unhelpful. Soft system thinkers proposed a significant shift in systems theory as an epistemology, moving the discipline away from considering systems as given entities, and instead, to the building of models to facilitate action learning and research about systems (Ison, 2008).

tradition, which can be traced back to Paulo Freire's (1996) seminal work on education and international development. Action research originates from debates on participatory development and empowerment, themes which are reflected in its proposed application as a method and a process of enquiry. Dick (1999) and Susman (1983) argue that the application of action research methods proves useful in research situations which are complex and uncontrollable, where both an understanding and an actioning of change are sought. From a design research perspective, Jonas (2012) suggests action research is 'aimed at the modification of reality, while observing and processing theory modifications' (p.21) and therefore is concerned with projecting change. As a methodology, it is featured in soft systems theory perspectives, most notably those developed by Ackoff (1974) and Checkland (1985) in their work on the circularity of learning.⁶⁶

In view of the issues discussed above, the embedded, engaged and participative nature of action research and its standpoint of projecting change is well aligned with the aims and objectives of my thesis. First, as a method, action research is better suited to the projective and self-selective nature of research through design. Secondly, it is more aligned to support the development of a research strategy which is able to produce knowledge and learning through practice. This is specific to my research aims, which involve:

1. Learning by doing;
2. Research grounded in practice to produce design knowledge about, for and through practice;
3. Practice which is collaborative and oriented towards producing and driving change within a specific policy area; and
4. The use of experimentation to build new knowledge and to challenge existing theory and practice within design, policy instrument design and policy making.

Having demonstrated the existing parallels between the projective nature of research through design and action research, it is important to examine the basic elements of how to structure action research in

the context of my thesis in applying research through design.

4.2.2 Research through design as action research

Reason and Bradbury (2013), outline a series of attributes common to action research projects, which include:

1. A focus on practical issues to respond to people's desires, which, in turn, produces practical knowledge;
2. Values-oriented practice used to increase human flourishing;
3. The creation of knowledge in action and new forms of understanding of an interdisciplinary nature, drawing on many ways of knowing both in the evidence that is produced and the way in which it is presented;
4. The development of an enquiry which is emergent and developmental in form and which starts from everyday lived experience; and
5. A collaborative, participative and democratic process of working with people, in their everyday lives, to open up new communicative spaces where dialogue can flourish.

Action research is characterised by a strong participative focus, which positions the researcher as a facilitator of change (Ison, 2008). Kemiss and Mactaggart (1988) define it as:

‘a form of collective self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or education practices, as well as the situations in which these practices are carried out.’
(p.1)

This highlights the significance of the participative nature of action research. In working with people, through processes of collective action and reflection, the research enquiry also equips participants and stakeholders to action change where these research interventions occur. In a policy context, where (as I discussed in Chapter 3) the shortcomings of top-down approaches to policy making, policy design and implementation are widely acknowledged, action research as an

approach of not enforcing change upon others but of changing with others, is significant (Reason & Bradbury, 2013).

Lewin's classic definition suggests that action research processes 'proceed in a spiral of steps, each of which [is] composed of a circle of planning, action, and fact finding about the results of the action' (1946:p.206).

The cyclical and self-reflective nature of action research and its method of enquiry bring rigour to the research process and its findings (Dick, 1999; Zuber-Skerritt, 1992; Oja & Smulyan, 1989; Carr & Kemmis, 1986; Heron, 1988). Traditional action research methods follow a four-stage cycle — of planning, taking action, observation and, finally, of reflection. Reason and Bradbury (2013), in contrast, argue for two cycles of research activity. The first involves action to establish a practice and gather evidence. The second involves reflection and making sense of the practice which has been undertaken and the findings that were produced, in order to inform future actions. There are strong parallels between the methods of action research as a two-stage process of action and reflection and the convergent and divergent nature which is typical to the design processes. In this sense, a two-stage method of action and reflection is better suited to the application of action research to research through design.

A second parallel between research through design and action research methodologies, as I have shown, involves the projective and cyclical nature of research practice. The debates in research through design highlight the fact that the self-reflected nature of research practice is often approached differently when compared to action research methods. Here I re-emphasise and draw on the similarities between research through design and systems thinking (Ison, 2013:p.148), in particular from Glanville's (1997) work on second-order cybernetics. In this paper, Glanville argues that research through design requires, at the same time as working from within the research context and reflecting on one's own actions as a researcher, that one also observes oneself and one's practice from the outside. According to Glanville,

the circularity of this kind of observation and research enquiry transcends the boundaries of objectivity and subjectivity (1997). These approaches bring to the fore an uncovering of meaning creation through a process of constant action, intervention and observation. They address the duality of the subject and the object of research enquiry and have significant parallels to the theory of affordance, as discussed in Section 3.3 in the previous chapter. Research through design, according to Glanville (1977), extends the role of the researcher, as proposed by action research, from that of being a facilitator to that of being both an observer and a steersman of action.

The third parallel relates to the embedded and collaborative nature of research through design and of action research methods. Reason and Bradbury suggest:

‘Action research is only possible with, for and by persons and communities ideally involving all stakeholders both in the questioning and sensemaking that informs the research, and in the action which is its focus.’ (2013:p.4–5)

The practical engagement of action research methods with people’s everyday lives has strong parallels to the HCD perspective and the co-creative practices in design. Despite originating from different research epistemologies, both action research and research through design use sensemaking to explore how people construct their realities and build mental models to understand and justify their actions in the world (Krippendorff, 2007; Sanders & Stappers, 2012). Research through design might not follow a participative approach in the strict sense of how it is defined in the social sciences, which involves continued collective action and reflection. However, design interventions seek to construct new realities and engender a social conversation which has the capacity to foster social change (Manzini, 2013), highlighting clear parallels between action research and research through design.

It is my belief that the projective nature of research through design, with a human centred imperative and situated in a particular context for research action and reflection, moves design research debates

beyond the critiques often associated with its more relativist and constructivist stance. The participative imperative of action research methods, in turn, provides an important counterpoint to the self-reflective nature of enquiry in research through design. For the purposes of my thesis, this ensures the research action and analysis are not only the result of introspective deduction, based on the designers' own interpretation of events, but that they are also situated in a larger project for collective action and change. Furthermore, the cybernetic perspective of circularity, of working through and building knowledge about, from and through practice, sits well with action research methods when these are combined with research through design. All three perspectives are well suited to my overall research question and the research objectives to build knowledge about the contribution of design to the design for policy instruments and about the impact of these instruments in addressing the question of housing affordability.

To support the proposed research approach, I developed and led a series of design projects. In what follows, I will set out how the research methodology developed as part of this thesis was designed to address the interdisciplinary nature of my research and to develop a research strategy and framework to select design projects and guide the final analysis of my thesis.

4.3 A Research Strategy in an Interdisciplinary Context

My overall research question examines the contribution of service design, design for service, design for policy making and the theory of affordance with policy instrument design in order to consider the implications of new policy instrument alternatives in addressing the question of housing and, more widely, of policy making practices. As I illustrated in Chapter 2, the problem of housing affordability is both complex in its policy ramifications and deeply interdependent, due to its reliance on the housing market for policy provision and in relation to other policy areas. I discussed how new policy capabilities and new models for the delivery of welfare are needed to address the current challenges created by the problem of housing affordability. These

challenges and the need to create new policy instrument capabilities that can take into account the interactive nature of policies and their instruments are not unique to housing policy. As I outlined in Chapter 3, these challenges are ill-addressed by our current policy making praxis and knowledge apparatuses.

As I have shown, policy instruments define public services and delimit the range of interactions, the experiences of the state and the scope of the value creation opportunities within an existing policy context. Policy instruments are therefore meta-interfaces of policy delivery and implementation. I also discussed how the theory of affordance provides a basis upon which to examine interaction and address the gap identified in the ongoing debates in service design, for understanding and designing in response to interaction. More importantly, the interactive nature of service encounters and their interfaces, as objects of service design, contribute to the theory’s application to policy instrument design and policy making. It was therefore important to develop a research strategy to address these two elements of my research question.

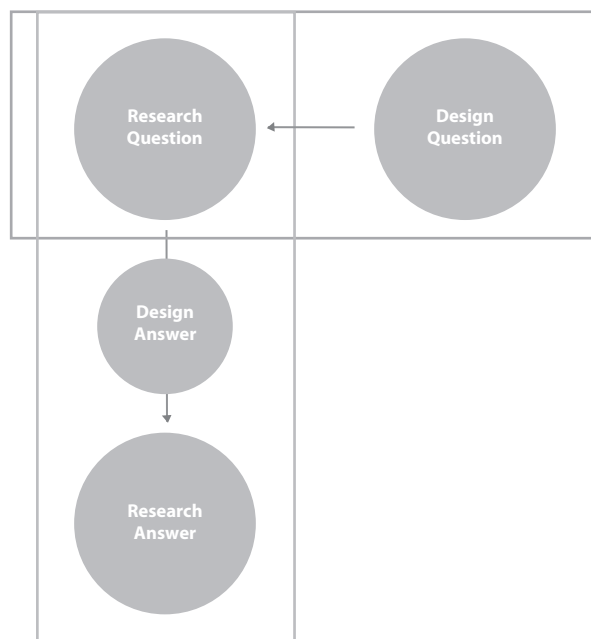


Figure 4.1
Findeli's Bremen model
(2010).

Research through design, as it seeks to produce knowledge about

design and about the context with which design engages as well as the methodological requirements of action research, allows for the development of a research strategy which is projective, circular in nature, self-reflective, embedded and intent on producing change.

To develop my research strategy, in response to the issues outline above, I draw on Findeli's Bremen framework for conducting research through design (2010), described in Figure 4.1. In his Bremen model, Findeli suggests that design questions — and answers — are qualitatively different in nature when compared to research questions. In his view, the design researcher initiates a research through design enquiry by identifying a design issue which is experienced in practice or by following a wish to deepen the understanding of a particular issue in design education (Findeli, 2010:p.296). He proposes that the initial design question raises fundamental issues about 'the human experience of the world' and that it is transformed later into a research question (Findeli, 2010:p.296). It follows that design practice employed in the context of research helps produce a design answer and a subsequent overall research answer.

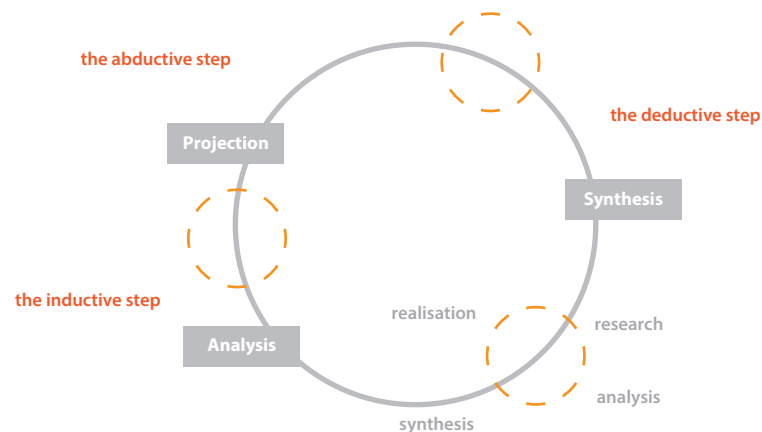


Figure 4.2
Chow and Jonas's
cybernetic model of
research (2008).

A shortcoming of Findeli's Bremen model, when applied to the context of my thesis, is that it does not accommodate the cyclical nature of action and the reflection of action research methodologies which I choose to use. It also assumes the existence of design practice, knowledge and theory in the context of intervention, which is not the case in the context of design for policy making. To address these, I

considered second-order cybernetic models of abductive thinking, as discussed by Chow and Jonas (2008). As I have outlined in Figure 4.2, these models better reflect the cyclical nature of projection, synthesis and analysis involved in applying action research methodologies. Despite addressing these issues, the cybernetic learning model, if compared to Findeli’s Bremen model, fails to provide a clear entry and end point in the overall research strategy. In my view, this is problematic.

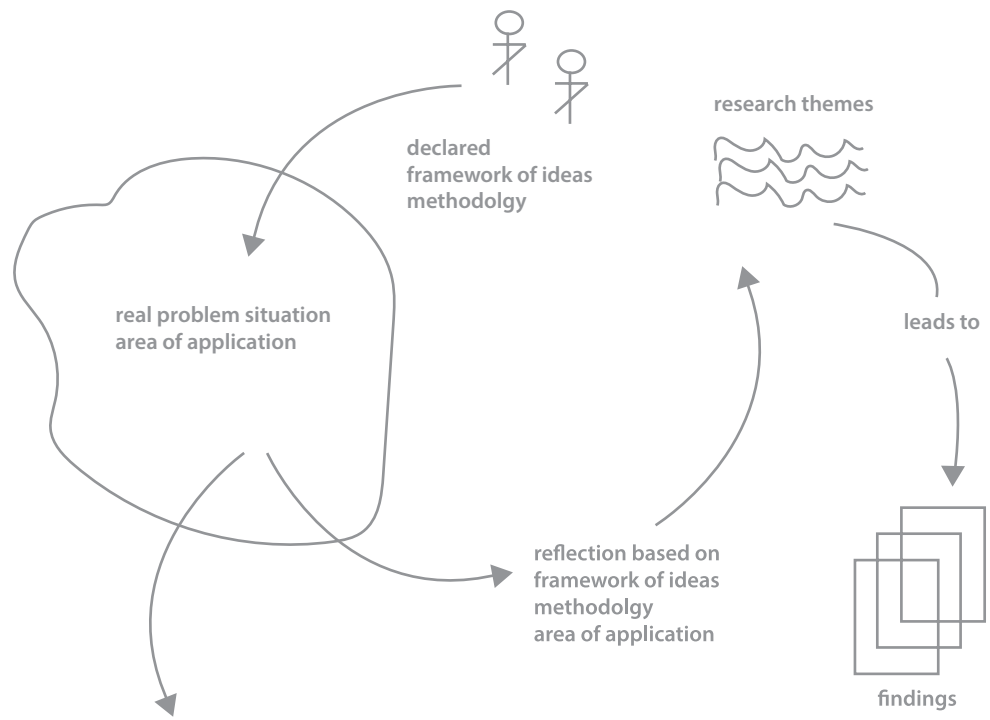


Figure 4.3
Checkland and Howell's
(1998) soft systems
research model.

Checkland and Holwell (1998), who write from an action research and soft systems thinking perspective, propose an alternative to address these issues (Figure 4.3). Their model starts from the identification of a declared ideological position which shapes the criteria of action in the proposed research interventions and the subsequent analysis of the findings. This position has clear parallels to Archer’s (1995) view of the need for the researcher to declare a clear ideological position when conducting research through practitioner action. The model developed by Checkland and Howell (1998) also has parallels to Findeli’s own Bremen model and the stages of action and reflection in action research. It consists of a two-stage approach, that of proposing an action, which in the case of my thesis consists of a design question, and then proposing a subsequent research question followed by reflective

analysis. As can be seen from Figure 4.3, the first stage of the model identifies research themes. The second stage defines an overarching research outcome to produce research findings.

My research strategy, as outlined in Figure 4.4, combines several of the key elements from the models which I discussed above. It is designed to help navigate the interdisciplinary nature of my research and to build knowledge about research through design and about design practice as applied to a policy context and to the design of future policy instruments. Unlike Findeli's Bremen model, the research strategy starts with a clearly identified research problem area. This approach addresses the lack of familiarity of design practice and knowledge in a policy context to also create a basis from which to develop design knowledge and theory specific to this field of investigation. This is then addressed by the development of a design question and subsequent research questions through a series of design interventions. The strategy comprises three main stages and seeks to address the following research objectives:

1. Define the Design and the Research Questions and the Design Project Choice Criteria
 - a. Generate in-depth understanding of housing policy and policy instrument design in the context of housing affordability.
 - b. Establish the quantitative and qualitative evidence basis to support and to define the scope of the design project intervention.
 - c. Generate understanding of policy instruments from a design perspective and explore how policy instruments can be approached as design entities to produce knowledge about design and policy making.
2. Design Action and Projection
 - a. Collaborate with partners to examine and to design new policy instrument solutions through practice based design projects focused on specific housing affordability issues.

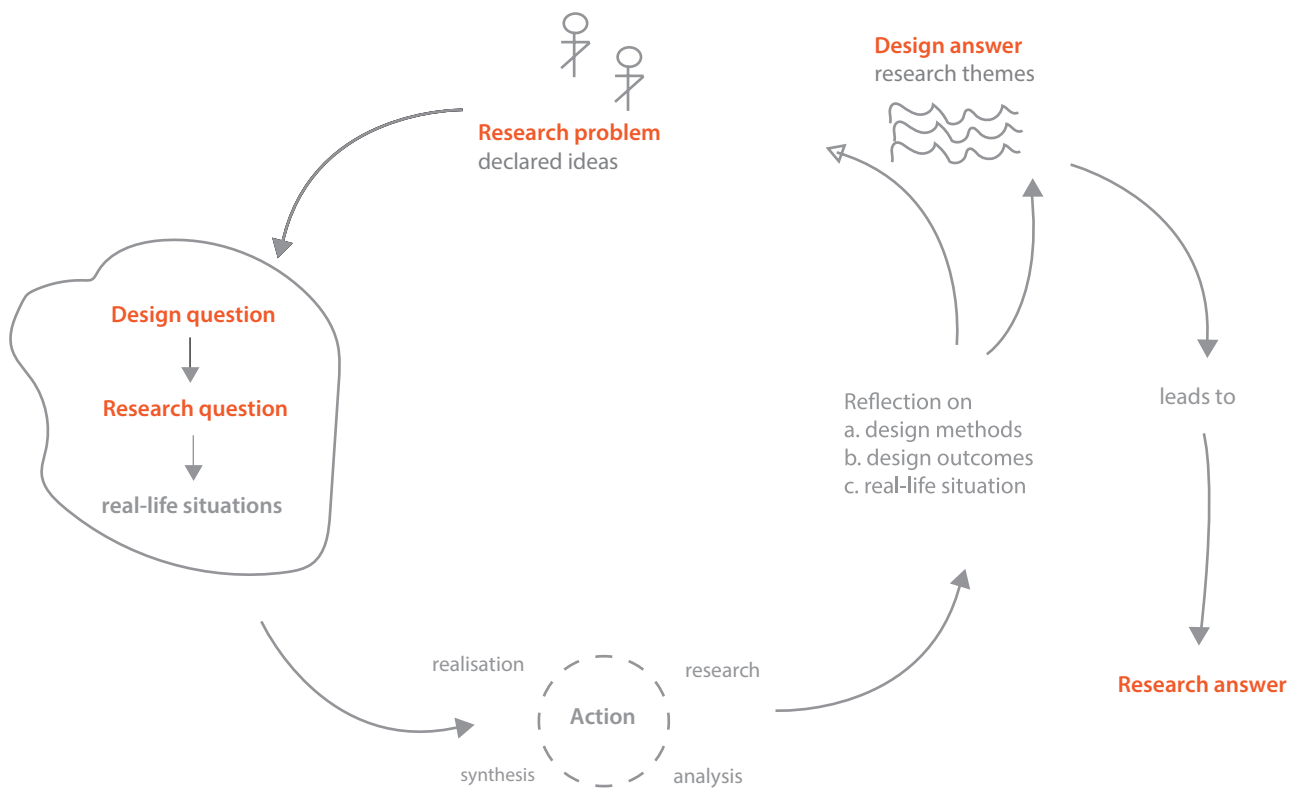


Figure 4.4 Thesis research strategy.

- b. Develop bespoke methods and approaches to conduct design enquiry in each of the design projects and housing policy contexts.
 - c. Develop and lead design projects alongside industry partners to experiment with the application of design methods to generate new ideas for policy instrument design and disseminate design practice in this field.
 - d. Develop policy instrument capabilities and new policy directions with a particular focus on how affordance can facilitate the upscaling of design for policy instruments and policy innovation in housing.
3. Research Reflection, Synthesis and Analysis
- a. Build evidence and knowledge about the application of design for services and design for policy in housing policy, policy instrument design and policy making more generally.
 - b. Generate learning and knowledge about the theory and application of affordance in the context of design for policy, design for policy instruments and policy making.
 - c. Build policy instrument design capabilities to address the interactive nature of policy instruments and drive innovation in policy design and policy making.
 - d. Build knowledge about research through design as an epistemology and supporting methodology for design and policy research.

I will conclude this chapter by outlining how the research strategy was developed and applied. In particular, I turn attention to considering how the proposed research framework, as discussed in Chapter 3, was applied and how it informed the selection and development of each of the design projects.

4.4 Research Strategy for Studying Interaction

The research strategy discussed above defines a research problem as its starting point which involves exploring and responding to the

opportunities and challenges created by the interactive nature of policy instruments in the context of affordable housing policy. To address this, my research framework developed at the end of Chapter 3 summarises how the research problem — interaction in the context of policy making and design for policy instruments— is approached as the relationship between the state’s capacity to act and its understanding of need. My research framework also guides the selection, the scoping of the design questions and the practice which highlights the range of affordances examined through each of the design projects and the unique policy instrument circumstances which the design projects addressed. The design projects were guided by a design question which was subsequently transferred into a research question, with the intent of building knowledge through design about design and about policy making.

As I will discuss in more detail below, design project 1 assesses affordance to leverage an existing policy instrument infrastructure. Following from that, design project 2 explores instrument capabilities to leverage new forms of interaction and, consequently, to design new instruments for policy intervention. Finally, design project 3 explores poor instrument fit in the context of socially innovative forms of collaborative organisations and the governance implications arising from these policy interventions.

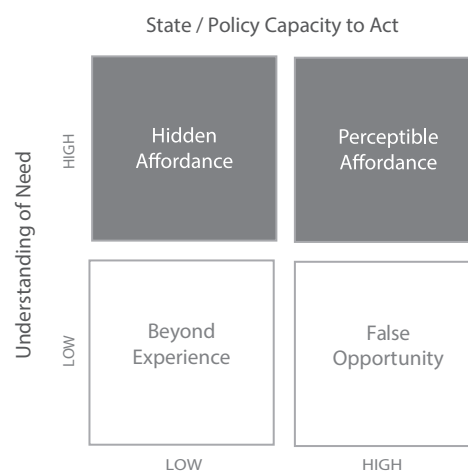


Figure 4.5
Research framework
application design
project 1.

4.4.1 Designing as leveraging policy instrument infrastructure: Mobility & liquidity in the low-cost homeownership sector

Design project 1 examines the first set of policy instruments developed to address the issue of housing affordability through low-cost homeownership. The overall design question for design project 1 involved understanding how to examine and design with perceived and hidden affordances within an existing policy instrument infrastructure (Figure 4.5). To support this, a focus was placed on the assessment of the benefits and the drawbacks of adopting an HCD and sensemaking perspective in order to approaching an existing policy instrument infrastructure as a design entity. It addresses the issue of policy misalignment and asks, as its research question, how an existing policy instrument infrastructure can be repurposed to deliver policy intent and increase housing mobility in the sector.

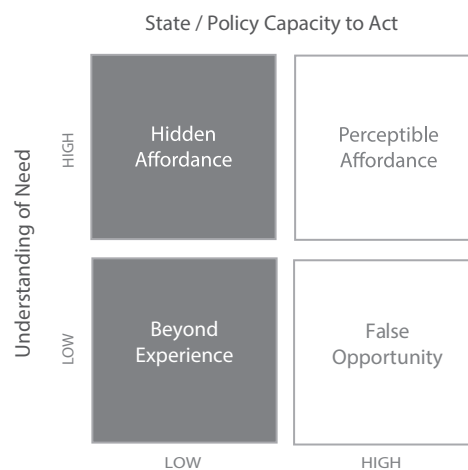


Figure 4.6
Research framework
application design
project 2.

4.4.2 Designing new policy instrument capabilities for rent regulation: The case of open data in the design for trust in the private rented sector

Design project 2 explored the PRS, a policy context where current state intervention fails to address the challenges of an inefficient housing market and the subsequent impact on the affordability of the PRS. Design project 2 works with hidden affordances and those beyond perception (Figure 4.6) to examine existing policy instruments and assess, as its research question, how to approach the design of new instrument capabilities and resources. It explores the application of open data to both the design for policy instruments and the implication

of the application of open data as a design resource within the design process. The design constructs of value co-creation and future forecasting are explored in detail to assess their contribution to the development of new policy instrument design capabilities.

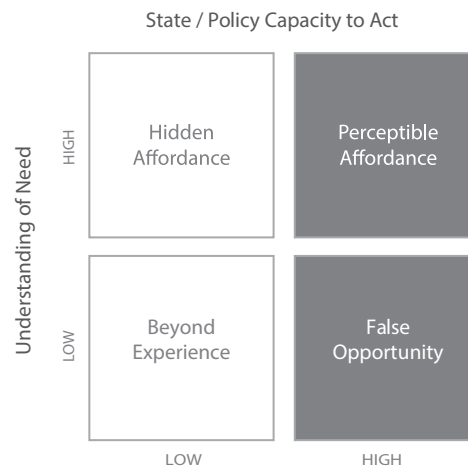


Figure 4.7
Research framework
application design
project 3.

4.4.3 Designing policy instrument infrastructure for networked governance: Maturing forms of social innovation in the community-led housing sector

Finally, design project 3 examines the question of increasing the affordable housing supply through social innovation and community-led housing models. It explored a policy instrument context where the state has a high capacity to act and a mixed understanding of need. Design project 3 worked with false and perceptible affordances (Figure 4.7) within an existing policy instrument infrastructure to assess and design alternatives to support a form of social innovation in reaching maturity and scale. Design project 3 asks the research question of how new organisational forms emerging from social innovation interact with the existing and new policy instrument infrastructure. It draws on design for social innovation and ongoing debates within design around collaborative organisations in order to examine the design and policy implications of working with interaction at a level of networked governance.

4.4.4 Design methods and tools

The design projects provided an opportunity to explore, as part of the design process, a range of design methods and design tools. Each of

the design projects developed a bespoke design strategy (which will be discussed in each of the chapters). They applied a range of design methods to explore, synthesise and create design solutions. Design methods and tools were also used throughout the data analysis stage of each of the design projects to facilitate discussion and to represent, as surrogates for the services (Holmid et al., 2016), the design outcomes produced. The design methods helped materialise the design process, the nature of interactions and the contexts in which the design projects sought to intervene. These included:

1. User observation, ethnography, interviews, co-creation and co-design sessions;
2. Development and use of design probes and other visual methods of data collection;
3. Use of design and systems design mapping tools (stakeholder mapping, feature mapping) for analysis and synthesis of data;
4. Service science and systems value network mapping for analysis and synthesis of data and development of design propositions; and
5. Prototyping, working with parallel worlds and live experimentation to develop, test and design propositions.

This was also followed by cycles of action and reflection, which were applied in each design project to collect and interpret data and to test and refine design solutions alongside project collaborators. Working in a cyclical fashion, at the end of each of the design projects, these reflections were refined to inform and frame the next set of 'design and research questions', their application to the policy instrument contexts examined and the design questions in the following design project. This included critiquing and refining design methods to suit action and reflection cycles, to build evidence for the design and for the purposes of the overall research objectives. The development of a self-reflective practice, following the completion of each of the design projects, offered opportunities to assess the contribution of the design interventions to the policy contexts the design projects worked with and, more widely, to the overall research problem.

4.4.5 Design project analysis and evaluation

Following the completion of each of the three design projects, a series of evaluation interviews was conducted. These interviews formed part of the reflection stage of the overall research strategy and supported the meta-analysis of findings to create new knowledge about design and policy making. A total of 36 evaluative interviews were undertaken, as per Table 4.1. Participants ranged from those who directly commissioned the projects to those who were involved in their delivery and development or who had expertise in the policy areas of intervention. The choice of interviewees was driven by two concerns. The first, the involvement of those directly affected by the design projects, helped assess and qualify the contribution of the design practice and the design methods to the areas of intervention. The second set of interviews was conducted with stakeholders who were not directly involved in the design projects but who had an active involvement in the sector under consideration by the design projects. By involving these participants, the interviews aimed to assess the impact of the design propositions to wider policy instrument design and to policy making and design. The results of these evaluative interviews will be discussed in detail in Chapter 8.

4.4.6 Final analysis of the research and the design questions

The final stage of the research strategy, once all design projects were completed, involved an extensive exercise of mapping and synthesising overall design outcomes and research answers. This included iterative processes of reflection and analysis to evaluate and assess the unique contribution of design for services and design for policy literature to the development of housing policy and policy instrument design. The aim of this stage was to explore how to generate learning about research through design and about design practice in the context of design for policy and design for policy instruments. By addressing the interdisciplinary nature of my thesis, it also assessed the extent to which the overall research findings were able to enhance policy instrument design capabilities and extend design as a research epistemology within the policy context. This involved:

Design Project 1	Design Project 2	Design Project 3
Senior Housing Association Manager (commissioned project)	GLA Senior Policy Officer (commissioned project)	Head of NCLTN (commissioned project)
Senior Housing Association Director	PRS Specialist and Senior Housing Studies Researcher from the London School of Economics	Technical Advisor and Community Led Housing Expert
Shared Ownership Housing Association Manager	GLA Policy Officer	Policy Researcher from the British Social Housing Foundation (BSHF) which represents the UN Habitat programme
GLA Senior Policy Officer	Social Impact Investor	Senior Officer for Social Investment Bank
Professor Specialist in Low-cost Home Ownership TU Delft	Representative and lobby organisation for landlords	Senior Investor for Social Investment Bank
Researcher into Housing TU Delft	Lobby organisation for landlords	CEO of small / medium sized Housing Association
Property DeveloperH	Head of Housing Allocation Strategy for a London borough	Housing Association Development Manager
Property DeveloperA	Assistant Head of Housing Strategy for London borough	Technical Advisor to Community led Housing Projects
Housing Innovator / Provider	Housing Allocations Manager for a London borough	Technical Advisor to Community-led Housing Projects
Housing Association Development Manager	Data controller for Greater London Authority	Social Impact Investor
Housing Association Head of Development	Researcher for Open Data Institute	Architect for Community Led Housing Projects
Head of Housing Strategy in a London borough	Senior Housing Consultant for International Accountancy Consultant	

Table 4.1 Research evaluation interviews.

1. Evidencing the impact (potential and actual) and outcome of design projects on the specific housing issues and the wider policy instrument design;
2. Measuring the impact of applying affordance to policy instrument design and policy making; and
3. Evaluating how and where design interventions were most impactful for policy making, for policy design and in the policy cycle.

To undertake this, I engaged in a number of distinct activities. The first involved the revision, reflection and reinterpretation of raw data, ongoing mapping, coding and pattern recognition of overall project findings. Second, the findings from the evaluation interviews and the analysis were re-examined against design and policy literature and were used to identify the contribution of the findings of my thesis to these debates. These findings will be discussed in detail in Chapter 9 and through each of the distinct design projects.

4.5 Summary

In this chapter, I explored the epistemological and methodological implications of conducting research through design. I discussed the epistemological foundations of design research and argued that design research is well placed to address the interdisciplinarity of my overall research question, the research aims and the research objectives of this thesis.

I situated my PhD as a research through design, which involves projective, cyclical, self-reflective and situated research, concerned with generating learning not only about design practice but also as a way of building knowledge about the world. As it was a nascent epistemology, I considered the methodological implications of conducting research through design and the contribution of action research to the development of my analysis and to research through design more generally. I drew on different research strategies, from touching on Findeli's Bremen model (2010) to cybernetics (Chow

& Jonas, 2008; Checkland & Howell, 1998) in order to develop my research strategy. My research strategy, in combining these models, consists of starting the research enquiry by a clear research problem definition, which is translated into design and research questions which are specific to each of the design projects. The research strategy involves cycles of action and reflection in each of the design projects as well as an overarching stage of analysis of the findings for the overall research question, aims and objectives. To systematise project selection and analysis, I examined the application of my research framework, developed in Chapter 3, which defines the choice criteria for the selection of design projects and the wider research questions and objectives I aim to address. I will now examine the distinct design interventions in each of the three design projects in detail.

5. Design Project 1

67. Asset-based welfare represents a move away from 'state managed social transfers [towards] individuals accept[ing] greater responsibility for their own welfare needs by investing in financial products and property assets.' (Doling & Ronald, 2009:p. 1).

This chapter explores the first UK policy effort and set of policy instruments designed to address the issue of housing affordability through low-cost homeownership. Its scope involved the design of policy instruments and a co-created service proposition developed in partnership with HAs tasked with joint policy delivery and implementation. Through design project 1, I examine how intermediate tenures — particularly shared ownership — as a set of policy instruments following a logic of asset-based welfare⁶⁷ delivery models are designed to provide access to low-cost homeownership. In its most basic function, shared ownership provides an example of a comprehensive set of policy instruments used to leverage an entry point within an existing system of interactions into the housing market. Since its implementation over 30 years ago, shared ownership has grown and now serves several target populations with very different needs. As I will demonstrate, policy misalignment and a lack of policy instrument fit means that shared ownership currently fails to deliver on its original policy goals. As such, design project 1 examines the ability of design to respond to the implications arising from a legacy of policy instruments in which policy drift is evident between purposes and outcomes. By examining the interactive nature of policy instruments from within the perspective of perceptible and hidden affordances, design project 1 explores how to address and design alternatives by responding to these challenges.

Following a description of the design practice and methods, I explore how an understanding of interaction in this context supports the analysis and evaluation of existing policy instruments. I also examine how design practice, through sensemaking and an HCD perspective, can not only design new policy instrument alternatives by co-creating

68. In the UK, since the late 1980s, three distinct forms of intermediate products have been delivered with a considerable degree of policy support: shared equity, shared ownership and intermediate rent products.

69. Tenure preference studies (Whitehead & Monk, 2010) compare different tenure attributes and highlight how intermediate tenures work by offering a different balance of incentives, costs, rights and duties around access and use. Useful metrics include comparing 'user costs' (Haffner, 2011) as the expenses and revenues associated with different tenures or 'bundle of rights' (Elsinga & Hoekstra, 2005), given risks and user costs of different distributions of rights packaged within these products. These are important, as they impact the extent to which these policy instruments are effective in delivering on the original policy intent and in how they compare to market offers. In the case of shared ownership, they provide an alternative to fully subsidised homes for rent, lowering the risk of public investment in housing by redistributing rights and distributing the expense of homeownership between the state, providers and those accessing it (Elsinga & Hoekstra, 2005:p. 85).

70. Historically, delivery has been heavily subsidised by national government grants and local planning

value but also can redefine policy outcomes and pathways within the context of low-cost homeownership. I will conclude by assessing the degree of automaticity in the proposed design solutions when approaching the design of policy instruments and housing solutions from a design and affordance perspective.

5.1 Introducing Shared Ownership

In Chapter 2, I discussed the evolving direction of recent welfare policy towards asset ownership and asset-based welfare. From a policy and welfare perspective, persistent low and declining levels of homeownership are problematic and effectively remove a part of the population from the benefits of such measures.

Since the 1980s, intermediate tenures⁶⁸ have been incrementally introduced to bridge increasing gaps in housing affordability levels (Monk & Whitehead, 2010). As a set of policy instruments, the tenures seek to address the issue of housing affordability by offering submarket housing for sale or rent.⁶⁹ Shared ownership is the most popular intermediate tenure in the UK and involves the part ownership of a home for which buyers raise a mortgage and a deposit. For the remainder of the property shares that are not owned, shared owners pay subsidised rent and service charges for the management and upkeep of communal areas. The original policy intention was to allow first-time buyers to incrementally buy a home, through a practice called staircasing, until the property could be owned outright. As a policy instrument, it delivers an affordable entry point into the housing market by partnering with HAs that underwrite the capital investment of buying a home alongside the shared owner.⁷⁰

Depending on welfare and policy priorities at national, city and local levels, shared ownership has been targeted to different demographics.⁷¹ Since the 2008 crisis, shared ownership has provided an affordable, low-cost homeownership solution to those across lower- and middle-income population segments, because it is a 'fill in the gap' option for many first-time buyers locked out of the housing market.⁷²

regulations.

71. Shared ownership was originally aimed at those in the lower end of the market to help key workers and social housing tenants enter the housing market.

72. In 2013, figures from Lloyds Bank suggested that 46% of first-time buyers were considering entering the housing market through this option.

73. Core benchmarking of satisfaction data is undertaken by Housemark on behalf of HAs and local authorities. This benchmarking shows that across the sector, the median level of overall satisfaction in general needs housing (i.e. those who are very or fairly satisfied) is significantly higher (85%) than it is for shared owners (62%; Benson, 2014).

74. Cambridge Centre for Housing & Planning Research (Clarke & Heywood, 2012) and Joseph Rowntree Foundation (Wallace, 2008) have highlighted issues in relation to long-term affordability of the product and the lack of mobility seen in the market. Wallace (2010) further suggests that although these homes are marketed as private market housing at affordable prices, they are managed as if they are social housing (p.32). Some of the concerns around subsidised homeownership also involve the balance of risk and debt taken on by owners. This is particularly the

As a policy instrument, shared ownership is just as much about meeting housing needs as it is about addressing people's aspirations. This creates policy implementation challenges, given the changing nature of needs experienced by different target groups. Despite its being designed to provide an affordable entry point into the housing market, there are well-documented issues with the long-term affordability and mobility of shared ownership (Wallace, 2008). Studies show a high proportion of shared owners are unable to reach full ownership as originally intended. Limited increases in earnings not proportionate to high house prices prohibit staircasing and make it unlikely the trend will be reversed. As a result, mobility levels are comparatively low, and fewer shared ownership units are sold in relation to the average number of properties sold in the open market.

In addition to low mobility and liquidity levels amongst shared ownership, there are several restrictions imposed nationally and by HAs on the use of these properties. Property leases (which are policy instruments) limit the ability to make improvements or to sublet homes, restricting shared owners' rights to earn an income from asset ownership. The result of these restrictions is in part reflected in the significant levels of dissatisfaction across the sector (which are also due to dissatisfaction over the quality of services provided by HAs).⁷³

From a policy instrument perspective, low levels of satisfaction and mobility coupled with long-term growth in the average house price compared to income ratios raise concerns about the sustainability of a policy intervention of this kind. This is especially the case in shared ownership, as it begins to take centre stage in the current government's affordable homeownership policy. The evidence to date⁷⁴ suggests shared ownership, as a set of policy instruments, leaves those intended to benefit from it at a disadvantage, exacerbating — instead of decreasing — the inequality it aims to address. The evidence also suggests a misalignment between policy implementation and intent, which is to the detriment of the target populations who have accessed it.⁷⁵

case with policy initiatives which provide a welfare good. It is feared that as people are encouraged onto the housing ladder, they take on personal risk and debt that could result in greater social exclusion rather than in less asset poverty (Jarvis, 2008:p. 229).

75. Ignoring short-term volatilities, for 50 years, the average ratio in any decade remained in a relatively narrow band of roughly four and half to five and a half. However, in the 2000s, this rose to around seven nationally and to over ten in London (NHF, 2014).

5.2 Designing for Legacy Instruments

Following the research framework, design project 1 focuses on exploring the contribution of design practice and research in examining a legacy system of existing policy instrument infrastructure in which policy drift and misalignment cause detriment to target populations (Figure 5.1). It examines interaction within a context in which the state has a high understanding of need and a capacity to act, seeking to uncover both perceived and hidden affordances to address issues outlined above. It critically assesses the policy fit of a set of policy instruments, such as shared ownership, using HCD and sensemaking to enhance the state’s capacity to act and understand need. Following the research through the design concept and the action research methodology described in Section 4.5.3 (Chapter 4: p.132), I describe the distinct methods and action taken as part of the design practice in design project 1. I then consider reflections on the contribution of design practice to the design for policy instruments and my wider research objectives.

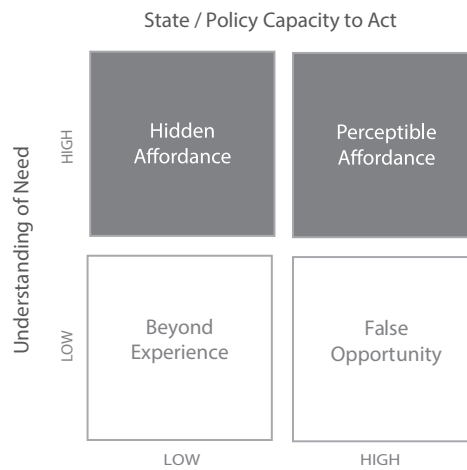


Figure 5.1 Research framework application design project 1.

5.2.1 Action: Mobility within shared ownership

Design project 1 was delivered in two phases, as outlined in Figure 5.2. The first phase involved working with one of London’s largest HAs at the forefront of bringing shared ownership to market, and it lasted six months, from December 2012 to June 2013. The second phase was part of a larger commission by a consortium of six HAs from south-east England, a seconded member of London’s Mayor office and the National Housing Federation, lasting from December 2013

to April 2014. It formed part of a wider industry-led study, including quantitative research into sector performance. In both instances, design research was undertaken by a team of designers, of which I was the lead facilitator and designer of idea concepts and designs, which were developed as part of the project.

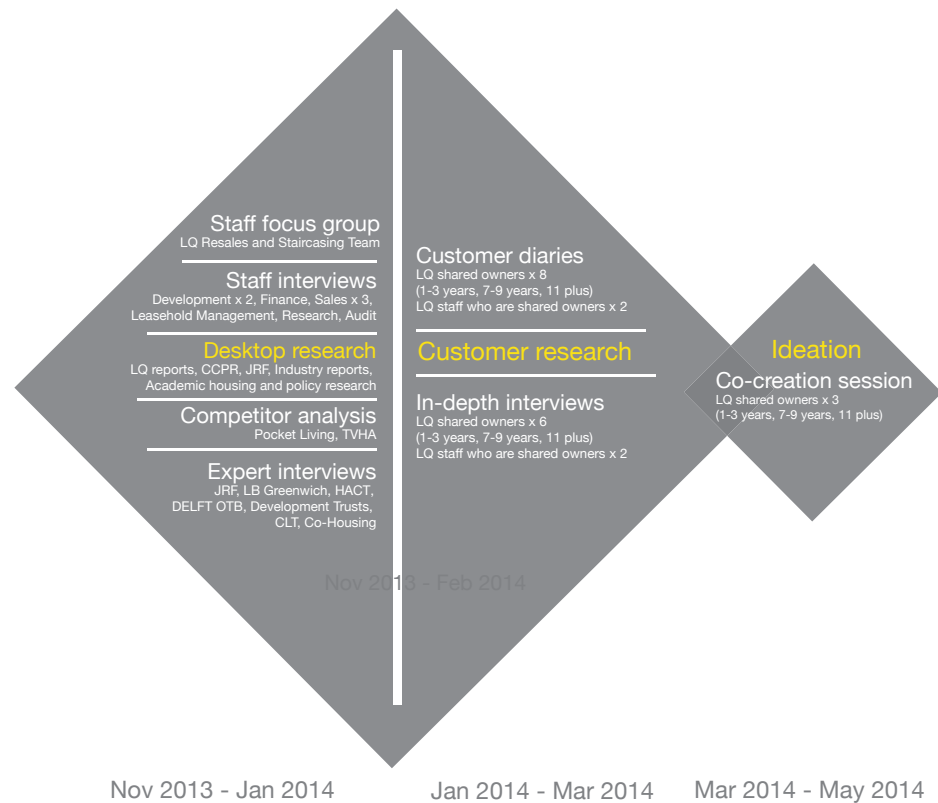


Figure 5.2
Design project 1 research plan.

The design brief involved examining how to increase staircasing, satisfaction and mobility within shared ownership. The first phase explored in detail mental models of the home, tenure, asset accumulation and the participants’ experiences of shared ownership as a policy instrument. From the outset, it involved a visit to Delft University’s Faculty of the Built Environment (OTB) to examine the housing policy implications of the research. As shared ownership is a service accessed over time, the tracking of changes in shared owner perception across time was invaluable to generate insights about changes to different stages of the service experience. To assess comparative changes in shared owners’ perceptions over time,

participants were divided into three distinct groups according to the length of their tenure: 1–3 years, 5–7 years and 11 or more years.

An array of design tools, methods and design probes was applied to the research. They included mobile ethnography, in which 15 participants catalogued their relationships to their homes and their tenures more generally. User journey mapping and parallel world exercises (across a range of touchpoints) provided a rich and comprehensive understanding of shared owners' expectations, motivations and needs in relation to shared ownership and how these changed over time.

A significant portion of design project 1 also involved exploring the experience of these instruments from an organisational perspective. This included examining shared ownership as a policy instrument, including the barriers, the constraints and the challenges created for organisations and the mental models they had of themselves and the target populations they served. To do so, design research involved 12 interviews with staff, developers and local and regional government officials both to explore the staff's own experience of delivering services and their views of shared owner expectations and to map operational and market constraints and value creation opportunities. As part of the first phase of design project 1, I designed and ideated material for three co-creation sessions: two with shared owners and one with staff. In total, 31 shared owners and a further 12 members of staff attended. The brief for these sessions was to develop idea concepts to improve shared owner mobility through a series of design provocations I developed to explore future shared ownership features and service interventions. As part of these sessions, low-fidelity prototypes (which I designed and which the commissioning manager validated) were used to test and develop three distinctive idea concepts and policy instrument options.

The second phase of design project 1 involved four in-depth co-creation sessions with a total of 39 shared owners, which continued to track differences of shared owner expectations over time. The sessions used design probes to delve deeper into considerations about

the meaning of a home, restrictions on the sales process, how their expectations changed over time and the impact of dissatisfaction on shared owners' personal circumstances. The sessions used and extended the initial idea concepts from the first phase of the project. The co-creation sessions were an opportunity to jointly ideate and assess, alongside participants, (a) idea concepts emerging from the first phase of design project 1, (b) service options emerging from the quantitative analysis that accompanied the design research and (c) a series of random features found in different service models. These sessions were developed using low-fidelity prototyping and validation to help refine solutions and to propose new policy instruments and operational interventions after analysis. Some of the idea concepts from the quantitative research were also costed by housing association providers and policy experts in advance of the sessions, the results of which were presented to participants attending the sessions.

The final phase involved analysis and triangulation of data, which highlighted trends from design insights. Traditional qualitative research analysis was conducted alongside a comprehensive examination of recorded responses from each of the design probes and the interview material. Results were coded to help understand the evolution of shared owners' experiences over time, including the similarities or differences of opinions regarding the socioeconomic circumstances of different target audiences. Following that, results were synthesised, framed and grouped to summarise and distinguish distinct trends and patterns emerging from the analysis, using a series of design analysis tools, such as visualisation and mapping.

In Section 5.4, I discuss in greater detail the outcome of design project 1. Suffice it to say, to ensure the relevance of the design interventions from a policy and operational perspective, the commercial viability and the legal and financial implications for implementation were considered throughout. Two reports, one for each phase of the project, combined design research results alongside quantitative analysis for dissemination across the sector and for wider policy recommendations.

5.3 Reflection & Learning for Policy Instrument Design

The analysis that follows highlights key insights generated from design practice and research activity about interaction, such as affordance, viewed from both an HCD and a systemic design perspective. It examines some of the key housing policy instruments used for the delivery of shared ownership and how perceived and hidden affordances within a legacy of policy instruments shape behaviours at a human and systemic scale and can be explored for future value co-creation.

5.3.1 Learning 1: Delivery at cross purposes

Results revealed that shared ownership as a policy instrument acts to support entry into the housing market as an affordable product. As a set of policy instruments, shared ownership is more apt at leveraging entry into the housing market than the original policy aim of sustained long-term, affordable, low-cost homeownership.

This lack of clarity surrounding the intent of the shared ownership policy is in part the result of its use to address a range of problems and act as a 'silver bullet' (Chapter 3: p.77) in the delivery of affordable housing across different national, regional and local levels of government. From an organisational perspective, this means that HAS did not fully appreciate shared owners' motivations, and as a result, these owners' motivations were not reflected in the overall offer and business plan assumptions underpinning delivery.

The mismatch between the original policy intent in the current economic context it operates in and the policy ecosystem used to implement it meant that for shared owners, their main issue was about mobility into and out of the tenure rather than a continued increase in shares owned.

5.3.2 Learning 2: Resources and organisational automaticity

From a public subsidy perspective, shared ownership historically has

benefited from high government subsidy levels. Despite its increasing popularity as a policy instrument, recent levels of government subsidy have substantially decreased, leading HAs to concentrate the development of new shared ownership homes in higher-value areas to cross-subsidise and reduce development risks. This focus, however, has had a significant impact on decreasing overall affordability levels — both immediate and long-term.

Policy instruments regulate eligibility by imposing income caps and other restrictions at national, regional and local levels to target access to those accessing new shared ownership homes. These restrictions, however, are mismatched across national and local government policy and are not sensitive to market conditions and housing prices at local levels. As a result, conflicting local and national policy priorities negatively impact eligibility and debt levels taken on by shared owners who qualify. This practice also impacts shared owners' risk profiles for the financial institutions lending to the market, increasing the premiums and reducing choices available to shared owners. Overall, shared ownership as a set of policy instruments, originally aimed at maximising public value and containing benefits to a specific population, in the end, has a detrimental impact on individuals and on the overall affordability of the product.

5.3.3 Learning 3: Shared ownership as a stepping stone

From the perspective of wider adoption by target groups and delivery stakeholders within the policy ecosystem, the findings reveal that shared ownership serves several different and often competing functions (Figure 5.2). In the case of HAs, shared ownership assists in meeting local government requirements for the delivery of affordable housing, but an 'unspoken' requirement to obtain local planning permission for new developments effectively acts as a tax on any form of new development.

For national, regional and local governments, shared ownership as a policy intervention counterbalances the reduction in public subsidy and investment in social housing. It supports a model of welfare

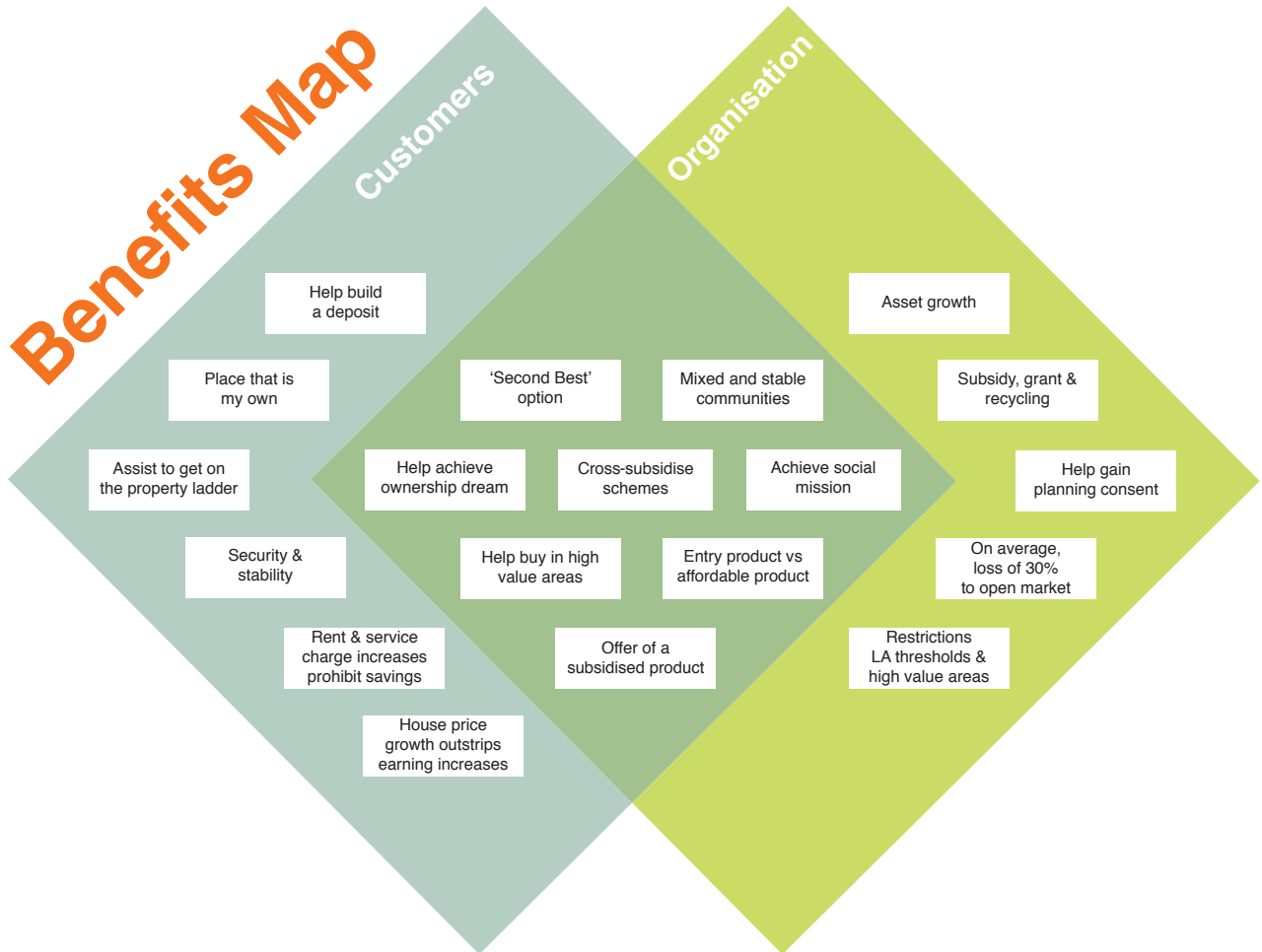


Figure 5.3 Shared ownership benefits map.

delivery in which costs and risks for welfare are shared by different levels of government, by HAs that bear the risk of house building and development and by shared owners who contribute to both the ongoing maintenance and capital costs of financing new homes.

For shared owners, it provides security of tenure, an investment opportunity and an entry point into the housing market. As we saw, the target populations for which shared ownership were originally designed are no longer able to financially afford it. The high cost of housing sees shared ownership addressing demands from first-time buyers locked out of the housing market. These locked-out buyers are comprised of a significantly different socioeconomic group and have a different set of expectations and needs than those for whom shared ownership was originally designed. For them, shared ownership allows entry into the housing market and allows them to save up for a deposit. Those with a more established financial situation can use shared ownership as an opportunity to purchase in a high-value area that they otherwise would not be able to afford.

In principle, income caps used to restrict and target access appear to be beneficial. However, the high cost of land and the low percentage of shares bought on entry reveal that a majority of shared owners retain their originally purchased share and are unable to staircase once or into full ownership. In addition to income levels not accompanying house price growth, shared owners are liable for rent and service charge payments that tend to increase on a yearly basis.

Throughout both phases of design project 1, shared owners reported that the balance between their costs, rights and responsibilities was not entirely proportional and acted as a major disincentive to investing in additional shares. This balance was further complicated by the fact that shared ownership targets young professionals whose circumstances are likely to change if they opt for a family. Overcrowding is common, and as shared owners become unable to move and their shares fail to provide sufficient liquidity to purchase a larger home in the open market, many return to the private rental

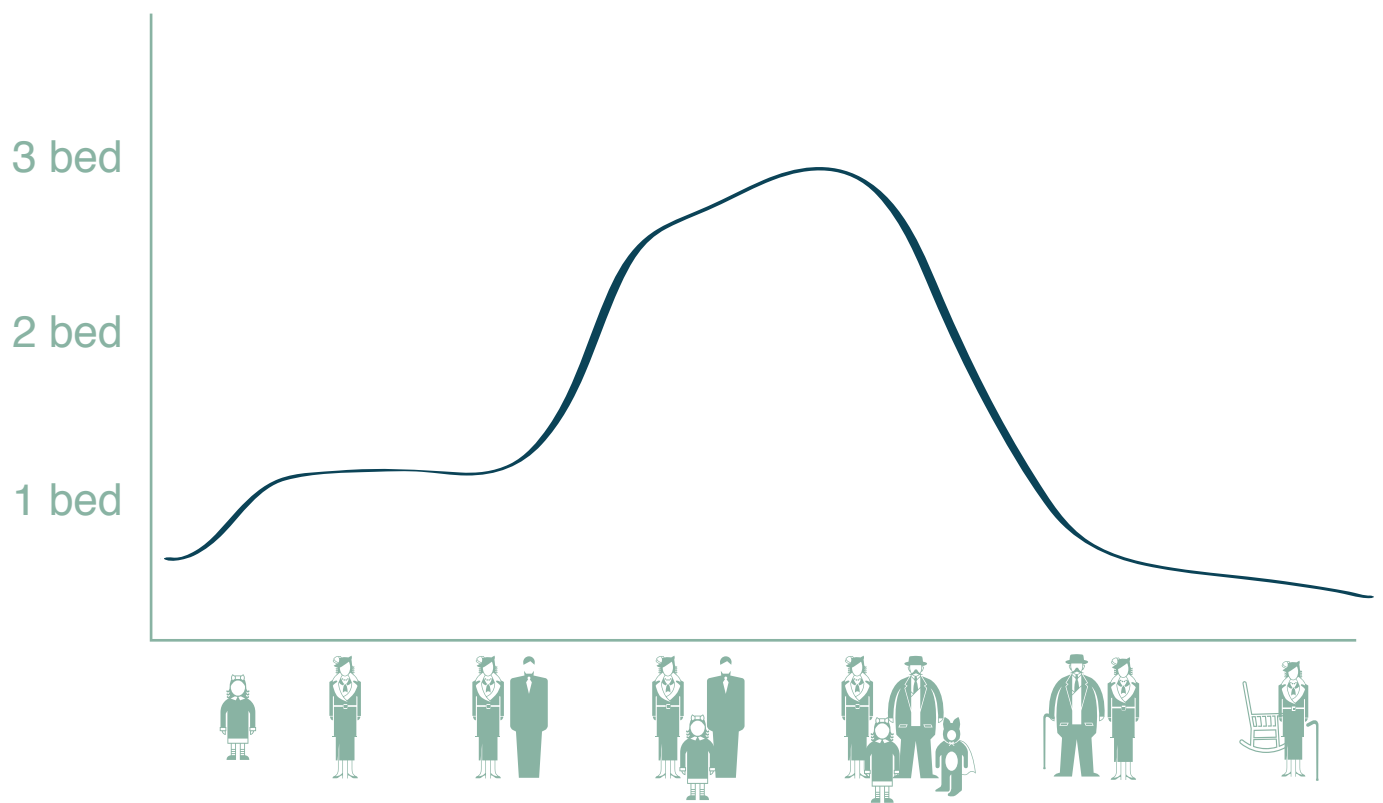


Figure 5.4 Shared ownership beneficiary lifecycle.

market, which offers little stability or affordability and which shared ownership was designed to address (Figure 5.3).

Contrary to the policy assumption of supporting full ownership, a high number of shared owners facing a situation of constrained resources indicated that being a shared owner for life was not an issue. The primary benefit of owning a home for them involved security of tenure and the ability to exercise more choice compared to alternatives in the PRS.

The research reveals that shared ownership, as a set of policy instruments, is effectively creating a policy problem. Although shared ownership as a set of policy instruments can leverage an entry point into the housing market, it creates a situation in which owners are stuck once they access it. A lack of alternatives and support available to those who find themselves in these circumstances highlights the need to design much clearer routes into and out of shared ownership and to design a system of services to support these transitions and pathways.

5.3.4 Learning 4: Mobility, low liquidity and public value

From the perspective of policy instrument resources and how these generate wider public value, findings reveal how public investment is potentially devalued by operational and market practices found within the wider sector. Poor liquidity experienced by shared owners acted as a major disincentive for them to invest in their homes and, more widely, to attract demand for future shared ownership homes, thereby increasing the scale and overall sustainability of shared ownership as a policy and as a sector commercially.

Furthermore, although HAs commercially market and sell homes, they do not do the same for staircasing and resales, which are far less resourced and are treated less commercially even though HAs generate margins from these transactions. For example, the organisations and the housing sector refer to shared ownership homes for resale as second-hand homes. This is not a practice seen in the private sector, and from a public value perspective, it diminishes the value of these

assets to both shared owners and the HAs. As such, public and housing association resources poorly leverage asset values for their and shared owners' benefits, diminishing the value and resilience of the sector in sustaining future investment and asset appreciation.

Shared ownership as a set of policy instruments is set around a developer-led model that views the delivery of affordable homes and welfare in a linear fashion. In its current form, this developer-led model is designed as a slot machine — input resources and finances via HAs to produce affordable units as outputs. This developer-led model benefits housing providers and volume builders through a series of policy instruments designed to de-risk the process for these stakeholders and the state. It is designed primarily with the intent of selling homes instead of achieving housing affordability for those in need and is reflective of a developer-led model heavily tilted towards increasing supply and satisfying volume builders instead of fostering long-term housing affordability.

As the results demonstrate, instruments are designed on the unchallenged premise that full homeownership, at any cost, is the only way to fulfil popular aspiration for the security of having a home. It also fundamentally ignores the fact that shared owners take on the largest amount of risk and play a significant role in generating further public value by increasing shared owner liquidity and the wider benefits generated from their and the government's investment.

5.4 Design Project 1 Outcomes: Designing Pathways

The outcomes of design project 1 involved a mix of policy instruments and design options, and its development included creating alternate pathways into and out of tenure, increasing shared owners' financial literacy and providing greater transparency about offers. All solutions were designed with the assumption of a 25% ownership share. Three of the design options are detailed below.

1. Diversify the production and supply of homes by enabling shared owners to use existing assets to purchase properties

better suited to their needs and mobility pathways in the open market. The central premise underpinning these solutions was an intention to create a secondary market for low-cost homeownership products. Do-it-yourself shared ownership would enable existing shared owners to use their initially purchased share as a deposit to buy a house in the open market. HAs would buy the home in part with shared owners and could use this as an opportunity to increase supply through direct acquisition of housing units, offsetting the high land and building costs of development. The idea concepts led to a proposed model of shared ownership not linked to a property but rather to a membership plan that could be carried by the shared owner to different properties and would support the creation of a more diffuse network of stakeholders involved in the direct delivery of affordable housing.

2. Encourage active consumption by empowering shared owners with information about asset ownership and how to maximise investment and benefits derived from it. The simple, visual design tools would help users engage with complex information about their assets and build financial literacy. It would include a series of features to help owners visualise asset accumulation, understand the effects of house prices on their own shares and develop financial understanding of the cost of acquiring more shares.

3. Develop a series of service offers and payment options to spread risks and user costs over the lifetime of shared ownership, making the offer more affordable and linking it with other government subsidies. Solutions include: regular product reviews and payment plans to rebalance costs of staircasing between shared owners and HAs; a repair service offset by rent increases for those struggling to budget to cover housing association costs associated with delivering the service; the option of fixing rents and service charges for a set period to support residents in planning and budgeting staircasing and saving; a bolt on insurance offers in which HAs offer coverage against repair costs for an annual insurance fee; and the option to revert shared ownership to a social rented tenancy, reselling part of part of the shared owner's share.

Given the findings from design project 1, the solutions developed as part of the project sought to explore ways in which policy instruments could address these challenges to increase liquidity for shared owners and opportunities for co-creating public value. The design solutions aimed at tilting the prism of development away from the goal of full ownership and towards mobility, finding opportunities to open and distribute the value chains. It encourages value co-creation in asset growth through more effective alignments between shared owners, the government, HAs and others engaged in this wider ecosystem to generate value and co-deliver the outcome of housing affordability. A key judgement criterion for evaluating the evidence and subsequent design options was whether the solutions were able to use both hidden and perceived affordances to develop new policy instruments or to repurpose existing policy instruments to scale and to effect change.

5.5 Reflections on Design for Policy Instruments

There are several key reflections that emerge from the design practice and subsequent analysis of outcomes and that have implications for future design practice and research. They broadly relate to design practice at a meso level of policy making in which policy instruments are located, as I discussed in Chapter 3, and to the systemic ramifications of operating at this level. However, as I will discuss, the reflections are not confined to thinking at a systemic level — they also reflect the challenges of prioritising user needs in a policy context.

5.5.1 Is the user always right?

Design project 1 highlights the challenge of building understanding from an HCD perspective and drawing clear distinctions between user needs and wants. This is particularly significant in the context of policy instruments, as the eligibility criteria in the case of shared ownership demonstrate. It raises the interesting challenge of prioritising someone's wants over the needs of others. It is not just an issue of prioritisation but also of whether the users and their wants and needs (as individuals or constructs thereof) are invariably always 'right'. The research highlights how understanding user needs, wants and pain

points does not automatically translate into good policy decisions but is nonetheless reflective of a range of policy, operational and systemic factors.

A key research finding from design project 1 is the realisation of the need to mitigate these challenges by adopting more systemic, second-order understanding methods to accompany HCD practices. This not only involves the ability to visualise cause and effect and the impact on service systems but also the uncovering of patterns of interaction with policy instruments and the design opportunities in response to them.

5.5.2 Sensemaking at a systemic level

From a policy instrument optimisation perspective, the mismatch between HAs' business models and policy instruments and their original policy intent of delivering affordable housing point towards the need to re-examine patterns of interaction. They highlight how a counter-intuitive behaviour and the effects of time lags shape outcomes and dynamics of interaction amongst different stakeholders within systems (Gharajedaghi, 2011:p.49). The design challenge of working with perceived and hidden affordances was to find opportunities for value alignment across different stakeholders and the wider policy intent. Most importantly, however, it was about having the functional ability from a policy instrument perspective to find and design instrument levers that could bring solutions and services to life. From a design perspective, understanding the behaviour of the ecosystem was the first step in identifying leverage points and creating strategies to change ecosystem behaviour (Banerjee, 2014:p.78).

The idea of organisational and systemic multidimensionality in which opposing tendencies coexist, interact and form complementary relationships is addressed in both the systems by aligning and synchronising the goals, practices, perspectives and values of the services system and its environment. These alignments were sought at the level of products and services but most importantly, from the perspective of repurposing policy instruments to also ensure automaticity in the speed at which perceived and hidden affordances

can be implemented.

5.6 Summary of Findings from Design Project 1

The combination of HCD and sensemaking approaches to systems analysis enabled a more effective design response to address the diverse stakeholder needs and the opportunities identified by a design-led approach to research and collaborative innovation. This is substantially different from the silver bullet approach, in which opportunities from working with affordances and understanding at HCD and systemic design helped appraise the effects of systemic interaction and for policy instruments to be repurposed to that effect. It also raises more fundamental questions about policy diagnosis and definitions. Working in this way challenged pre-existing constructs of affordability in the context of homeownership and housing policy, helping make definitions less rigid and allowing for different paths through which this policy outcome could be achieved.

5.6.1 Designing policy pathways and levers for recalibration

Design project 1 demonstrates how designing for affordability is achieved by complementary structures and processes that afford citizens with choice, moving beyond producing alignment within services and towards alignment amongst systems and networks. Although design project 1 did look at making existing services and policy frameworks more efficient and accessible, this was not the main outcome from the research. Instead, it identified levers within existing policy instruments and governance mechanisms to recalibrate and set new directions for policy delivery. A key research finding is how the design of pathways, using perceived and hidden affordances, opened policy instrument options for achieving policy intent. It uncovers affordances within the system of housing provision to identify and subsequently design for a series of opportunities for system intervention, to increase the capacity of the state to act in direct response to both shared owners and HAs as integral dimensions of policy instrument design.

The aim of design project 1 was not to provide a definitive collection of policy solutions to the problem of housing affordability but rather to review and redesign a set of policy instruments to create multiple pathways and opportunities for 'system acupuncture [which could] together have a disproportionate integrative effect' (Banarjee, 2014:p.83). Whether reframing selection criteria or reassessing shared owner financial circumstances, working in this way would support incremental changes to key pressure points without undertaking a system-wide redesign. From this perspective, policy instruments act not only as levers by which to make use of perceived and hidden affordances but also as pathways to develop further capacity for action rather than to deliver a finite policy solution.

Value co-creation helped to find ways to identify leverage points for system acupuncture that would support individual users, housing providers and policy makers. It was particularly useful as a way of examining how to increase supply without an over-reliance on government grants and without a developer-led model. It highlights the resilience and reliance on current systems of interaction by co-creating value given the availability of public resources and the liquidity of public assets in which the government, HAs and shared owners had collectively invested.

Although the design solutions and subsequent policy instrument designs were able to find alignment and a business case for delivery, the findings from design project 1 highlight how the mistrust amongst users accessing these options might prove to be a significant barrier. The results from both phases of research highlight the issue of trust in design interventions working with a redesign of policy and with innovation through affordances. The results also raise the question of which design principles can be applied to achieve this. The legacy of existing policy instruments and governance arrangements hampered design for trust. These are key areas of interest, which were taken and explored in design project 2. They raise questions about how to address conflicting priorities in the context of designing new policy instruments in which there is little or no track record or legacy of

policy delivery.

5.6.2 Design for policy making at a meso level

Design project 1 findings demonstrate how gaps identified in Chapter 3 were addressed to extend design practice and research at a meso level of policy making. Design project 1 worked directly with policy instrumentation and the mechanics of government to propose the redesign of service processes and experiences and to assess and devise solutions with direct consequences to the policy means and goals chosen to address the issue of affordable housing. To do so, design project 1 moved beyond traditional service design methods and processes and worked with perceived and hidden affordances and systems design to assess, design and validate leverage points within existing policy instrument infrastructure and in line with existing user expectations.

In relation to working from an HCD perspective, design project 1 illustrates how design practice might begin to address challenges regarding the users' perspective taking precedence in policy decision design and decision making — in other words, of users 'being always right' (Chapter 3). The findings demonstrate the tensions of working with user needs and wants and that design practice in this context should widen considerations beyond an immediate end user to the stakeholders involved in indirectly benefiting or implementing policies and their instruments. In the case of design project 1, a key finding involves working from the perspective of more than one end user (e.g., shared owners, HAs) in addition to taking an HCD perspective of considering a range of stakeholders in relation to each other.

In addition, a combination of design methods and quantitative research findings was used in design project 1 by both commissioning bodies to validate idea concepts and cost them to build evidence and a business case for change. The findings show the tensions of design practice in problem solving and diagnosing policy problems (Chapter 3: p.66) while working between and across micro, meso and macro levels, developing a conversation between these levels and building evidence

layer by layer. An example of these tensions involves the finding that shared ownership for life, and not full homeownership, is preferable as a policy outcome from the perspective of beneficiaries. This challenges current policy goals, opening opportunities to reassess existing subsidy structures for future policy investment.

To conclude, this chapter examined a policy instrument infrastructure for addressing affordability in homeownership that has been in operation for over 30 years. Shared ownership is one of the first sets of policy instruments designed to address housing affordability in the context of low-cost homeownership. I examined how this fact presented a legacy challenge and a set of constraints to designing with systemic levels of interaction while maintaining an HCD focus. I also examined how to explore leverage points by working with perceived and hidden affordances and the opportunities contained within existing policy instrument infrastructure. Through design project 1, I examined the degree of automaticity the design propositions were able to deliver when approaching the design of policy instruments from a design perspective. Design project 1 solutions sought to create pathways and to create leverage points within an existing legacy policy instrument infrastructure to provide a range of solutions to increase mobility and liquidity of assets and public value. Results from design project 1 also indicate that approaching the design of instruments as pathways can increase resilience and reliance on existing and new instrument ecosystems. The issue of trust, both within existing and new areas for policy intervention, emerges as a significant area for future research, which will be explored as part of design project 2.

6. Design Project 2

In design project 2, which I explore in this chapter, I turn attention to an area of housing policy in which the problem of affordability is most acute and in which recent public efforts to intervene have been limited by the state's capacity to act. The PRS, despite recently becoming the UK's second biggest tenure, is characterised by a highly deregulated market. There is a poor legacy of state intervention, which is reliant on direct regulation and transactional legal instruments and is therefore lacking in instrument alternatives. Following a logic of asset-based welfare, historically, the PRS has been considered as a stepping stone into homeownership. Design project 2 takes as its point of departure well-documented limitations (Haffner & van der Heijden, 2000) of regulatory instruments in tackling the challenges in the PRS. Regulatory approaches, from the perspective of interaction, are symptomatic of top-down forms of state intervention. From an implementation standpoint, they are resource-intensive, requiring extensive organisational capacity to produce successful policy outcomes.

Through design project 2, I illustrate how design can produce alternatives to regulation that bring to light a different order of regulatory capability that can drive transparency in market practices to address issues of affordability in this highly deregulated market. I examine the ability of design to support policy instrument innovation and experimentation where the state seemingly has a limited capacity to act.

Key to the analysis and design proposition is the application of open data as both a design and a policy instrument resource. I will discuss how the application of open data helps to develop design

capabilities, increases public value, legitimises policy intervention capabilities for social change and ultimately supports design for trust. The findings from my analysis of design project 1 (Chapter 5) highlighted that despite opportunities afforded by a legacy of policy instrument infrastructure, trust was a key barrier in existing or new policy instruments and their adoption, by both beneficiaries and the wider ecosystem of stakeholders. In this chapter, I explore how the design of trust might be addressed in relation to the intrusiveness and legitimacy of instruments. The analysis in the previous chapter also pointed towards the potential of shared and distributed networks for policy delivery through mixed consumption and production models for addressing these shortcomings, which will be developed through design project 2.

Whereas design project 1 examines the contribution of understanding interaction to calibrate policy instrument infrastructure, design project 2 applies affordance to assess the ability to forecast and to design new instruments and forms of intervention. Working with interaction, understood in this case as hidden affordances and those beyond perception, I explore how this supports innovation while grounding design practice in policy outcomes. I consider the perspective of value co-creation to materialise new leverage points for policy intervention. I examine how the design of new instruments can produce not only new instruments and new approaches to regulation but also new types of interaction, crafting new alignments of value in complex interplays of power and balances of demand and supply. I conclude by discussing how the outcome of design project 2 extends the role of design beyond making policy implementation more user-friendly and accessible and towards designing new diffuse and collaborative mechanisms for policy instrument design and delivery (Hartley, 2005; Bunt & Christiansen, 2014).

6.1 The PRS as Housing Policy's Wicked Problem

In the UK, until the 1988 Housing Act, the PRS was a tightly regulated market in which legislation stipulated rent levels and the length of

76. Contractual agreements—in the form of assured shorthold tenancies or fixed contracts—set expected quality standards of accommodation and ensure a minimum six months of security of tenure to any tenant renting in the PRS. The 2004 Housing Act subsequently attempted to address issues of quality by insisting on selective licensing, deposit schemes and controls over houses in multiple occupation.

77. In cities like London, this is particularly acute, because the size of the sector has more than doubled since 1991 (Mace et al., 2014:p. 11).

78. Analysis done by the Cambridge Centre for Housing and Planning Research shows that in London, the median rent was £1,500 for a three-bedroom, with enormous variation (up to a factor of six) across the city. In London, the private rented market is a reality for 839,000 households (ONS, 2013), a number likely to grow as house prices increase (Mace et al., 2014).

79. Recent figures suggest that in London, more than a quarter of tenants renting spend more than half their income on rents (Alakeson & Gardiner, 2014; Clarke, 2016). The figure of housing benefit claimants who rent privately is 250,000, which is almost a quarter of all those living in the private rented sector

tenancies. These tight restrictions meant that the PRS offered low return rates and poor investment options to landlords (Haffner et al., 2009). The net effect saw landlords seize every opportunity to exit the market (Kemp, 2004; Rhodes, 2015), resulting in an effective reduction in supply (Haffner et al., 2009).

The 1988 Housing Act removed all regulation over rents and shifted regulatory responsibilities towards the individual transactions occurring between tenants and landlords by introducing contractual agreements between landlords and tenants. The Act also removed any form of rent control, where rent could now be set freely according to market demand and tenants' ability to pay.⁷⁶ Contractual agreements became the principal means and mechanism to protect tenants' rights and ensure the quality of accommodation in the sector.

From a design standpoint, individual tenancy agreement contracts became the principal interface to guide and shape the terms of interaction between tenants and landlords. From a policy perspective, the contracts became, although in an extremely fragmented way, the principle interface for governments to regulate practices in the sector.

The PRS has increased exponentially in the UK. From 1991 to 2001, the number of households in the sector rose by 27%, and the number of people renting increased by 44% (Ball, 2004:p.10).⁷⁷ Recent figures from the Office of National Statistics suggest that renters in London spend on average 49% of their income on rents, compared to the national average of 27% (2017). Average private rents have risen more quickly than average earnings in the last five years, worsening affordability for renters.⁷⁸

A high demand for properties drives rent prices up, which pushes tenants into overcommitting on rents and compromising on the quality of the property at high personal cost to tenants and their families (Alakeson & Gardiner, 2014). These costs further exacerbate the challenges of affordability in the PRS as a housing alternative.⁷⁹ The speculative nature of the PRS and the surge in demand have wide-

(Wilson, 2018).

80. Recent figures suggest that in London, where the situation is most severe, many coping strategies (such as working more, lowering standards, doubling up and relying on family) are insufficient in helping tenants meet housing costs in the sector (Alakeson & Gardiner, 2014). The speculative nature of the PRS market and the surge in demand has a wide-ranging social impact on tenants' health and well-being and levels of child poverty (Social Mobility and Child Poverty Commission, 2014). Shelter (2012) reported that one in ten tenants have to move children from schools as a result of a change in tenancy.

81. As provided by the Office of Budget Responsibility, Available from: <http://obr.uk/forecasts-in-depth/tax-by-tax-spend-by-spend/welfare-spending-housing-benefit/>

82. Many landlords are averse to rent controls or other tightening of legislation around pricing 'not just because they could reduce their rental incomes, but also because they resented the intrusion into what they saw as a market-based transaction.' (Clarke et al., 2015).

83. The average void times in London are 21 days per year (ARLA, 2017), potentially costing the sector £74.5 million per year in lost rental income.

ranging impact on tenants' health and well-being and on levels of child poverty (Social Mobility and Child Poverty Commission, 2014; Shelter, 2012).⁸⁰ In areas where demand is most acute, there are concerns over the impact of a lack of affordability on national economic productivity (CBI, 2013) regarding delays to family formation (Doling, 2012) and over the costs of £21.9 billion to the Department of Work and Pensions for 2017–2018⁸¹ on welfare payments.

A major contributing factor to the high cost of rents are voids, partly as a result of the speculative nature of letting practices in the PRS. The majority of landlords are represented by letting agents, who set prices and advise on the terms of tenancy contracts, with business models based on generating high margins from speculative prices and a high turnover of tenancies.⁸² This in turn increases landlords' risk of arrears and voids.⁸³

To complicate matters, policy makers have limited data available regarding the landlords who operate in this sector or the quality of properties on offer. The most comprehensive report on the nature of the market was produced by the Department of Communities and Local Government in 2010. The report highlights the extent to which the sector is highly fragmented.⁸⁴ This fragmentation creates a unique challenge not only for intervention in such a fragmented market but also for the capacity to accurately diagnose policy problems and evaluate instrument choices. This is problematic from a policy perspective, particularly a policy instrument design perspective.

6.1.1 Implications for policy instrument design

Regulating rents, practices and standards in such a fragmented market is costly and limits the capacity of governments to intervene. Coupled with strong resistance from landlords and the increasing attractiveness of real estate investment as an alternative to pension funds, this fragmentation further exacerbates successive governments' reluctance to intervene in this market.

The PRS, from a policy making and instrument design perspective,

presents a complex system for state intervention, given the volume of providers, its fragmented nature and its characteristics as a cottage industry.⁸⁵ Regulating such a fragmented market is costly, given that traditional policy instruments limit the capacity for policy implementation and potential innovation. Strong resistance from landlords to government intervention, mounting public pressure, surges in demand — as tenants become increasingly priced out of homeownership (Ronald & Elsinga, 2012) — and a lack of social housing alternatives, if seen from a design perspective, create for policy makers a ‘wicked problem’ (Rittel & Webber, 1973). It is this complexity of competing interests and imbalances in supply and demand that design project 2 aimed to explore and assess..

6.2 Designing for Experimentation

The PRS presented an opportunity to engage in analysis within a policy context that is deeply fragmented, in need of alternatives and experimentation and in which the failure of the state to intervene comes at a high social cost. Design project 2 considers two areas of the research framework, in which the state’s capacity to act is low but the perception of need and information about the policy context is mixed, to assess the design of hidden affordances and those beyond perception in existing policy instruments (Figure 6.1).

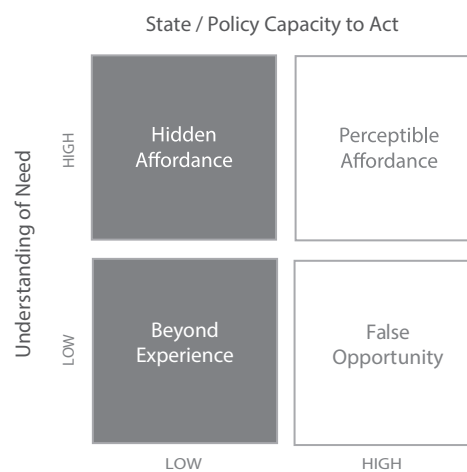


Figure 6.1
Research framework
application design
project 2.

Interaction will be examined both to support the practice of designing new instruments and to produce new types of interaction within the larger system of interactions at a systemic level. I will also draw

learning from both a design and policy instrument perspective regarding the use of open data as a policy and design resource and will illustrate how it supports alternative approaches to regulation that are demand-driven and that address some of the challenges of adoption, automaticity and legitimacy, impeding previous state intervention.

6.2.1 Action: An alternative to rent controls

As described in Section 4.5.3, design project 2 experimented with affordances to the design of new instruments for regulation. The design process involved testing and exploring design opportunities, considering the legal, policy and business model implications, and was guided by theory of change and led by a strong social impact vision. Unlike design project 1, which adopted the double diamond design process, the design process for design project 2 (Figure 6.2) worked through cyclical iterative cycles of inductive and deductive modes of enquiry common to second-order cybernetics to support a more reflective practice (Chow & Jonas, 2008).

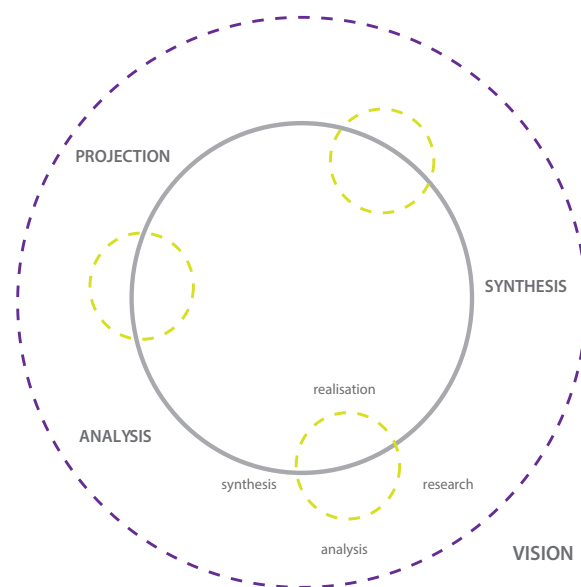


Figure 6.2
Design project 2 method
& plan.

Design project 2 responded to a competition run by Nesta and the Open Data Institute aimed at ‘generating innovative and sustainable open data solutions to social challenges’ to help people get the best out of renting. My role involved co-designing the proposition and leading the strategic development of the solution from a policy, business and

data strategy perspective. I worked collaboratively alongside a team of service designers who also had expertise in software engineering.

To kick off the design process, the design team conducted comprehensive desktop research to develop a deep understanding of the problem. This was supplemented by findings from initial user and market research conducted by a service design agency (UsCreates) and an accounting firm (PWC) provided as part of the competition. It was followed by an examination of housing policy and instrument design literature specific to the PRS and which incorporated findings from design project 1. This in-depth desktop research helped to ensure the policy issues and evidence were clearly identified to support the design process and to help articulate the social impact of the design solution.

From the outset, design project 2 approached open data as a design material used throughout the synthesis, analysis and projective stages of work. The data sets were mapped extensively and categorised according to the availability, type, comprehensiveness, interoperability, usability, scope and baselines that each provided. This mapping exercise involved building a comprehensive picture of the opportunities for design provided by the different data sets and their combination, comprehensiveness and accuracy. These were cross-referenced and cross-pollinated with known problems and social impact issues derived from the desktop and wider research from both my PhD findings and materials provided as part of the call. They were further triangulated to explore and ideate design opportunities from the different combinations of these data sets.

Key in the development of the design proposition was testing with increasing degrees of complexity the open data assumptions and foundations that underpin the design proposition and business model assumptions. The design team worked iteratively to test the overarching concept with users through a series of co-creation sessions with both tenants and landlords. These sessions were also used to validate the viability and feasibility of the design concept from a policy perspective.

The outcome of this phase of work culminated in forming a hypothesis that was taken into the concept projection and synthesis stage, as shown in Figure 6.2. This stage involved an extensive co-creation phase, working iteratively and collaboratively on the development of the user journey, service blueprints and initial service interfaces and touchpoints. It was significant at this stage that each of the open data, policy, business model and theory of change strands was developed iteratively for ongoing prototyping and validation before being taken into design implementation and realisation.

6.3 Reflection & Learning for Policy Instrument Design

In the following section, I discuss emerging reflections from design project 2. I highlight key research and design practice challenges concerning the design of new policy instruments in which current forms of interaction seem to restrain alternative forms of state intervention from occurring. These challenges are assessed as design and policy instrument interventions that not only seek to create new capacities for state intervention but also redefine the nature of interaction and value creation at the level of transactions, markets and systems. I also examine the different elements that future design practice might need to address when exploring hidden affordances and uncovering those that might seem beyond perception, as is the case with the application of open data.

6.3.1 Learning 1: Instrument functionalities beyond regulation

The design outcome reimagines an alternative to the regulatory function of policy instrument design. In converting open data into knowledge and understanding, the design proposition designed an innovative regulatory capability that moved the function of regulation beyond enforcement. To do so, it worked with value to transform interaction and behaviours and leverage new pathways for future interaction amongst the different stakeholders operating across the renting ecosystem.

Design practice worked with interaction as value in use and ‘value in context’ to produce a more deliberate approach to regulation as a capacity to act rather than control or restrict. The availability, application and disruptive nature of open data, in essence, delivered a form of user-driven regulation. In this context, interaction with the service also drives further public value creation, as those who interact with it amplify and increase the accuracy of the data sets as well as the value of data as a public asset. It illustrates how new instrument alternatives can be designed not only to deliver policy intent but also to process, produce, align and drive value co-creation. It therefore created new pathways for intervention throughout several levels of the renting ecosystem, including tenants, landlords and policy makers.

If a proposition such as RentSquare can achieve scale, it extends mixed production and consumption models of value co-creation beyond the immediate level of the interface towards driving overall market efficiency. The challenge remains of how an initiative of this kind might be integrated into the wider ecosystem of policy instruments to be delivered at scale in other contexts and policy mixes. In considering the use of open data as a resource for policy instrument design, efforts would need to focus on mapping data sets available for future deployment and whether these might be used to develop instrument functionalities beyond regulation.

6.3.2 Learning 2: Open data as a resource for instrument design

Critical to the design process was to design in response to an understanding of how to best to use open data as a design resource, in order to deliver interconnected, collaborative and systemic solutions that foster opportunities for value co-creation (Spohrer et al., 2007; Vargo & Lusch, 2004; Weiland et al., 2012) and reciprocal resource integration (Martinez & Turner, 2011:p.12). Open data was an essential resource in the design process and was used to facilitate ideation and to deliver on our social impact vision by co-creating different dimensions of value, such as user value, policy instrument capabilities and public value.

The design process adopted Ackoff's (1989) pyramid of information (Figure 6.3), which transforms open data from information into knowledge and understanding. In his model, Ackoff suggests that data itself has little value if information and, more importantly, knowledge and understanding cannot be derived from it.

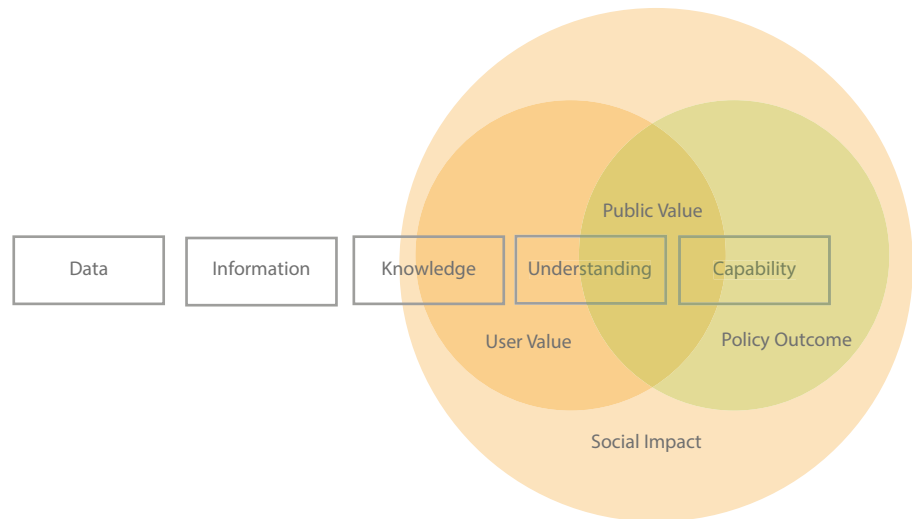


Figure 6.3
Adapted from Ackoff's
(1989) pyramid of
information.

In a first instance, the application of open data was used to develop an algorithm that calculates fair rent prices, co-creating immediate user value as information at a transactional level for both landlords and tenants. The pricing model addresses a specific need to predict rent prices for a particular property. More widely, the pricing model also provides an opportunity, by creating knowledge and understanding and a capability, to address imbalances of information and power in the relationship between tenants and landlords.

In addition, by predicting rent prices directly, the algorithm addresses the lack of policy information and knowledge regarding rental prices at granular and aggregate levels. This in turn supports the development of future rental data sets to inform policy decisions and enhance policy outcomes, generating more public value. In order to do that, the design process focused heavily throughout on exploring which combinations of data could yield the greatest value to both tenants and landlords and, from a policy making perspective, support the best policy outcomes at local, regional and national levels. Processing data into

knowledge, understanding and a capability to act co-created not only user value at a transactional level and addressed major imbalances of information but also aligned value networks to increase the state's capacity to act in this market.

The aim of design project 2 was to simplify and translate complex information on rents and models of return. It approached the application of open data, moving it beyond data visualisation practices that mostly create information based on the application of this data. Instead, the application of open data also became about designing new forms of interaction by actively extracting value in the form of knowledge and a capability implemented through a fully designed service proposition. The service proposition commercialises the understanding from the open data sets to produce further value through a service in which tenants access more affordable properties, landlords reduce their risk of voids and tenants can be better matched to landlords — therefore improving market efficiency. Furthermore, the application of data in a dynamic value co-creation interaction potentially allows for traditionally antagonistic relationships between tenants and landlords to be made more mutually beneficial.

By transforming open data and information into knowledge and understanding, design project 2 transformed data into a service for users and, more importantly, a policy instrument capability in the form of user-driven rent regulation. It potentially provides a mechanism by which to deliver functionality, from an instrument design perspective of regulation, of a collaborative nature. By doing so, it produced wider social impact while addressing a key policy problem of housing affordability in the PRS.

Finally, open data, transformed into a service proposition with policy instrument capability for regulation, lends legitimacy to the design outcome and the overall social impact it seeks to achieve. It works to build trust in the service and, due to the accuracy and robustness it can provide, a fairer and more transparent pricing model. Moreover, in doing so, as the principle of transparency lends itself to the overall

service design and proposition, it gives the design process capacity and agency for initiating and delivering change.

6.3.3 Learning 3: New forms of interaction and the design for trust

A key element of the design practice was the need for the interaction between tenants and landlords not only to foster adoption but also to ensure that it created legitimacy, designing trust in these new forms of interaction. The relationships between these two groups is often characterised by the power of landlords on the one hand and the powerlessness of tenants on the other hand. Instead, what became evident was the need to create new shared meanings for this community in order to change predefined motivations and expected norms of behaviour.

The principles of fairness and transparency arising from the application of open data were used as a basis to develop new values and expectations in relation to these new forms of interaction. These principles enabled the design team to consider interfaces and exchanges that could move away from relationships characterised by antagonism and co-create shared values, connecting individual interest to collective motivation (Ostrom, 1990) and better behaviours and practices. The use of open data and the transparency it engendered allowed a potentially disruptive capability of the pricing algorithm to address opportunism (Ostrom, 1990) at a transactional level and to address the wider implications at a systemic level across the market. The openness of rent prices intentionally disrupts the market by forming a benchmark of better practices to drive changes in behaviour and better practices across the market.

Design for trust brought an inherently systemic dimension to the collaborative nature of value co-creation and initiated in part a social conversation about the role of the state in this sector. From the development of the algorithm to the online design interfaces, these elements reflected, responded to and examined how a potential function of government could be delivered through a truly shared consumption and production model. Technology, open data and the

85. The accuracy rate for calculations has since been confirmed, following a crowdsourcing campaign to launch the service. This demonstrated the business model saving landlords an average 85% in fees and costs associated with letting and tenants an average of £1,300 per year. The intention is that the savings generated mean that tenants can afford to pay an electricity bill or save for a mortgage and that landlords are guaranteed a return.

algorithm all served to give the design solution legitimacy and, as a result, a degree of trust in being a drive for social change and an independent arbiter within this ecosystem of interactions.

6.4 Design Project 2 Outcomes: Design for Social Change

The service proposition developed as part of design project 2 involved the creation of a digital service that connects tenants and landlords directly around the best rent price. Most importantly, it designed a new policy instrument regulatory capacity. The overall design vision was to use information to bring transparency into the PRS and correct its inefficiencies in two ways.

Reflecting the learning point around design for trust described above, the first element which is central to the design proposition is a fairer and more transparent rent pricing model. This model was achieved through the algorithm, which uses a series of open data sets and user-generated data to predict rent prices for specific addresses. Keeping to the vision, the intention is that the calculator encourages fairer and more transparent deals that are more affordable for renters while ensuring a return for the landlord by also minimising landlords' risk of properties sitting empty because prices are not matched to market demand.

As part of the design process, the data assumptions for the rent calculation were modelled using a sample of 100 properties in Hackney, London. The modelling tested different assumptions for pricing and applications of open data and demonstrated a market for the proposition, working for 69% of the chosen sample.⁸⁵

The second element includes a digital service that encourages more transparent practices and better matching of demand to supply. The service enables users to exchange contracts for properties at these more affordable prices and to access features in which the terms of their deal and contract reflect wider good practice. The service aimed to make this seamless, de-institutionalised policy

initiative while making the contract exchange fast and easy with significantly lower transaction costs to both tenants and landlords. As I discussed in Chapter 3, design's ability to bring tangibility and materiality to services and systems is well-documented, but its role extends well beyond that. By getting landlords and tenants to input further information, to obtain a more accurate calculation and close agreements online, it creates a policy instrument for regulation that is user-led and demand-driven. The wider design vision is to deliver a user-driven instrument in the shape of a technology and service to help the market regulate itself and empower people with the ability to make real choices.

6.5 Reflections on Design for Policy Instruments

In this final section, I will consider design project 2 findings and outcomes and the wider research considerations for the development of design practice and research. In particular, I will consider the application of affordance as a construct to support policy instrument design in the development of a new regulatory capability through RentSquare as well as the wider governance implications arising from this.

6.5.1 The role for vision in the design process

There is an extensive legacy within the design and in design research literature that promotes the importance of a strong vision and broader purpose for design practice and outcomes (Papanek, 1985; Whiteley, 1993; Thackara, 2006). Although prominent in these debates, the need for a clearly specified vision is not commonly featured in the recent literature and in service design, design for services or design for policy practice.

Given that design project 2 examined innovation and experimentation in policy instrument design, a design vision served to guide how interaction was understood and projected through the design solutions. From the outset, a key element of this project was to approach design practice within a clearly defined social impact

narrative, which was later translated into subsequent business metrics. The design process worked towards contributing to specific policy outcomes to design for housing affordability, accompanied by this clearly articulated social impact vision.

The vision permeated the entire design process and practice, including other business modelling activity and the technical development of the open data application. Particularly in the projective phase, it framed possibilities for experimentation and interface development across the several stages of the process. As such, the overall social impact vision not only shaped the end that the design outcomes sought to address and articulate but also the means by which these were achieved.

6.5.2 Affording trust through recognition

Design project 2 illustrates design's experimental and future forecasting capacity to design new policy instruments and regulatory functions. In order to devise a design proposition that could address and build trust, the design process and practice drew significantly on methods to design a solution and interfaces that could foster user adoption and create legitimacy by inviting recognition and generating attractiveness despite the disruptive nature of rebalancing relationships in the PRS.

Design practice worked to identify existing user expectations and experiential metaphors (Krippendorff, 2005) that could be tapped into to create opportunities for the design of different forms of interaction. A key element in using affordance to create recognition was also to explore latent need, uncovering opportunities for intervention that would enable the design proposition to move beyond socially constructed narratives and practices common to the PRS market. This was important for both tenants and landlords, because the design proposition seeks to cumulatively improve practices and the overall experience of renting in the PRS. This improvement included driving transparency across the sector through upfront pricing, the terms of contracts, designing opportunities to foster empathy and humanise the rental process through early, direct contact between tenants

and landlords. In the case of landlords, given that they are usually perceived as an antagonistic stakeholder in the renting process, the design practice was able to recognise that they too were at a disadvantage from high fees and speculative prices within the letting industry. Finding and sustaining common ground and shared interests between tenants and their landlords proved invaluable in sustaining buy-in of the service and legitimacy in its implementation from a policy perspective. Future forecasting and finding and using affordances, despite their unlikeness, was critical in designing trust by enhancing recognition of familiar and desired experiences and outcomes as found in other services.

Furthermore, to sustain the experimental and disruptive nature of the service proposition and regulatory function of the service, the design process initiated a social conversation about how regulation and fairness in this context might be delivered in the future. RentSquare's algorithm not only provided a robust technical solution to a policy issue but also helped foster a wider social conversation about rent price setting, which helped create consensus to drive user adoption and bring it legitimacy.

The formation of an independent entity with a core social impact and social innovation mission also increased the legitimacy of the intervention. It helped, as I mentioned earlier, not only to de-institutionalise the service experience but also to create a business model that, despite being outside direct government control, was able to advance collective interests and policy outcomes from outside the state (Bourgon, 2011), which brings with it challenges, because it demands potential new forms of governance.

6.5.3 Design at a macro level: Governance implications

The research findings present wider implications of design project 2 findings to the question of governance raised in Chapter 3. As I discussed in Section 3.2.5, the application of design practice to support policy decision making and experimentation has been associated with

its ability to provide an alternative to top-down models of decision making, with co-creation and co-production as key in doing so. The policy context of design project 2 worked with the PRS, which is historically resistant to policy intervention, and provided an opportune context to explore design's contribution to experimentation. The results from the design project demonstrate a co-creative approach that successfully supports problem diagnosis, decision making and policy design in its application as a method in design practice. What is significant in design project 2 is the application of co-creation as a service and collaborative model that helped generate value in context and, through the application of open data, potentially allows for the democratisation of knowledge and the emergence of a new regulatory capability.

The project demonstrates, from a policy instrument design perspective, that the application of data as a public good and asset (Digital Government Review, 2014) does not only create legitimacy for future implementation. In practice, it also raises several questions regarding the governance and institutional (O'Toole, 2003:p.234) arrangements for delivering policy intent through mechanisms such as RentSquare. These questions include:

1. What are the wider governance implications if regulation in the PRS were to be delivered through similar means?
2. What does this mean for public accountability and the role of government regarding these new forms of interaction?
3. From a housing policy perspective, does design project 2 effectively create an intermediate PRS?

Furthermore, if an initiative, as design project 2 suggests, is to provide an alternative to rent regulation, then achieving scale and traction are key in ensuring the delivery of public outcome and policy intent. Also critical to understanding the role of the proposition as an alternative is its ability to measure impact. The design process focused heavily on developing clear metrics for measuring levels of affordability in the sector. Policy makers would have a critical role in designing legal and

administrative frameworks to support implementation. RentSquare's impact will also be tested in relation to the accuracy of information it generates on market activity. The ability of a design proposition to offer credible information and manage data is fundamental to market adoption and RentSquare's use by policy makers. If it is to be relied upon, transparency around the use of personal data and data sharing will help ensure the tool is both trusted and accountable to its users.

Design project 2 offers a potential alternative to models of governance that pit markets against the state and vice versa. It explores a new role for government which involves the brokering of relationships with a range of stakeholders (Streeck & Scmitter, 1985). It follows Parsons's (2005:p.492) description of governments that mix delivery systems to support policy implementation — governmental, sectoral, enforcement and values mixes — by providing value through opportunities for new policy instruments by using data as a public asset. However, further work is required to understand how an external social impact business can collaboratively provide a regulatory function of government without compromising its role in affording public accountability.

6.6 Summary of Findings from Design Project 2

In this chapter, I explored design practice for new policy instruments and how working with interaction as affordance might support the design for trust in this context. This took the form of a disruptive digital service and the design of a new regulatory instrument that used open data to regulate rents and the quality of properties in the PRS. Design project 2 created, in its simplest form, a digital solution to encourage new forms of interaction between a range of stakeholders within the PRS, including steering small portfolio landlords away from thinking that charging the most in rents is the best way to secure a financial return. At the level of policy instrument design, it created a new user-driven regulatory capability.

It is still too early to measure the success of RentSquare as an intervention. It does, however, highlight opportunities for both service

design and public policy making and practice to learn from each other. In the case of the PRS and rent controls, the design proposition discussed demonstrates an approach to policy instrument design that tackles the issue of housing affordability from a demand-centred perspective while exploring an alternative regulatory function of instrument design beyond enforcement for effective intervention.

In bridging approaches that move away from bottom-up and top-down distinctions, it also demonstrates the implications and the potential of emerging governance arrangements in which open data plays a fundamental part in fostering collective interest through new forms of interaction. Design project 2 suggests alternatives to policy implementation instruments of direct taxation, regulation and subsidy and points to how solutions such as these might support more collaborative and diffuse practices of forms of governance supported by innovation and experimentation in policy instrument design.

Despite its experimental approach to instrument design and to materialise opportunities from hidden and seemingly imperceptible affordances, the social impact vision guided the process of future forecasting of a service-based solution and instrument for public good. Here, open data was deployed not to monitor or deliver a state capacity but to redress market inefficiencies and drive public value. Understanding interaction from the perspective of hidden affordances beyond perception allowed the design practice and implementation to generate recognition to increase the adoption and legitimacy of the proposition. The design practice explored latent demand also through cognitive and visual metaphors to help expose opportunities for intervention and move beyond socially constructed narratives of antagonism typical to this context.

In this chapter, I have not tried to argue that a design proposition such as the one discussed here is the only possible means of addressing affordability in the PRS. Instead, design project 2 helps illustrate and experiment with different instrument design arrangements and mechanisms to support affordability of rents and new forms of

interaction within the context of the PRS.

However, there are several findings emerging from design project 2 that warrant further examination and that will be assessed as part of design project 3 in Chapter 7. The first finding concerns the question of scale, both within the context of emerging forms of social innovation and widely acknowledged in the design for services and in the wider literature that examines social innovation. Although results from design project 2 do not provide answers to the question of scale, given its early stage, they do raise the question of whether an initiative such as RentSquare could take on the functionality of regulation on behalf of or alongside other forms of state intervention in the PRS and how that could best be achieved from an instrument design perspective. The question of scale is significant, because it determines the impact and long-term sustainability of the delivery of a regulatory functionality through an entity external to the state. From an operational and technical perspective, scale would enable an initiative like RentSquare to increase the accuracy and robustness of its algorithm. From a policy implementation standpoint, this would increase the legitimacy of a service such as RentSquare in providing an alternative model to intervene through regulation and deliver public value. Another issue involved in designing an organisational instrument to address policy outcomes is the significant questions it raises about how a service such as RentSquare retains its uniqueness and attraction and does not become institutionalised or lose sight of its disruptive, experimental nature. It is these issues that will be taken into analysis for design project 3.

7 Design Project 3

As part of design project 3, I examine the challenges of design for policy instruments of an organisational nature and within the context of social innovation. This follows from the previous chapter, in which design project 2 considered the development of new instrument capability in the form of a socially impactful enterprise. Design project 3 will seek to take the analysis further by considering the governance implications of using socially innovative organisations as an instrument for policy implementation and the challenges of embedding these in the public sector and in scaling them up.

Wider debates around NG, public value and public service innovation widely accept the role played by external organisations in co-creating and co-producing collective benefit and public value. Many understand that innovation in public service delivery is likely to emerge from outside existing government infrastructure (Harris & Albury, 2009), which in turn challenges existing governance arrangements. As I explored in Chapter 3, despite this acknowledgement, there is little understanding of what policy instruments might best support these new governance arrangements reliant on collaborative approaches to policy delivery. This is particularly the case in the context of forms of social innovation that inevitably challenge not only current models of public governance but also the organisational structures emerging for stewarding public value.

Considerable attention is paid to mechanisms that incentivise early-stage innovation and the development of innovation capabilities both within, in the case of policy labs, and outside the public sector. However, less attention is paid to examining how social innovation interfaces with public governance infrastructure across different levels

86. For instance, in the case of planning legislation, which some have argued in effect makes the supply of affordable housing more expensive (Glaeser, 2012:p. 11). A developer-led model that presupposes that the most efficient way to produce homes is through large-scale, top-down projects has led to the production of homes being concentrated with a handful of providers (Parvin et al., 2011). Coupled with the upfront costs for purchasing land required for any new development, it makes the cost of new supply prohibitive, as it requires large financial capacity to bear any development costs.

of government.

The work developed in design project 3 is also significant from a housing policy perspective. I could not complete an analysis on addressing housing affordability without considering the issue of supply. The problem of housing supply is not a straightforward one easily resolved by simply incentivising construction but is deeply affected by existing policy instrument infrastructure and a legacy of practice.⁸⁶ Design project 3 will consider how the issue of affordable housing supply might be addressed by community-led housing approaches that provide alternatives to the current developer-led model.

From a design perspective, design project 2 considered, in designing a new instrument with a regulatory capability, the question of the design for trust to challenge existing imbalances of power. The questions of scale and accountability emerged as a critical consideration for future instrument design. Also relevant were considerations of how new instrument capabilities can achieve legitimacy within an existing policy instrument infrastructure. In what follows, design project 3 considers a design context in which there is a legacy infrastructure, both organisational and legal in nature, that is ill-fitted to sustain alternative and socially innovative forms of interaction.

I will examine the impact of developing design practice using false and perceptible affordances to explore interaction in which the state has a high capacity to act but a mixed understanding of need. I will explore the role of design practice to scale new solutions and support those that are reaching maturity to interface with existing legacies of policy instrument infrastructure. In particular, the analysis examines the implications of exploring organisational instruments in the context of socially innovative models of delivery and of the very organisations themselves in addressing policy challenges to deliver social impact and public value.

7.1 Community-led Housing as Social Innovation

As an emerging field of research (Vestbro, 2010; Krokfors, 2012; Tummers, 2015), community-led housing is broadly understood as housing in which there is (a) a high degree of self-directed involvement of community members in designing, planning, building and maintaining new homes or regenerating existing ones and (b) varying degrees of sharing either spaces, facilities, management or activities amongst individual households.⁸⁷

The benefits of community-led housing and its innovative potential are increasingly documented by academic and policy circles within and beyond the UK.⁸⁸ In the UK, community ownership per se as a delivery model and instrument is not a new concept. Many of the early garden cities, such as Letchworth Garden City, were built around models of community trust, ownership and management. Recent efforts reflect policy changes in policy preference through the emergence of instruments to encourage 'place-based social capital and community-led solutions' (McKee, 2012). In England, the 2011 Localism Act⁸⁹ saw the introduction of several rights to encourage community-led initiatives (such as The Community Right to Build,⁹⁰ The Community Right to Bid⁹¹ and Neighbourhood Planning⁹²), recognising the value of community-led approaches and devolved decision making. Despite its increasing popularity and potential to integrate place-based, well-being and welfare-related benefits, government efforts to scale these initiatives are limited by available finance for development, lending and planning restrictions that make community-led development challenging.

Design project 3 works with a specific model of community-led housing, community land trusts (CLTs),⁹³ which specifically focuses on housing affordability. The CLT model uses a range of mechanisms, such as asset locks,⁹⁴ to suppress and lock land values in perpetuity, ensuring long-term community benefit (Paterson & Dayson, 2011). From an instrument design perspective, the CLT model is recognised in the 2008 Housing and Regeneration Act⁹⁵ as a legal entity that has as its purpose acquiring and managing land on behalf of local

87. The principles of self-direction and community orientation are key to community-led housing. Recently, these models have evolved to include 'hybrid' forms with a degree of institutional involvement in the different stages of these projects. In the UK, the sector itself is comprised of many different organisational forms, including housing cooperatives, co-housing, self-build and community land trust models.

88. Examples include German cities that have successfully integrated community-led projects into planning and urban development programmes (Ache & Fedrowitz, 2012), with cities such as Zurich, Strasbourg and Amsterdam following suit (Garber et al., 2010). Studies also demonstrate how community-led housing promotes alternatives to the growing challenges of housing and supports wider public service delivery (Institute of Public Care, 2012) in caring for an ageing population (Fernández, 2013).

89. The Localism Bill was introduced to Parliament on 13 December 2010 and was given Royal Assent on 15 November 2011, becoming an Act.

90. The Community Right to Build allows local communities to propose small-scale, site-specific, community-led developments. It came into force on 6 April 2012.

91. The Community Right to Bid gives community groups the right to prepare and bid to buy community buildings and facilities that are important to them. It came into effect on 21 September 2012.

92. New neighbourhood planning measures allow communities to shape new developments by coming together to prepare neighbourhood plans. These measures came into force on 6 April 2012.

93. The current CLT model as is practiced today, took its roots from US models that emerged in the late 1960s to address the pressing needs of African American communities during the civil rights movement. In England, there are around 100 CLTs. A majority of CLTs are of a small scale (50 or less unit) and are in rural areas. More recently, several urban CLTs that are significantly larger in scale have started to emerge. In Scotland, CLTs tend to be of a larger scale, owning estates, forests and islands across 500,000 acres (Hunter, 2012).

94. This can include arrangements whereby if properties are sold, a covenant ensures the purchase value is also 20% below market rate. More recently, shared ownership arrangements have been adopted by many of these schemes, allowing any buyer at any time to be able to purchase only up to 80%. The use of shared ownership,

communities. Despite the proposed benefits of CLTs as organisational instruments to support the delivery of affordable housing (Aiken, Cairns, & Thake, 2008; Paterson & Dunn, 2009; Paterson & Dayson, 2011), the technical nature of these projects means they face many obstacles.⁹⁶ From a policy instrument design perspective, CLTs are an example of policy instruments that support the delivery of affordable housing through distributed forms of housing production and consumption.

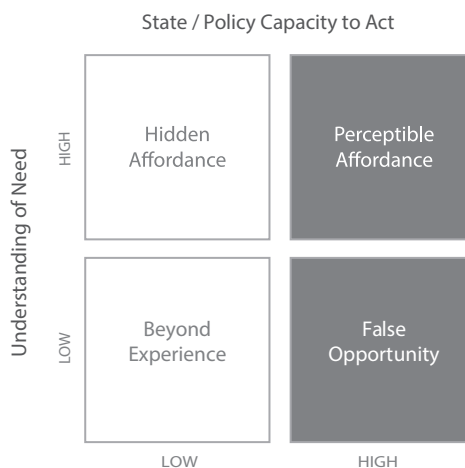
Design project 3 focuses in particular on the work of the National CLT Network (NCLTN), a membership organisation lobbying government and supporting CLTs across England in interfacing and acting as an intermediary between individual CLTs and the national government. Interaction in the context of design project 3 is examined in a multilayered fashion between CLTs and the NCLTN, between CLTs and local policy infrastructure and between the NCLTN and national policy frameworks. The NCLTN provides a potentially different model of interaction between the state, civil society and the private sector, acting as an intermediary that harnesses the potential of an emerging sector and of an innovative model for the delivery of affordable housing and to generate public value. As a form of social innovation more typically characterised by their grassroots nature, CLTs provide an interesting design challenge for examining the evolution and question of scale often associated with social innovation debates (Manzini, 2013; Mulgan, 2014a) and its adoption into policy instrument infrastructure. In what follows, I examine the approach and action adopted as part of design project 3 and the intervention.

7.2 Designing for Scaling Social Innovation

Design project 3 highlights the challenges associated with supporting scale and how evolving forms of social innovation interface with an ecosystem of policy instruments and the interactions these give rise to. As a design project, the NCLTN provides an opportunity to examine interaction and these questions of scale, value and adoption at the level of ecosystems. As the NCLTN acts as an intermediary organisation

more common in the intermediate housing market, helped to achieve the asset lock while making it less risky for lenders. Other measures include changes to the lease terms and tenancy agreements to ensure affordability is maintained throughout and any uplifts in value and subsequent profits being kept in the local community.

Figure 7.1
Research framework application design project 3.



In design project 3, as I outline in Figure 7.1, I examine a context in which the state's capacity to act is high but the understanding of the need is mixed. Within the context of design project 3, there is a legacy of instruments with which these forms of social innovation interface, with mixed success. At the same time, this existing legacy of instruments is ill-equipped to embed and significantly scale alternative models in a way that preserves their innovative nature while enhancing their viability and scale. As covered in Chapter 3, delivery of policy goals via organisations such as CLTs and the NCLTN suggests a shift towards networked models of governance in which policy instrument design alternatives are lacking. Given how the NCLTN and CLTs interface with a multilayered policy instrument infrastructure at local, regional and national levels, interaction was explored from the perspective of false affordances. Furthermore, because existing policy instrument infrastructure is well embedded, it was important to explore interaction from the perspective of perceptible affordances. In that sense, it explores how the state can act as a platform for future intervention and, conversely, how current forms of interaction prevent socially innovative models of delivery — and the organisational models that might accompany them — from flourishing.

The design constructs of social innovation and collaborative

95. Part 2, Chapter 1, Clause 79. A Community Land Trust is a corporate body which:
Is established for the express purpose of furthering the social, economic and environmental interests of a local community by acquiring and managing land and other assets.

96. The average process for setting up CLTs takes two to four years from start to completion. This involves the constitution of a group (which subsequently must register as a housing provider), identifying a site for development, land assembly, negotiating planning permissions, development of architectural plans and the building and development of homes. In addition to meeting technical requirements, CLT groups are required to consult local

community members to gain approval. Access to expertise, challenging relationships with local government, access to land (Paterson & Dayson, 2011) and capital funding from market sources at reasonable rates can all prove too challenging for some projects. The sector is seeing the emergence of some ethical lenders, including Triodos Bank, Charity Bank and Ecology, but as these projects lack the scale needed to de-risk investment for lenders and require both capital funding for development and revenue funding to support mortgages for new owners, scale is limited. A recent DCLG report (2006) warns that although asset ownership is key for the long-term sustainability of community-led management activities, it is not suitable for all groups. Others considering the role of CLTs in conservation (Campbell & Salus, 2002) or mitigating the effects of population displacement (Bourassa 2006) point towards problematic issues around the lack of community buy-in, trust and support for these CLT projects.

organisations will be examined to support design practice and the design of new networks for collaborative governance and interaction.

I will examine how instrument design can help scale new solutions and how false opportunities and barriers associated with the existing infrastructure might prevent the proliferation of community-led housing approaches to affordable housing supply. In exploring interaction at the level of networks, I consider governance implications and how analysis at this level might address these challenges.

7.2.1 Action: Alternatives to a developer model

Design project 3 worked with the NCLTN to explore how it could better support CLTs and increase the traction of CLT models across the UK.

The NCLTN acts as an intermediary body that interfaces with a range of stakeholders and that provides an ecosystem of support for the sector.

A key element of design project 3 was to examine the user experience when accessing different forms of support offered under the NCLTN umbrella.

The design practice focused on the exploratory and mapping stages of design research. It ran for nine months (January 2015 to September 2015) and involved working at different scales alongside the NCLTN, individual CLT groups, regional bodies and national bodies (Figure 7.2). The first stage consisted of extended desktop research and a range of interviews with a range of stakeholders, which included individual CLTs, technical advisors who assist CLTs and industry stakeholders involved in the ecosystem of CLT delivery (architects, HAs and financial and lending institutions). From the start, I adopted a broad view of who were the NCLTN's users, including existing CLT groups and those in development, and the stakeholders within the wider ecosystem engaged in bringing these projects to fruition.

As CLT projects extend over long periods of time, I segmented design research with CLT groups into four sections — early-stage projects, projects in development, completed projects and unsuccessful projects. This would ensure I could capture different user needs and expectations at different stages of a CLT development and the value

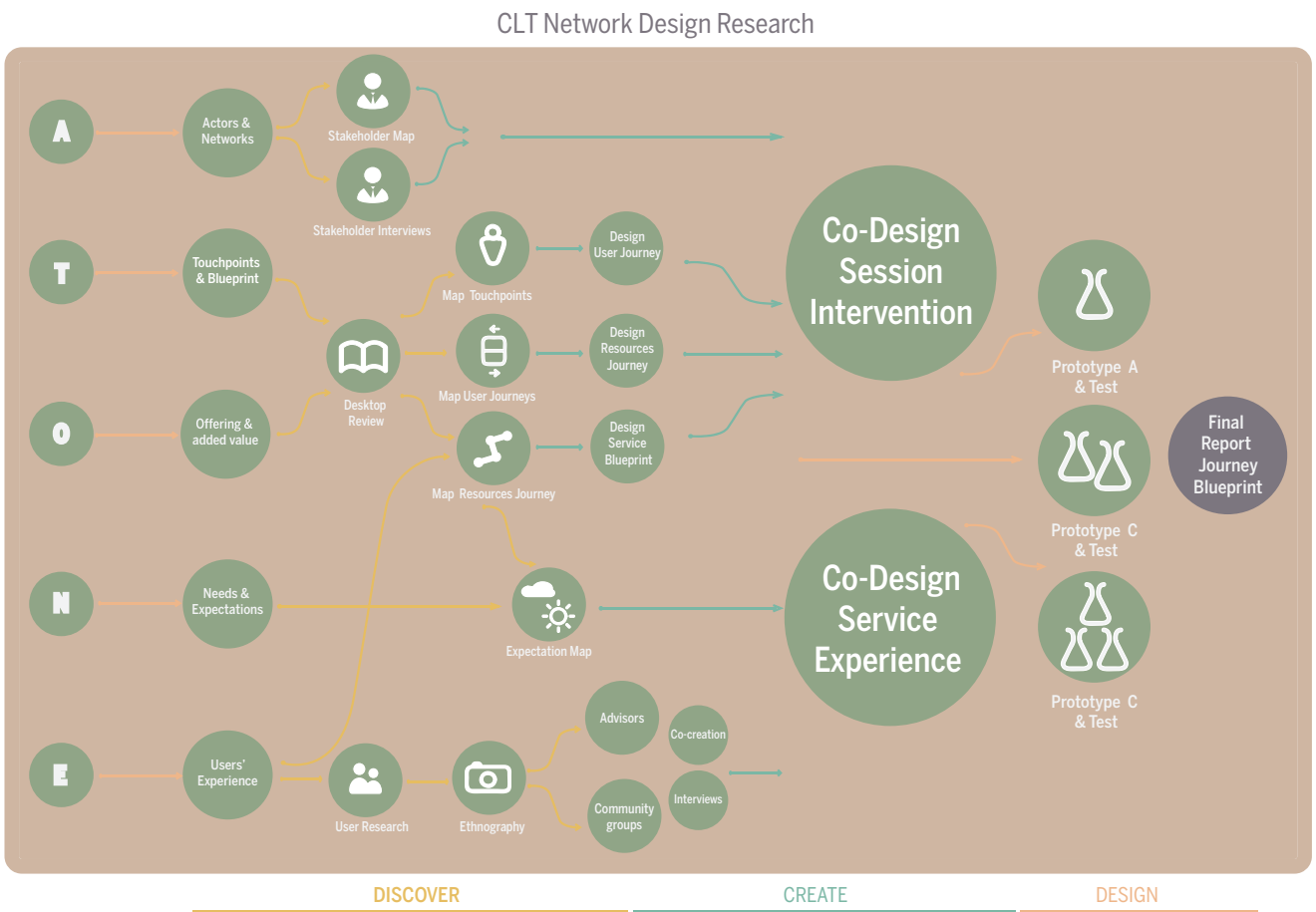


Figure 7.2 Design project 3 research plan.

97. This included financial and lending institutions, housing associations, local and regional government bodies, developers, built environment experts and architects, charities, research bodies.

98. Broadly speaking, the method used in the service sciences involves four distinct phases of mapping and triangulating information to identify functions and actors involved, the functionalities and value they provide, the tangible outcomes and the intangible value created in the relationship between actors.

which the NCLTN provided each of them. A series of semi-structured interviews with participants as well as ethnography were undertaken to understand support needs from a CLT and stakeholder perspective. Work also included running two co-creation sessions with expert advisors who support CLT groups and mapping the offered support, key barriers and networks on which advisors and CLTs rely. This was accompanied by a series of interviews with a wide network of stakeholders and other organisations that operate indirectly in community-led housing and community-led grassroots projects.⁹⁷

As design project 3 worked with interactions at a systemic and granular level concurrently, it required tools to trace complexity and potential affordances provided in these layers of interaction. I turned to systems and value network mapping (Alle, 2003; Normann & Ramírez, 1993) and methods borrowed from the service sciences to synthesise findings.⁹⁸ To support the analysis, I created a detailed blueprint of all the resources the NCLTN offered, not only to groups but also to expert advisors and other partners in the process. Both exercises worked in tandem to help create a multilayered stakeholder map used to visualise stakeholders involved and to identify existing forms of interactions, their nature and the tangible and intangible value created as a result of them. To collect insights about wider user adoption of the CLT model, several interviews with non-adopters and vox pop sessions were held across sites in London and in major rail stations. The purpose was to speak to a random sample of people, not only from London, about their knowledge of CLTs, community-led housing and the appetite of interviewees for engaging and becoming involved in such projects.

To conclude, the project design practice findings were analysed for patterns and trends and were triangulated to generate insights for design synthesis and to examine business model implications. Project results were presented to the NCLTN board in June 2015, at their national conference in February 2016 and at UN Habitat community-led housing events. Results continue to be shared across the sector. As we will see below, the research findings highlight challenging results

not only for the NCLTN but also for the sector as a whole in how their interface with the governance ecosystem affects delivery and the viability of the sector.

7.3 Reflection & Learning for Policy Instrument Design

In the analysis that follows, I highlight key design practice and research findings regarding the interaction between a maturing form of social innovation, an existing ecosystem of housing delivery and the policy instrument infrastructure that surrounds them. CLTs are approached as an example of an organisational instrument that not only provides an alternative mechanism and route for delivery of affordable housing but that is also a socially innovative organisational model for collaboration between government, civil society and the private sector for creating public value.

In examining the organisational dimension of instruments from a design perspective, I will approach two challenges associated with practice in this context. The first concerns approaching CLTs and their intermediation within an existing policy instrument infrastructure, both as a mechanism for delivery of affordable housing and, at a systemic level, in creating a new housing sector. The second involves design practice at an organisational level to operationalise the benefits and the innovation of their delivery models. As I will show, there are several challenges that arise from policy demands on organisations such as CLTs and from the push to mould them into existing instrument infrastructure. The tensions experienced within CLTs, the NCLTN and the wider sector arise also from how, as a grassroots movement, CLTs adapt or retain their original purpose in how they interface with existing government infrastructure. Design project 3 identified several learning points, which I discuss below.

7.3.1 Learning 1: Operationalising collaborative organisations as instruments

Design project 3 illustrates the challenge of maturing forms of social innovation with ties to a grassroots movement and of interacting

with and becoming, by extension, part of an existing instrument infrastructure. It first highlights questions arising from the interaction between existing structures of government, networks for housing delivery, CLTs and the NCLTN as they interface with complex frameworks of public governance.

As the CLTs and, as a consequence, the NCLTN co-deliver policy outcomes and scale the results, they face the challenge of becoming a legitimate policy instrument while retaining their original purpose as a grassroots movement. As such, they tread a fine line between harnessing the motivation of those engaged with their cause as a grassroots movement and being amalgamated into and legitimised as a policy instrument. This is particularly the case because CLT projects and the NCLTN rely on a high degree of government buy-in at both national and local levels to operate and ensure the long-term sustainability of this emerging sector and housing delivery model.

More important and significant, however, for the purpose of my thesis, is the form and nature of evolution of traditional grassroots movements and social innovation, following Manzini's (2015) analysis of the design for collaborative organisations. Emerging CLT projects are led and delivered almost entirely by the work of local volunteers, supported by expert advice linked to the NCLTN. Taking projects from idea to fruition requires a continued and high degree of commitment from core group members over several years. Considering the types of relational form, involvement and benefit from CLT projects includes a high degree of personal commitment with a high intensity of social ties formed amongst the participants of these groups over long periods of time. Due to the complexity of CLT projects and the time commitment required of members, those who tend to participate are typically professionals who bring with them a range of skills and expertise. Many CLT participants shared concerns for affordable housing in their local area but did not stand to benefit from homes created as a result of the CLT projects they were involved in. This in part protected projects from being driven by individual interest and direct benefit, but it also prevented CLTs from tapping into a significant pool of people with

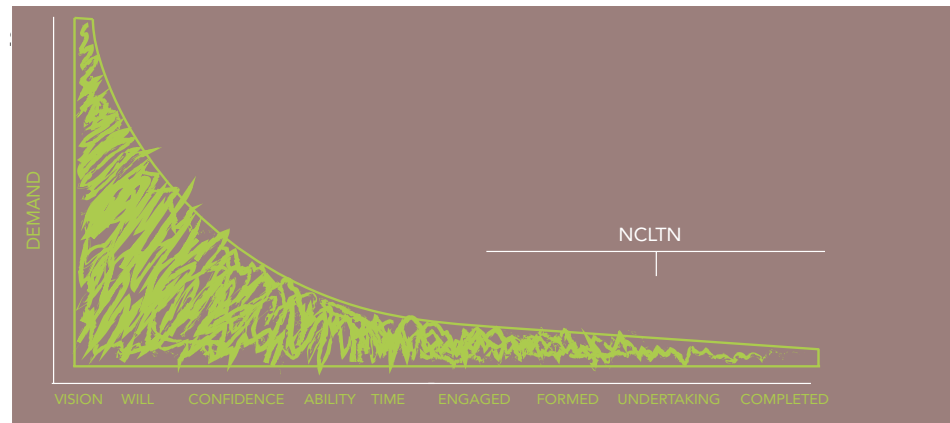


Figure 7.3
NCLTN demand analysis.

These aspects contributed to making CLTs less open and accessible as organisations. More importantly, they made the NCLTN's support for groups and those interested in participating less open and, perversely, made the sector less visible. The NCLTN missed the opportunity to foster greater buy-in, because the adoption of its model efforts was directed at addressing the demand of those who had the time, capacity and interest in CLTs rather than at harnessing the motivation of those who could gain the most from the projects — the people who needed somewhere to live. By focusing support on setting up groups that would be responsible for the delivery of housing supply, the NCLTN failed to mobilise potential latent demand for the model's wider vision and objectives, which, from a policy instrument perspective, would increase the political legitimacy and visibility of the CLT model and its viability as a policy delivery alternative.

Beyond these organisational and operational challenges, the findings reflect a deeper issue of how socially innovative organisations intermediate with policy instruments. A key requirement and early milestone for CLT projects involves their registration as housing providers with the Homes and Communities Agency, which demonstrates how policy processes were effectively designed to make housing professionals out of those involved. Furthermore, as CLT groups became legal entities, their structure and interactions with policy instrument infrastructure and stakeholders became formalised through governance and constitutional arrangements. The requirement for CLTs to register responded to expectations, from a

99. In the public sector, these include local government agencies, county councils, locally and nationally elected representatives and civil servants. In the voluntary sector, they involve agencies who also coordinate community-led initiatives that go beyond housing-related issues. They also include institutional partners, such as housing associations, who partner with CLT projects both at a building and at a property management stage. Finally, in the private sector, these include all the lending, funding and financial bodies and experts providing technical expertise (legal, planning, development, architectural, financial) to projects.

policy instrument perspective, regarding how organisations used for state instrumentation must be structured to ensure probity of, and in the case of CLTs, operations in the highly regulated planning and housing policy environments. It further reinforces the rigidity in the relational nature of involvement in CLTs, which sits in direct tension with its grassroots organising and the potential benefits from a more collaborative model of housing delivery and community organising.

7.3.2 Learning 2: Designing policy instruments as networks

As an intermediary organisation, the NCLTN effectively functions as a network aggregator, because it interfaces with complex and distributed systems of interaction. A key objective for design project 3 involved examining what functions exercised by the NCLTN could be disaggregated from or intermediated with those of other networks to produce alignments and create a more sustainable business model. A key consideration for design project 3 was to understand how these alignments and synergies with stakeholders and across different policy levels could be made more effective and visible. This was important in the context of how the NCLTN could leverage greater value from existing or new partnerships and stakeholders that play a key role in the success of CLT projects and the sector more widely.⁹⁹

The research highlights the potential cost to the NCLTN of its operating model as a membership organisation focused on supporting individual projects instead of promoting CLTs as a development model. This is reflected in tensions in the NCLTN's wider strategy of goals and objectives as an intermediary organisation (Figure 7.4), treading a fine line between community activism and stewarding a model for the delivery of affordable housing. This was reinforced by the lack of clarity around who NCLTN's 'user' was and what objectives the organisation was structured to deliver. It became evident that the NCLTN was unable to make a clear offer to users beyond those wanting to be engaged with setting up a CLT and that it lacked resources devoted to increasing the visibility of CLTs as a desirable housing option and sector.

100. This relates to the rights of local governments to nominate the tenants for any new housing from their waiting lists.

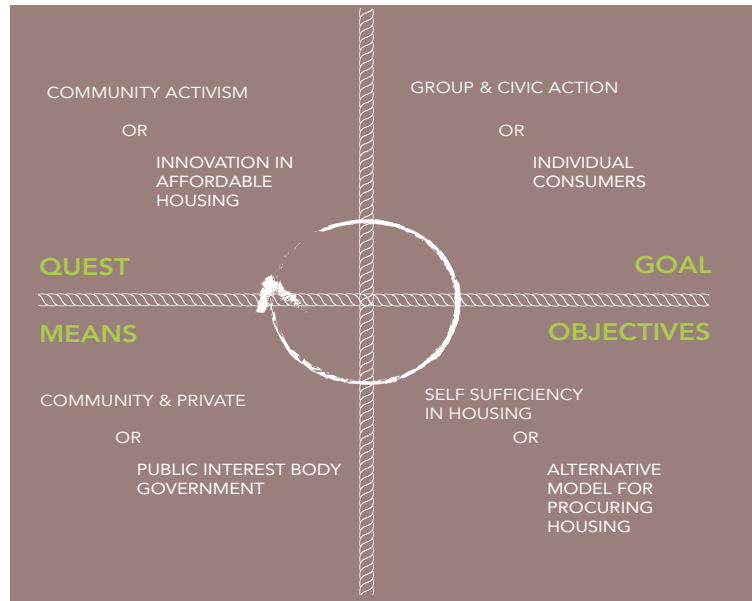


Figure 7.4
NCLTN organisational
tensions.

The design practice reveals more tensions between how CLTs act as a policy instrument for implementing housing affordability and their goal of redefining, through civic action and activism, definitions and models of affordable housing policy. To comply with housing policy aims at a project level, individual CLT projects were required not only to satisfy national planning and policy definitions of affordable housing but also to satisfy variations in how these came to be implemented by local government. Compliance with local requirements, such as rent levels, affordability ratios, public subsidy and cross-subsidy finance and nomination rights,¹⁰⁰ enabled CLTs to gain legitimacy as a policy instrument. But having to comply with often conflicting requirements at national and local levels also presented several challenges for individual CLTs. It prevented the creation of evidence and good practice and their dissemination to encourage the replicability of the model across different local government authorities. Many more CLT projects that fail to fit into strict definitions of affordability have found themselves unable to gain the necessary buy-in and unable to implement their plans. Beyond individual CLTs, this rigidity and the often conflicting objectives in policy delivery further increase the barriers to the development of the sector. More importantly, however, they limit the extent of innovation and experimentation this sector can bring to affordable housing delivery.

From a policy instrument design perspective, increasing the supply of viable projects could help economies of scale and could contribute to a more financially attractive sector that is less risky for capital lenders and less expensive for those wanting to live in a CLT home. To reflect these challenges, design project 3 explored how the NCLTN could enhance its role as an intermediary organisation and as a policy instrument to steward the creation of a market for CLTs as an affordable housing product and service. In the section that follows, I describe the design concepts developed to address some of the issues highlighted thus far.

7.4 Design Project 3 Outcomes: Designing Collaborative Capability

The outcome of design project 3 involved the formulation of a series of interventions and concepts to redefine NCLTN's core business activity as an intermediary organisation.

The first set of solutions worked to increase the visibility and buy-in of the CLT model and to engender participation in these projects of a more collaborative nature beyond professionalising engaged groups. These solutions were a direct response to challenges and burdens involved with the high relational intensity and commitment involved in bringing CLT projects to fruition. Design outcomes included initiatives to aggregate user demand and enhance the activities of the NCLTN as a collaborative network to provide a range of opportunities for participants to be involved in the movement without having to be directly involved in a specific group. This included linking with existing time banking and social networking platforms to harness the involvement of people interested in housing, community asset ownership and sustainability who could contribute on a task-specific basis with their skills or could be involved by crowdfunding local CLT projects. The intention was to drive the visibility of the model and tap into a range of sympathisers whose capabilities and skills would add value to individual projects on the ground. This could also involve creating more formal links with existing local community-

based initiatives, such as pop-up shops or community gardening, as a repository for community activity that could evolve into future CLT projects.

As was the case with many CLTs, a significant number of projects counted on local community members identifying the sites for development, which were then brought to the attention of local government officials. Another set of design solutions harnessed local knowledge and collaborative potential to source land for CLT projects and involved exploring links with existing start-ups to build a digital directory and future land bank.

A final set of design solutions involved redesigning the CLT process to accelerate project planning and execution and to target better support. Following an accelerator model used in the technology sector, the underlying vision was to design an enabling platform that could create the synergies to streamline elements of the process, challenge existing policy straitjackets and bring projects to fruition more swiftly. The proposed accelerator could either work in a location or by a typology of projects to address many of the key barriers to these projects from the start. The aim was to demonstrate nationally the successes of the CLT model and to bring legitimacy to it as a housing delivery option.

7.5 Reflections on Design from Policy Instruments

In this section, I will discuss findings from design project 3 from the perspective of working with an understanding of interaction as affordances and how this contributed to the design for policy instruments. Design project 3 demonstrates some of the tensions involved in working with an HCD perspective for organisations tasked as instruments for policy delivery and support of the evolution of social innovation. It also highlights, as these forms of social innovation begin to achieve maturity, these organisations' role in challenging policy goals and the wider governance implications arising as a result.

Design project 3 approached the design context from the perspective

of networks and systems and explored the challenges of navigating a complex ecosystem of new and existing organisational and legal instruments that, on the one hand, afforded these projects trust and legitimacy, but on the other, failed to fully harness leverage points and latent demand to increase the viability of these alternatives. From a policy instrument standpoint, Design project 3 highlights how existing requirements regarding the proposed organisational models which CLTs were expected to adopt were ill-fitted to the potentially collaborative and experimental nature of these projects. This issue of poor fit not only affected the success of individual efforts but also prevented further innovation from within the sector. The findings discussed below are in direct response to the learning points covered in Section 7.3 and their contribution to the development of design practice and research.

7.5.1 False affordances and collaborative organisational capability

Crucially, design project 3 highlights significant findings to finalise my analysis in relation to the research gap. Design practice, to foster collaborative social organisations (Section 3.2.6) as a form of co-creative practice (Manzini, 2015), focuses special attention on working with false affordances in two ways. As I have shown, the processes surrounding the formation of CLTs were designed to create housing professionals out of voluntary collaborative community efforts. The expectation of professionalising groups and their interactions with the wider policy instrument infrastructure helped legitimise these organisations as policy instruments across different layers of government. However, in practice, this created tensions between the potential innovative and experimental solutions emerging from CLTs and those motivated by the model's wider collaborative vision.

On a second level, the collaborative and co-productive nature of these projects, by requiring a formal and high degree of commitment from those involved, prohibited others from participating. This was further reflected in the rigid expectations regarding the nature of interactions and how they became formalised in the organisational and legal arrangements of CLTs. The impact of these false affordances

also prevented the NCLTN from clearly articulating the benefits of CLTs to a larger audience and to a group of direct beneficiaries who might in turn be encouraged to further co-create value and co-produce outcomes for the wider CLT vision.

The impact of false affordance, experienced in the rigidity created by having to comply with policy requirements, was also reflected in the expectations of the NCLTN as an intermediate organisation. As I discussed, the NCLTN was caught between operating a grassroots membership network and acting as an intermediary policy instrument responsible for stewarding a sector with a potentially innovative model for affordable housing. The findings, however, demonstrate how pressures internal to the NCLTN — from its membership — and external to it — from existing policy instrument infrastructure — prevent the sector from achieving scale. This became evident in the resistance with which many members of the organisation met the project for redefining processes used to support projects, to harness further demand and to streamline projects.

From a governance and policy instruments perspective, the findings highlight the challenges faced by the voluntary sector involved with public service innovation and the need to develop organisational capabilities to jointly lead and deliver change at scale. As Manzini discussed in his work, the evolution of collaborative organisations does not mean that their original motivations disappear but that instead, they ‘appear in different operational modalities (based on as many enabling solutions) [...] with different meanings, and therefore calls for different mixes and motivations’ (Manzini, 2013:p.169).

Returning to research gaps identified in Chapter 3, the findings point to the importance of design research in considering not only the services designed as an output of design practice but also the organisational models needed to steward socially innovative forms of delivery. When considering the case of scaling social innovation and how it interfaces with policy instrument infrastructure, the matrix provided by Manzini (2015), which considers the nature of collaborative interaction as

the relational intensity against social tie strengths, provides a useful starting point to inform design practice (Chapter 3: p.93). However, as design project 3 illustrates, this also needs to be complemented by a broader understanding of the affordances or the impact of false affordances that shape the nature of relational intensity and social tie strengths within these collaborative arrangements that they are seeking to moving forward with.

7.5.2 Design for experimentation: Infrastructuring diffuse networks

The organisational challenges discussed above confirm how social innovation, as it interfaces with existing policy instrument infrastructure, means that design practice at this level involves the design, at a systemic level, of many-to-many interactions at the level of networks. In addressing the research gaps identified in Chapter 3, the research findings in design project 3 highlight the need for design practice at a meso level of policy making to work with networks and explore value and flows of value, not only within but also between these networks.

As design project 3 demonstrates, the current pathways for CLT development and delivery effectively sought to mimic traditional routes available to large, established providers, such as HAs, regardless of the potential for innovation to address policy outcomes that these projects could bring about. To achieve scale and gain legitimacy from a range of stakeholders, the NCLTN and CLTs had to find ways to fit into institutional moulds that were ill-prepared to accommodate them. This included not only a fit at a national level but particularly as CLTs interacted and interfaced with local policy frameworks.

Addressing issues of intermediation with governance systems and their instruments is a key component in facilitating this process and facilitating the role of government in interfacing with organisational instruments and stewarding these interactions more effectively. The failure to address issues of intermediation, from a policy instrument perspective, impacts the viability of individual projects and the

community-led sector's attractiveness as an alternative for delivering housing supply at scale.

The design proportions developed as part of design project 3 developed mechanisms to scale the NCLTN's services and support structure as a collaborative and diffuse network. It sought to harness motivation already attracted to the CLT purpose and to expand its collaborative potential for wider engagement, outreach and value alignment. It deliberately avoided developing toolkits to increase accessibility to existing CLT processes or to build community capacity for project delivery. Efforts instead involved 'infrastructuring' enabling functionalities (Björgvinsson, Ehn, & Hillgren, 2010) at different levels of the ecosystem to support exploration of different models and alternatives to mobilise support, raise finances and deliver projects on the ground with enough flexibility to cope with a range of CLT projects and scale demands.

The solutions also created a mechanism to accelerate projects and help the NCLTN craft alignments and capacity at network and hyper-local scales. Defining routes and pathways for acceleration of policy outcomes, rather than stipulating legal and organisational outputs, emerges as a key governance and policy instrument capability requiring further investigation beyond design project 3. The routes act to accelerate key project milestones and barriers associated with them to incentivise the development of cross-sector partnerships between local government, developers, building experts and financial institutions. Infrastructuring pathways need to be sensitive to the scale and nature of the sector they are trying to support to ensure that the innovation and experimentation typically associated with social innovation and with emerging collaborative organisations are not stifled by processes too rigid to accommodate challenge and change.

7.6 Summary of Findings for Design Project 3

To conclude, design project 3 highlights the challenges and opportunities for instrument design and government intervention which utilises organisations as policy instruments within the wider context of social innovation. Despite the potentially important role of technology in social innovation debates, of importance for design project 3 were the operational and organisational implications of adopting HCD and co-creative practices and how these in turn reshaped organisations (Junginger, 2008).

This chapter explored the role of design practice and analysed interaction in addressing the evolution of CLTs as an alternative delivery model for affordable housing and the NCLTN as an intermediary organisation maturing from a grassroots movement into a policy instrument and viable housing development model. Design project 3 illustrates the challenges involved in appropriating and repurposing existing policy instrument infrastructure that makes use of organisational, legal and fiscal instruments to scale socially innovative models within the community-led housing sector. In this context, the application of design practice and its effectiveness saw challenges to the operational and organisational models and processes required by policy and which the NCLTN and individual CLTs sought to replicate. It also exposed the potential, as an outcome of design research, of redefining, from a policy perspective what housing affordability entails in the context of diffuse forms of governance.

In the case of the NCLTN, and in part due to the scale and scope of the interactive nature of designing collaborative and diffuse networks, design practice needed to engage with legacy systems and considerations of poor fit for future innovation. The tensions highlighted in the findings reflect wider changes from within the community-led housing sector and its recognition that the grassroots nature in which it is accustomed to operating might also no longer be fit for purpose for the potential capability and capacity it affords as a radical solution to the question of affordable housing supply.

Design project 3 also unpacked the governance implications from

an instrument perspective by adopting a collaborative and diffuse model for achieving public value. In this circumstance, design project 3 demonstrated that the design of policy instruments to support collaborative and diffuse models of governance required more than the creation of subsidies and legal frameworks that could bring legitimacy, accountability and probity to these organisations and to the wider sector. Instead, due to the complexity and length of these projects, design practice involved designing pathways and routes to accelerate and demonstrate the impact of CLT projects on the ground and to create the network effects to increase their output, scale, visibility and ultimately the viability of the projects and the wider sector. As such, it involved utilising instruments of an organisational nature (co-opted either to deliver policy goals or to create new instruments) to intermediate and steward innovation. The discussion illustrates the challenges in replicating existing instrument infrastructure and the constraints it places on the innovative and collaborative capacity of CLTs as emerging solutions. It also highlights the barriers created for innovative organisational models with the potential to redefine governance arrangements and the relationships between the state, civil society and the private sector. This chapter demonstrated the potential new roles for government in ‘infrastructuring’ (Eln, 2010) — that is, providing a platform of infrastructure and functionalities (digital, technical, legal, financial, operational) to support innovation and experimentation.

Working with interaction as false and perceptible affordances aided the analysis and guided the projection and conception of a series of design propositions to harness latent demand. Furthermore, it explored how the collaborative model embedded in the CLT process could be moved away from professionalising members into becoming housing providers towards harnessing motivation for the wider vision associated with community-led housing. The design practice has also generated opportunities for stakeholder exploration within the system of existing and potentially new interactions for value co-creation. In the chapter that follows, I conclude the overall analysis regarding the contribution of design projects 1, 2 and 3 to future design practice.

In what follows, I will examine the evaluation of design project contribution in terms of the propositions themselves, the role of design and the wider policy instrument design and intervention.

8 Design Project Evaluation

Following the in-depth analysis of design projects 1, 2 and 3 in Chapters 5–7, this chapter considers findings from the evaluation interviews that relate to my original research framework (Section 4.5) and the research gap identified in Chapter 3. The analysis which follows examines results from a series of semi-structured interviews conducted following the completion of each of the design projects. In total, 36 in-depth interviews were conducted (please see Table 4.1) with stakeholders, which included those who commissioned the projects, practitioners and academic experts in the areas of the design interventions.

In a deliberate attempt to examine how design practice and research contribute to a policy context, none of the people interviewed had a design background. They were asked to consider broadly how the approach taken as part of the delivery of the design projects contributed to better understanding of policy delivery, implementation and design. As I will discuss shortly, design project 1 explored existing policy instrument infrastructures, including instruments of an organisational, fiscal and legal nature. Its outcome was to produce guidance on instrument implementation and the calibration of a policy instrument infrastructure by creating pathways for delivery and the design of new instruments to assess and improve the delivery of existing policy outcomes. In contrast, design project 2 designed a new policy instrument capability for regulation, using open data to shift the emphasis of regulation away from compliance towards a demand-driven approach. Finally, design project 3 considered questions of policy fit and innovation at a systemic level, assessing the effectiveness of an existing policy instrument ecosystem in supporting the scale and impact of socially innovative solutions. The findings from

the evaluation interviews will feed into the next chapter, where the contribution to the overall research framework within the context of each of the design projects as well as in relation to emerging themes for final analysis and discussion of the wider contribution to theory and knowledge will be considered.

8.1 Leveraging Policy Instrument Infrastructures

Design project 1 worked with affordances and HCD practices to assess and repurpose an existing policy instrument infrastructure to improve policy outcomes. It demonstrates how to develop affordable housing policy using design practice to find leverage points through complementary structures and processes to afford citizens with choice. The results also demonstrate, in the context of policy instruments, the need for design practice to move beyond producing alignment within services towards alignment amongst existing systems and networks. Instead of producing a definitive collection of policy solutions for the problem of housing affordability, design project 1 redesigned a set of policy instruments to create multiple pathways and opportunities for system acupuncture, therefore allowing for policy instrument calibration and innovation at a series of levels, which I will discuss below.

8.1.1 Developing design capabilities through interaction

The interview results indicate that design practice significantly contributed to exploring the nature of an overall policy and instrument infrastructure, such as shared ownership, in how it was experienced by end users and became operationalised by a series of policy instruments of an organisational, fiscal and legal nature. The evaluation interviews highlighted how design practice, which explored the granular transactions between front-line staff and users, provided a means to unpick, from a quantitative perspective, these operational practices and procedures for future policy instrument design and intervention. Design practice helped examine how constraints created by instrument implementation practices shape the behaviour (and, therefore, the interaction) between staff and users and, in turn, affect

overall instrument deployment and policy impact achievement. An example of this was found in the constraints both HAs and shared owners faced as a result of conflicting regional and local affordability thresholds, which in part contributed to selecting a demographic which later became disadvantaged as a result of accessing shared ownership (Section 5.3.3).

As mentioned by an HA director, design research was unlike standard service reviews, in which the starting point is examining existing procedures to assess risk and compliance with process and statute and which are not in any way transformational to the services under review. Instead:

‘[Design practice] was a mechanism to cut through all this. Breaking down the process into interaction and transactions was very valuable. So now we measure customer/user effort at each stage of interaction.’ (HA director)

According to this director, the design approach examined interactions that were broken down into a series of service interfaces occurring in sequence over a continuum of transactions. These often become hidden if the analysis is focused on end-to-end operational processes that are usually examined as a whole. Furthermore, directors and senior managers noted that service reviews often face the challenge of getting staff to ‘let go’ of organisational practices and processes, noting that staff often use these processes to control the scope of services and to constrain opportunities for future innovation. HCD practice addressed some of these challenges:

‘Adopting this approach gives you a way to challenge ways of working and understand what staff hide behind the process and where people are struggling.’ (HA director)

From an instrument design perspective, design practice not only allowed policy instruments to be examined and experimented with at a granular level to assess policy calibration and adoption but also, as we will see later, uncovered opportunities for future service and policy instrument redesign by examining affordances within that existing

policy instrument infrastructure.

The interviewees also noted how design project 1 highlighted a significant correlation between staff and user interaction and satisfaction levels at key stages of service delivery. Furthermore, senior managers reflected on how their service interfaces intermediated with policy instrumentation and the organisational impact of when these were misaligned. Here, the impact of adopting a design approach marked a noticeable change in staff understanding towards 'designing experiences' for users and staff rather than complying with statute.

This is significant for several reasons. From an organisational perspective, it demonstrates the ability of design practice to evaluate interactions from a quantifiable and relational perspective and to understand how these shape and are shaped by the processes that are the backbone of services and instrument deployment. Instead of approaching processes as a list of tasks with which to comply, design practice explored processes and the interactions involved in them as embedded within the service and experienced through a range of service interfaces over time. From an instrument perspective, this indicates a shift in considering guidance for policy instrument implementation. Especially with design project 1, in which service delivery occurred over an extended period, design practice involved the creation of pathways for policy delivery as opposed to compliance and risk management through punctual interactions. Design practice drew attention to how instruments deliver policies as services, demonstrating what is involved in instrument deployment and adoption to identify levers for future instrument calibration and change.

In addition, those interviewed drew a significant distinction between previous attempts at resident engagement in decision making — also recommended in the guidance for policy instrument implementation — and an HCD approach. It was their view that resident involvement practices tended to be linear in nature, focused on engagement per se rather than on the service outcomes produced as a result

of co-producing services in a collaborative fashion. According to interviewees, traditional approaches to resident involvement tended to start with a blank sheet of paper, which often led users to revisit complaints rather than encourage ideation or a wider understanding of the organisational and operational constraints faced by HAs in delivering services.

Conversely, the use of design probes and co-creation methods helped facilitate a process to reveal a range of user needs, expectations and wants and to explore these in detail. For the interviewees, the process felt open-ended and circular in nature, supporting concept development through several iterations of prototypes of proposed service and programme interventions. Sensemaking as a way of exploring user behaviour and mental models (Section 3.2.4) was effective for several reasons. It highlighted and created empathy for latent user needs against organisational and operational constraints and opportunities, which helped build confidence amongst staff and users to manage expectations about potential changes and buy-in for the emerging outcomes from the design practice. Connecting with users' and staff members' mental models also helped identify actual user needs, as opposed to wants, and highlighted how these needs framed opportunities and barriers for future service innovation. An example of this, as was suggested by the interviewees, included how users applied self-selection when assessing the shared ownership offer against their own financial circumstances and how they might use the offer to best achieve their aims. Unlike other traditional research methods, design practice provided detail regarding how poor policy instrument fit was experienced by direct beneficiaries, the hardship caused and their coping strategies. It used this not only to highlight the impact of poor policy fit but also to uncover the hidden and perceived affordances driving future design interventions.

'Implementing this in a transformational way is very hard, but even harder is to get thinking about this afresh!' (HA director)

The application of affordance to design practice revealed how staff and users interacted with policy instruments as services to achieve

aims other than those intended in the original policy goals. As shared ownership is a policy instrument implemented over twenty or more years, users looked for and found affordances throughout the process as their own circumstances and needs changed over time. This was evidenced by how shared owners engaged with the resale service not to buy more shares or sell their homes but to obtain a valuation for their property or to assess their financial options. This example reveals how the users' inability to manifest affordances not only frustrated their service experiences but eroded their trust in and expectations of policy instrument outcomes and also of staff delivering shared ownership as a service. Typically, junior members of staff responded to attempts to utilise service affordances by getting users to comply with organisational processes and statutes. Senior managers and directors, realising these affordances, instead saw them as opportunities to transform their offers to users, potentially saving time and money and better equipping front-line staff to transform service delivery. In this case, it presented an opportunity for future service interventions to review shared owners' financial commitments, given their circumstances and the asset appreciation of their share, supporting shared owners to better understand and navigate the financial decisions associated with shared ownership.

8.1.2 Evidence and a business case to reset policy agenda

Officers also noted how the design practice gave HAs the capability to construct and bring to life potential service opportunities by examining the demand of users' needs or expectations and the design of interventions (digital or programmatic) and policy instrument interventions to sit alongside shared ownership. Most importantly, interviews noted that design methods used to visualise and bring to life design concepts gave the senior management team the ability to build a case for improving customer experience, providing an evidence base to lobby national and regional government to change policy instruments at strategic and operational levels. This occurred on more than one occasion, with HA directors referencing project findings in discussions with policy makers to constructively question statute, legal and other policy instruments and to develop a business case for how

HAs could work with government to increase the value of government subsidy and, in effect, co-design policy instruments alongside them. The design project findings, in working with affordance, not only provided the ability to demonstrate viability but also created an evidence base to address user needs and expectations.

‘As a result of the design process, we realised shared ownership was perceived as a market offer, but instead our organisation and those in charge of policy treated it as a tool to guarantee the security of government investment. For us, what was needed was to stop tinkering with the policy implementation and instead work to structure a market offer.’ (Senior manager)

‘It essentially gave us a really strong business case — both internally to get sign off from the board and with government and to call for changes at a policy and strategy level.’ (HA director)

The interviews also highlighted how the design propositions, in addressing user needs by aligning these to the HAs’ strategic aim, helped demonstrate public value based on user demand. On more than one occasion, the senior director and senior manager mentioned the benefits of working with user demand as a point of departure instead of first devising solutions to comply with policy instrument frameworks and implementation guidance. As a highlight, the findings provided evidence to HAs tasked with policy instrument implementation to adopt a more collaborative and conversational role vis-à-vis policy makers in devising the best pathways for policy delivery and instrument design.

According to interviewees, HCD practice drilled down to the ‘root of the problem’ and, in doing so, dispelled assumptions about the reasons behind shared owner dissatisfaction. For example, interviewees commented on how the findings were able to demonstrate that a mismatch between policy instrument implementation and how the product was marketed set unrealistic expectations amongst shared owners, which later evolved into other forms of dissatisfaction with the tenure over time. The ability of design to generate empathy for users and staff was often cited as helping create an even stronger case

for change with the board and decision makers at a policy level. The impact of the design findings was increased further by working closely with the commissioning managers of both stages of design project 1 to triangulate project insights with market data and financial analysis.

‘There were initial concerns regarding the sample size used in the design project. Despite the low number of people engaged throughout the design practice, the results were deep, detailed and very rich, which could be easily backed up by numbers we held internally but which we could not interpret.’ (Senior manager)

Returning to my research framework, the solutions produced in design project 1 responded to perceived and hidden affordances to calibrate policy instrument implementation practice and future instrument innovation in how these came to be experienced at both service and operational levels. The do it yourself shared ownership (DIYSO) option (Section 5.3.4) exemplifies this. Following the initial stage of the project, the HA advertised the DIYSO pilot and received over 50 applications, which were successfully vetted. This gave the HA confidence in market demand and evidence to negotiate with the Greater London Authority for the creation of a subsidy scheme to pilot DIYSO as a new instrument for future policy intervention.

8.1.3 Rethinking instrument design and policy problem definition

Results demonstrated how part of the overall dissatisfaction and lack of mobility within the sector was due in part to a failure in policy fit but also to a lack of understanding of how to manage this variance in user need. According to interviewees, design practice highlighted the challenges involved in policy implementation when there was wide variance in user need and, in the case of shared ownership, when these were also affected by structural changes in the economy. The findings brought to life the different ways in which these impacted the owners’ lived experiences of shared ownership over time. This was the case with those at the lower end of affordability thresholds. There was a need to ensure they were not left behind or at a disadvantage from having accessed shared ownership. Design practice highlighted,

through the market opportunities it uncovered, how to address variance in user need.

‘The design process made me think differently about shared ownership. My views changed quite significantly over the course of the project. It reinforced what had begun to emerge in my thinking — highlighting an inherent problem with a social policy question — that it is easy to make it work for those who don't need a lot of help but much harder to make it work for those who do require more help.’ (Senior housing policy officer – Greater London Authority)

For the senior policy officer in particular, attempts to address users' differing needs with a standardised operational model and policy intervention meant ‘doing poorly for those needing the most help and being too generous to those requiring less support’. This demonstrates the impact and challenge of the ‘silver bullet’ approach to policy making and design, discussed earlier in Section 3.2.5. In the case of shared ownership, it demonstrated how the application of policy instruments as a standard to be complied with generated greater policy challenges, because they were calibrated over the years to address different policy goals, changing beneficiaries and beneficiaries' circumstances and changing economic circumstances.

Significantly, from a strategic level, the findings also raise questions of policy problem definition in how winners and losers of particular policy interventions come to be defined and identified. Both HA officers and policy officials acknowledged that design project 1 (particularly in the second phase of the project) provided strong evidence of user self-selection according to how best users matched and found affordances within policy instrument infrastructure. It strongly confirmed the contribution of design practice and research, including affordance, to support policy instrument evaluation and design.

‘Policy makers are wary of identifying this for policy making, but people identify that themselves, and it is important this is understood.’ (Senior housing policy officer – Greater London Authority)

The co-creation sessions used to prototype emerging design concepts provided insight into how users exercised choice and the compromises they were willing to make based on their expectations and mental models of shared ownership. Providing insight into users' rationale helped address policy makers' fears of making a value judgement when developing policy options. As a result, the design process designed responses to current policy instrument infrastructure that were specific to the context, users and circumstances faced.

8.2 Experimenting with Affordances

The analysis for the second design project involved examining the design of a new instrument capability and how it sought to engender new types of interaction to address imbalances of information in the housing market. The evaluation interviews assessed not only the contribution of design practice to creating a new demand-driven regulatory instrument for rent controls but also the challenges involved in its deployment.

8.2.1 Experimentation in instrument design to define policy goals

‘Taking a design point of view might make you less constrained by the explicit or implicit framework of economics or welfare economics.’ (PRS specialist and senior housing studies researcher – London School of Economics)

When asked to consider what made the design approach of design project 2 unique, interviewees most often highlighted that policy making activity and instrument design usually approach policy problems from the perspective of either alleviating poverty or achieving economic efficiency. In contrast, the design process did not have as its starting point predefined political or ideological assumptions regarding the policy context or the policy instrument choices available for design. This, however, did not mean, from a design practitioner's standpoint, that there was lack of awareness of the

policy and of the political choices involved. Instead, an HCD perspective served as a point of departure for experimentation and innovation.

Compared to housing studies, which use analytical and empirical enquiry to examine the behaviour of housing markets and the effect of policy instrument interventions on markets, in the view of the interviewees, the design practice in design project 2 adopted a first principles approach to the development of solutions. Combined with theory of change, design practice, particularly in the research and synthesis phases, worked to design the best route towards an envisioned end state and social impact goal. Design practice worked iteratively to assess opportunities for value creation in addressing user needs and opportunities afforded by and in the housing market.

In addition, design practice asked fundamental questions about the policy goals of the instruments being designed. For instance, in questioning who should be housed in the first place, design practice challenged whom the policy interventions were aimed at and why. For the senior housing studies researcher, decisions of this kind, made as part of the design process, were closely related to higher-level political decisions. This potentially raises questions about the democratic legitimacy of design practice if it were to be applied at scale to policy making activity. It also begs the question of who sets the scope of this activity and defines its goals and, more importantly, whether design practice is currently sufficiently equipped to address this.

Although interviewees saw the benefit of working from a first principles approach, it was also important to develop critical self-reflective practices to address the issues around bringing our bias into the design process. To mitigate this, interviewees suggested that the design process needed to work with clearly identified social problems to ensure that design outcomes could also act as tools to examine and, as was the case with design project 2, to align solutions to policy problems within the PRS and its social and political ramifications.

‘[It] identified a vision which a lot of people can buy into and, in this case, it’s straddled the line between the egalitarian and

the efficiency folk.' (PRS specialist and senior housing studies researcher – London School of Economics)

'The designer can advise on implications, but these decisions are inherently political. The role of the designer would come in the closer you get to the selection and design of the instruments to achieve these goals and mechanisms for working them on the ground.' (PRS specialist and senior housing studies researcher – London School of Economics)

The interviewees highlighted that the designers' role became more relevant as it got closer to the design of instruments and solutions to achieve these policy goals. By designing the pathways for policy delivery, the policy instruments themselves became key in helping to define policy goals and the overall vision for policy and service delivery, confirming that, as I discussed in Chapter 3, instruments not only define but also manifest policy goals.

8.2.2 Redesigning regulation as a policy instrument capability

Interviewees confirmed the strong contribution of design and how it conveys complex legal, contractual information and processes to make them more accessible and intelligible to users. The application of open data to the design process helped users and stakeholders visualise and engage with complex information, which in turn helped address imbalances of information. From a policy instrument perspective, it potentially creates a new demand-driven regulatory capability that shifts the 'weight of the state' away from compliance towards enabling different types of interaction.

'The design proposition certainly provides a starting point for a tool for rent regulation as a London Rent Commission.' (GLA senior policy officer)

According to the interviewees, design project 2 was innovative in its attempt to create a parallel rental market instead of a bureaucratic process or procedure. It sought to address a policy problem and the state's perceived inability to intervene by deploying a new regulatory capability, using the disruption potential of open data while co-opting

practices already in operation within the rental market to design new forms of interactions. This, according to interviewees, was more challenging.

‘RentSquare definitely reinterprets the problem, but it is a difficult sell. The main problem with the PRS is that there is an industry which controls the market, making it a very difficult market to address.’ (GLA policy officer)

‘Success will certainly be judged by scale of adoption and net effect on rents.’ (PRS specialist and senior housing studies researcher – London School of Economics)

‘The danger with the design project is that this is not how markets work, although you can design a cute little model (which is fun), it is not reality. It would never attract critical mass of landlords and will always be a niche product for socially minded landlords.’ (PRS specialist and senior housing studies researcher – London School of Economics).

The interviewees underscored potential challenges involved in wider market validation. According to them, this would determine the success of the design solution as an enterprise and as a policy capability, highlighting the issue of scale as a critical challenge and consideration for future policy instrument design that involves external stakeholders for implementation.

8.2.3 Leveraging policy resources: Open data as public value

‘I can imagine all kinds of behavioural manipulation [with open data], but there is also huge potential.’ (PRS specialist and senior housing studies researcher – London School of Economics)

For the senior housing studies researcher, the application of open data to the design process offers significant potential to future instrument design, yet its impact is largely untested. According to her, the creation of a data register and its formats would be a first step towards assessing its true potential. Despite this, interviewees suggested that the design proposition turned data points into a tool for market

intervention.

‘Trying to even define what are fair rents is innovative. The danger is to end up with a product that is too clever. The granularity makes things complex, but if you simplify it too much, there is the risk you lose its competitive and policy credibility. But that is no different to policies — a lot of it is too clever for its own good — and too engineered. You need a bit of simplicity.’
(GLA senior policy officer)

All those interviewed suggested that the application of open data brought legitimacy to RentSquare, especially given that current knowledge about rent levels is ‘very patchy and weak’, which in itself is a key policy problem. In doing so, RentSquare created further public value by generating data for future policy making. From a policy instrument perspective, interviewees suggested that questioning how rent levels should be set was innovative in and of itself.

A challenge for design project 2 concerned the ownership of data and questions about the balance between the granularity and anonymity of data outputs. Housing and policy experts recognised open data’s value as a public asset and suggested that its application had the potential to create a ‘trojan horse to provide a neat regulatory function’. For them, it was important for RentSquare to produce a rent pricing model with sufficient spatial scale and different levels of granularity to build an evidence base for policy decisions and future interventions.

According to the housing research expert, the design proposition proposed to function as a quango — not unlike other instruments that support policy intervention in housing. However, for it to reach its impact, ‘it needs to “crack” the market by scaling or fitting neatly with a regulatory function of providing rent benchmarks’. Both policy advisors and the investor saw this as an area in which government could ‘weigh in support to bring scale and legitimacy to the proposition’; for instance, by making it compulsory for landlords to provide information about charged rents.

8.3 Affordances for Scaling Collaborative Governance

Design project 3 considered instruments of an organisational nature in how they interface with instrument infrastructure while facilitating policy delivery and implementation. In particular, design practice worked with false and perceptible affordances to examine how the role of the NCLTN as an intermediary organisation could be enhanced to support the CLT model of community house building and could mature as a form of social innovation.

8.3.1 Uncovering untapped needs and resources

The interviewees discussed how design project 3, by mapping stakeholder and user journeys and the nature of these interactions at a systemic level, uncovered valuable insights about the nature of interaction and where resources were concentrated within those different levels of interaction. At an organisational level, visualising these journeys and value networks helped to engage with the findings and ‘crystallise results’ in people’s minds.

‘Coming from the user perspective, it added real value. When we develop and deliver services, we have this in mind, but it is difficult to put ourselves in other people’s shoes. Through the process, we found out new things and things we definitely did not know.’ (Head of NCLTN)

‘The process made it very clear to us — we did not know who our user is and that most of our resources are used by umbrella organisations and not our end users.’ (Head of NCLTN)

‘What we found from working with this sector is that, [for] the most part, they are competing against each other, trying to safeguard their processes and the merit of their approach rather than collaborating with each other. The distinction between different models of community-led housing is not something people interested in living in one of these homes sees. In fact, they don't even clearly understand what the term community-led housing is all about. Understanding how to get this message out and how to capture demand for community-led housing solutions by the end user is key if the potential of the sector is to deliver to its full potential.’ (Policy researcher – BSHF)

According to the technical advisor and the community-led housing expert, the design process involved continuous action research and working with 'lots of fuzziness' to uncover and build evidence about the prejudices and cultural assumptions from potential users, policy makers and even from within community organising stakeholders that permeated these projects. As a result, interviewees suggested that the practice was able to design flexibility and malleability to find leverage points and to develop idea concepts that made use of this fuzziness, which is 'something community-led projects have to manage and which can be very frustrating for those in government responsible for policy making'.

All those interviewed recognised the contribution of the design project in highlighting a gap in how the NCLTN, as an intermediary organisation, was failing to tap into a potentially larger pool of demand that some felt would create the critical mass to support the sector in achieving its full potential. The head of the NCLTN did, however, highlight a concern shared by other NCLTN board members regarding how the sector would cope with higher demand effectively. All acknowledged this was a critical finding not only for the NCLTN but also for the wider community-led housing sector.

8.3.2 The challenges of interfacing existing policy instrument infrastructure

All interviewees recognised that CLTs operated at the edge of government. As such, they required an intermediary organisation such as the NCLTN to interface between the community sector and the policy instrument infrastructure at regional and national levels and in the wider housing market. They recognised the need for a function of this kind to de-risk projects by ensuring that projects do not compete with one another and to create a supportive political context and an accompanying instrument infrastructure to encourage the right financial climate for these projects. Despite recent government action in recognising CLTs through legislation and subsidy programmes, all interviewees felt that a lot more was needed to create the right

instrument infrastructure to streamline the delivery of projects on the ground.

‘Policy makers and civil servants operate under the premise that if you create the right policy, things will happen, but they don’t. The question of how to devise a system that works is never asked in the policy making process — you would need co-production for this.’ (Technical advisor and community-led housing expert)

‘In interest of designing good policy, those cultural, power and prejudice assumptions need to be featured.’ (Technical advisor and community-led housing expert)

‘What you can’t have is proliferation of under-resourced organisations competing for space and how to balance professionalisation and efficiency?’ (Policy researcher – BSHF)

Interviewees noted that tensions between instruments deployed at national and local levels set different expectations and create challenges both at an operational level for CLTs and for the sector as a whole. They reported that incremental policy changes at a national level and the failure to engage with policy makers at a local level created a disconnect between projects and local government, leading to further fragmentation across the sector. This disconnect is due in part to the very processes used to develop policies and design instruments, because they failed to respond to the specific circumstances faced by CLTs as a sector. The interviewees reported how design practice helped to build evidence regarding poor policy instrument fit and how it helped to design interventions at the organisational level and at the level of the wider ecosystem of CLT delivery to support future policy development.

8.3.3 Policy instruments for networks and scale

‘Government and policy makers don’t like to fund infrastructure bodies, and the current instruments are too fragile to support scale. Governments like, instead, big programmes which are linear in nature moving from solution to implementation and evidence. But if they wish to create a network, they need a

different policy infrastructure and framework.' (Head of NCLTN)

Those interviewed and those who worked directly with CLT projects on the ground suggested that the CLT process was inherently political, involving agenda setting at a local government level. They highlighted the need, therefore, for design practice to harness future political support for CLTs as a model and as an instrument for policy delivery. Regarding the design outcomes produced, both the technical advisor and the community-led housing expert expressed concern over the difficulty of designing a solution to accelerate CLT projects, given that the nature of these projects varies significantly, as does the political process on the ground. However, all recognised that the sector as a whole needed consolidation and that a framework to accelerate projects would support key elements of project delivery. They identified a design challenge to ensure that this framework could safeguard uniqueness and safeguard the experimentation involved in CLT projects. Despite this, interviewees believed that a mechanism of this sort was important to test, in order to build a track record for and to demonstrate expertise to create a delivery pipeline of CLT projects across the country and to build the resilience of the sector.

According to the interviewees, the design project brought a different perspective to how an organisational instrument such as the NCLTN could bring benefit to individual CLTs and the sector as a whole. Rather than designing processes for actual delivery, for the head of the NCLTN, the design process helped shift the conversation towards a change at a strategic level and towards delivery through a peer-to-peer collaborative model.

According to interviewees, the design process further highlighted how the current policy instrument infrastructure at national and local levels created 'moulds' that CLTs failed to fit into. It showed the need for the sector as a whole to lobby government to co-design a 'new mould and a new box' of policy instruments more adept at what CLTs, as a form of social innovation, can deliver.

8.4 Common Findings: Design for Policy Instruments

This chapter examined findings from the evaluation interviews of the design projects, which provided significant insights and highlighted several challenges to the application of design practice in the context of policy instruments. I will conclude this section by providing a brief summary of overall key findings that will be considered in more detail in Chapter 9.

8.4.1 Policy instruments as an interactive capability

Interviewees from across the design projects suggested that policy instruments designed for policy intervention had as their core purpose the intention to manage risk and ensure compliance. This meant that policy instrument implementation was punctual in nature. Despite this, the evaluation interviews demonstrated how instruments came to be experienced as a continuum of interactions as opposed to punctual, fixed, transactional interventions, regardless of whether these were regulatory, fiscal or legal instruments. The findings highlight how design practice, in working to respond to the interactive nature of policy instruments, moved the design for policy instruments away from processes and procedures with which to comply and towards designing capabilities for future new policy directions.

8.4.2 Designing as infrastructuring policy intervention

The evaluation interviews also highlighted the importance of approaching the design for policy instruments as systems and infrastructure as opposed to linear processes. The design projects' outcomes and evaluation interview results reflect a need to increasingly explore the interfacing with and of the interactions between government, its governance arrangements and the organisation involved in the delivery of public value and benefit.

8.4.3 Social conversation as lobbying and creating a business case

In all three design projects, the design outcomes gave organisations a tangible platform from which to convey the need to redefine policy goals and instruments and to demonstrate a business case for change. Furthermore, these design project outcomes and findings

became even more powerful when triangulated with quantitative financial and market data applied to verify need or to quantify the market opportunity for new propositions. In areas where the design propositions intervened in less established sectors, the initiation of a social conversation was more related to lobbying policy makers and demonstrating latent demand present in policy affordances. For policy instrument design, and for that of my research framework, this is significant to drive instrument adoption and visibility as the first steps towards building the legitimacy and the viability of future instrument designs.

8.4.4 Design practice and the role of vision

The design projects did not start from an assumption regarding the best approach to take in policy and political perspectives and contexts, which carry with them a range of assumptions about the policy instruments available for intervention and the nature of interactions which result from it. Instead, it began by asking fundamental first principles questions and was therefore able to explore the nature of interactions in its own right. The design decisions of this kind, made as part of the design process, raise challenging questions about democratic legitimacy if applied at scale to policy making activity. It is with these considerations in mind that I will now turn to exploring these findings in Chapter 9, in the wider context of my PhD's contribution to knowledge.

9 Discussion & Analysis

Returning to the overall thesis research question, I have examined the contribution of design research, the design for services and the design for policy to understand the interactive nature of policy instruments and to develop design capabilities in response to them. As I have demonstrated throughout, traditional policy making analysis and research into public administration place emphasis on the specialisation of knowledge and on increasing the precision of processes for policy implementation (Section 3.1.1). The knowledge apparatuses which have been created to support these activities are limited by their ability to foster the design of new policy alternatives and to respond to the increasingly interactive nature of policy problems (Section 3.1.2). Despite the recognition of the increasingly interdependent and interactive nature of state intervention by the policy studies and the public administration debates, there is a clear gap in the research on how best to develop policy design in response to these challenges.

As I have shown (Section 3.1.3), policy instruments are integral to policy making. They define the scope of public policies and public services, regardless of the governance or the administrative model chosen for policy delivery. As policy instruments involve leveraging resources and developing the capabilities and capacities for state intervention, responding to the challenges outlined above becomes particularly pressing. Their centrality to policy delivery makes the examination of policy instruments and the application of design practice and research to the development of an understanding of and a response to their interactive nature critical to designing future policy interventions.

Design practice and research concerns itself with learning through making, with the creation of value from future possibilities through working with interaction. In recent efforts, however, design research has tended to focus on the contribution of design to policy innovation, where the element of interaction is understood as a given (Section 3.2). Working with interaction from a design perspective within a policy context involves not only exploring innovation in new forms of public service delivery but also of leveraging affordances from new and from within already existing legacies of policy instrument infrastructure (Section 3.4). My thesis, and the research framework created to support this line of analysis, explores interaction from an organisational perspective (Section 4.4) as affordances applied to a service-oriented context.

I return to the theory of affordance to discuss how the interactive nature of policy instruments was approached in design project 1 to design project 3 (Chapters 5–7). I will discuss the learning which emerges from the application of the research framework and from working within different design opportunities arising from policy contexts according to the state's capacity for action and its understanding of beneficiary need.

In what follows, I will summarise the guiding assumptions which underpin my research strategy and research framework and the analysis of findings which propose interaction as the key unit of analysis in the design for policy instrumentation. I will review the contribution of the thesis to research through design as an epistemology (Chapter 4) and the methodological implications of projective research through action research methods (Section 4.2). I will discuss how research through design can contribute to producing knowledge about the application of design research to a policy context and can also assess and design new instrument capabilities by responding to the interactive nature of policies from a design perspective. I discuss how the research framework provides a potential point of departure for approaching the production of design knowledge and theory building. In particular, I combine the main contribution

of the thesis in advancing the theory and the practice of design, the design for services and the design for policy to that of affordance within a service and policy-oriented context, by situating design for policy instrumentation as a meta-oriented practice. I will conclude by discussing the areas for future research that demand further attention. This includes how the development of an understanding, by design, of the materiality of design in a policy context needs to be amplified to include knowledge about the mechanisms which shape the materiality of state intervention.

9.1 Situating the Research Framework

My research framework (Chapter 3) was developed to examine, through design practice and research, the interactive nature of policy instruments and to increase the capability of future policy making. Through a series of practice based design projects, I examined the design for policy instruments where policy instruments were approached as design artefacts and relational entities that both define our experiences of policies and also determine the feasibility of policy interventions (Section 3.1.3).

In line with the interdisciplinary objective of this thesis, I sought to move analysis, from a policy perspective, beyond an evaluative practice, to uncover opportunity areas for policy intervention, instrument design and value creation. Given the socially constructed reality of policies and their instruments, the perceptual clues provided by affordances, available through public service interfaces, enable an evaluation of the compatibility of existing and new policy instruments to the myriad of systems they interact with.

My research framework (Figure 9.1) examined interaction, as affordances, defined as the relationship between possibilities for state action found within policy infrastructure and an understanding of beneficiary need, from an organisational perspective, within the specific policy contexts under consideration. My aim was to provide an analytical tool to guide design practice in the design for policy

instruments and in assessing current instrument design in a range of policy contexts. This was particularly significant, given that design interventions, in the context of policy making and instrument design, involve working within existing policy instrument infrastructure and through a legacy of interventions which have shaped and continue to shape our current forms of interaction and future policy design opportunities. The framework provides an alternative to policy instrument choice frameworks and, as I will show, it places the HCD perspective and design practice, as a form of enquiry, at the heart of policy and instrument design. The distinction between affordances as possibilities of action, which are quantifiable, and their perceived usability, through an HCD understanding of need, proved key to how the theory of affordance can support the future design for policy instruments.

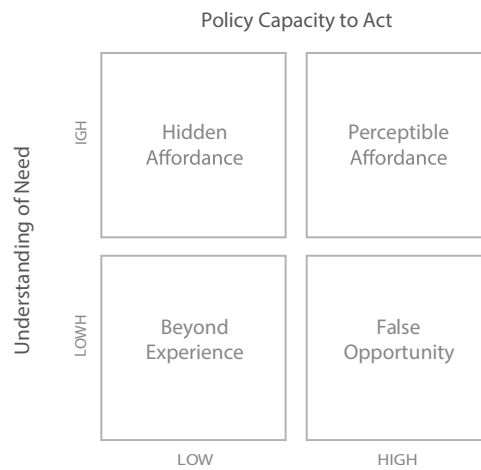


Figure 9.1 Thesis research framework.

The discussion which follows from the research findings highlights the implications of working with affordances from a service-oriented perspective. In the next section, I will begin to explore the research findings, first from the perspective of understanding interaction in design practice before moving on to consider the contribution of design to design for policy instruments and policy making.

9.2 Design Project Findings

In this first section, I summarise the findings from each of the design projects and their significance to the development of an understanding of interaction in the context of my research framework. All three design

projects focused on issues specific to housing affordability as a policy problem. They sought to work with partners in industry to develop policy instrumentation and solutions with a particular focus on how the design practice and design research as well as an understanding of interaction through affordance facilitate new instrument design and policy innovation in this context. The analysis below examines how interaction in the context of policy instruments was approached in each of the three design projects as well as their unique contribution to this thesis (Figure 9.2). In particular, I will draw out the temporal and qualitatively different dimensions to working with different affordances as a key insight from the overall research.

9.2.1. Assessing affordance in existing policy instruments

Design project 1 worked with an existing legacy of policy instruments designed to address housing affordability by increasing access to low-cost homeownership and to redefine interactions within an existing policy instrument infrastructure comprised of fiscal (grant, subsidy), legal (leasehold law) and organisational (HAs, regulatory quangos) interventions. It examined interaction between first-time buyers — as the target population and beneficiaries of a policy instrument infrastructure — and HAs — as service providers responsible for direct government policy delivery, and who, in effect, act as meta-interfaces of policy instrument delivery (Figure 9.2). Design practice worked with perceived and hidden affordances, where interaction was examined as a continuation of transactions and interfaces, which, in some cases, spanned several months and years.

As I demonstrated in Chapters 2 and 5, the effects of the misalignment of policy with an existing instrument infrastructure, as is the case with low-cost homeownership, are well-documented. These were reflected in the design brief objectives, as design project 1 proposed to repurpose an existing instrument infrastructure to address the lack of housing mobility within low-cost homeownership, as an intermediate tenure, and the disadvantages from a lack of liquidity of those policy beneficiaries.

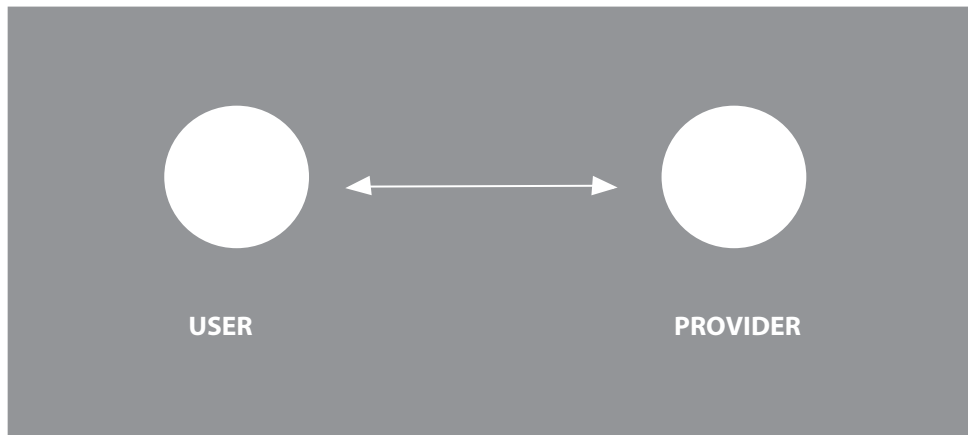
The findings reveal how interaction and service experiences came to be defined by compliance with processes as punctual interventions (Chapter 5 & Section 8.1.3). This not only deeply affected the experience of users as beneficiaries of these interventions. It also became reflected in the satisfaction of staff delivering services. This correlation between user and staff satisfaction helped create a strong business case for change within the HAs and, at a policy level, for designing policy instruments as a pathway and as a continuum of interventions (Section 5.5.1).

The findings evidenced that part of the overall dissatisfaction and lack of mobility within shared ownership were not solely due to a failure of distinct instruments or the overall instrument infrastructure. Shared owner dissatisfaction resulted from a poor instrument fit between the shifting policy aims and changes in user needs vis-à-vis the existing instrument infrastructure designed for policy delivery (Section 5.3.2). This became manifest in the level of misinformation experienced by shared owners, their growing dissatisfaction and the financial disadvantage experienced by a significant portion of those who accessed shared ownership.

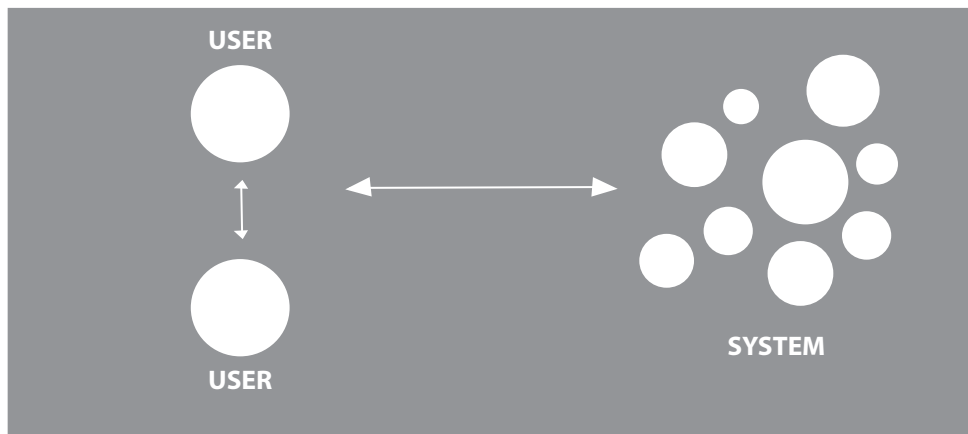
Design project 1 applied HCD principles and sensemaking to evaluate the existing legacy of policy instruments as well as to design a series of policy instrument interventions to leverage resources and to increase the liquidity of housing assets. By working in this way, design practice highlighted user and stakeholder motivations and behaviours, uncovering the causes and how the long-term impact of policy misalignment came to be experienced by shared owners. It also uncovered key leverage points and capacity for policy instrument recalibration within the existing policy instrument infrastructure.

Design practice applied perceived and hidden affordances to assess wider stakeholder and systemic behaviour and service system properties with a view to calibrate and explore the wider adoption of existing and new policy instrument interventions. Working with perceived affordances as existing capacities within the policy

DESIGN PROJECT 1



DESIGN PROJECT 2



DESIGN PROJECT 3

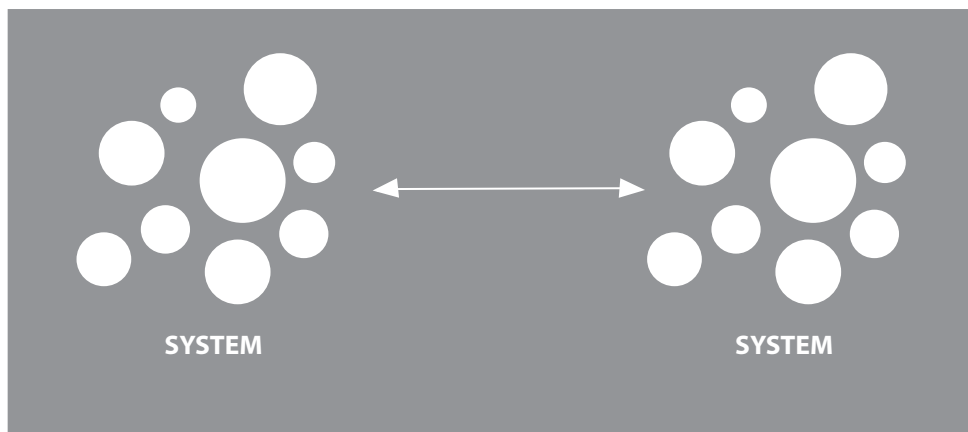


Figure 9.2 Design project analysis of different levels of interaction.

infrastructure, design project 1 built upon the degree of automaticity that could be derived from the liquidity of assets and the current subsidy arrangements which were in place. Design practice also explored hidden affordances to design leverage points as pathways to generate more adaptive and resilient forms of policy instrument intervention. The findings illustrate how design with perceptible and hidden affordances, in a policy context, involves the design of mechanisms to optimise an existing instrument infrastructure and to increase the use and reliance on these systems and, ultimately, to build their resilience. The design outcomes added value to shared ownership assets, as an already deployed public subsidy, by increasing the viability of shared ownership and the sustainability of HAs in their ability to produce greater housing output and to increase the liquidity of shared owner assets and the potential overall mobility within the sector.

In a wider context, the evaluation interviews demonstrated the contribution of design research both as an evaluative tool and as a method of enquiry for the design for policy instrumentation (Chapter 8). Despite the success of the design interventions in addressing issues of policy instrument fit and calibration, the findings highlighted that the net effect of policy misalignment became expressed in an issue of trust with the service offer and policy intervention. As I discussed in Section 5.5.2, the issue of trust presented a key challenge for future design for policy instruments, which informed the practice developed in design project 2 and which I will consider in the following section.

9.2.2. Experimenting with affordances to develop new capabilities

Design project 2 engaged with the contested issue of rent controls in the PRS to design new policy instrument capabilities. From a policy instrument perspective, the design context was one where state interventions in the PRS currently have a limited capacity to address market inefficiencies and imbalances. These become evident in the acute challenges of renter affordability (Section 6.1). From a design perspective, the project involved working with hidden affordances and affordances beyond experience.

Design project 2 explored interaction between two disparate users — tenants and landlords — with the wider housing market (Figure 9.2). Design practice developed a digital service which applied open data, as a design material, to create an innovative demand-driven regulatory capability for rent regulation (Section 6.5). As a design solution, this regulatory capability encouraged new forms of interaction, aiming to address the issue of trust and the balances of power in the interaction between tenants and landlords and within the wider housing market. Design practice, in its approach to open data as a design material and as a policy instrument resource, turned data into knowledge, into understanding, and created a policy capability to generate further public value (Section 6.3.2).

Design project 2 demonstrated that public value can be generated from processing and utilising open data as a new policy resource to inform rent pricing, which is a key policy concern, given the limited data available on current rent pricing levels (Section 8.2.3). Furthermore, design project 2 applied affordance to increase user adoption and the automaticity and trust in the new policy intervention. Design practice, in this case, involved designing for multiple layers of interaction, finding the leverage points in how stakeholders engaged with a digital service to 'satisfice' a range of needs. A significant contribution of working with affordances beyond perception was the application of future forecasting to build on the cognitive recognition of users, based on their previous forms of interaction in the private rented market, for an innovative solution such as RentSquare. This was of particular importance, given that the overall design vision aimed to shift socially constructed narratives about the antagonistic relationship between tenants and landlords towards a more constructive and transparent relationship. Principles of transparency afforded by open data and guided by the social impact vision helped enhance trust in user adoption. 'Value in context' placed a strong emphasis on value, from a policy perspective, as a multidimensional construct (Section 6.5.1), also co-creating trust through the design intervention. As a result, design project 2 potentially shifts a regulatory function beyond an

activity of enforcement of a coercive nature, usually associated with traditional regulatory approaches, towards a more co-productive and deliberative approach, as a capacity to act rather than control or restrict.

Results from the evaluation interviews demonstrated how the design process, not constrained by predisposed governance and economic assumptions, was not limited in its choice of the instrument design preferences which accompany these assumptions. The design practice started from first principles, also initiating a social conversation about the scope of state intervention around rent pricing (Section 8.2.1). Evidence also suggests design project 2 was innovative in its attempt to implement this new instrument capability. It did so by creating a parallel market — playing a dual role as a regulatory instrument and enterprise delivering social value.

As was highlighted both in the self-reflective stage of research and through the evaluation interviews, the design outcome from design project 2 revealed challenges of scale and adoption involved in the design for new policy instruments which support new models of governance of a more collaborative and diffuse nature. It also suggests a qualitatively different role for government and of policy implementation through co-created means, which is to build the legitimacy of interventions, such as RentSquare, in the co-delivery of policy outcomes. These issues also highlighted the need for design of an infrastructure to support different forms of interaction between government and new forms of social innovation. This learning and these reflections fed into the development and scoping of design project 3, which I will now turn attention to.

9.2.3. Affordances for instruments for collaborative governance

Design project 3 examined the issue of housing affordability through the perspective of housing supply. In particular, design project 3 focused on the role of community-led housing as a form of social innovation and as an emerging organisational instrument to address these challenges. Design practice explored the constraints created by

false affordances from an existing policy instrument infrastructure and how these constraints could also be addressed by working with hidden affordances to design new instrument interventions.

Design project 3 analysed an existing policy instrument infrastructure repurposed to support an evolving and maturing grassroots movement to become a scalable and viable policy mechanism for the delivery of housing supply (Section 7.3). As an instrument capability, emerging forms of social innovation call for new policy instrument capabilities that can support the new forms of interaction which they give rise to. The findings also demonstrate that it is important to explore how interactions within these socially innovative organisations are shaped by how they interface with existing policy instrument infrastructure (Section 7.3).

Design research and practice worked with false affordances to diagnose poor instrument fit and to examine the effects this caused for individual users and from the perspective of many-to-many systemic interactions (Figure 9.2). Design practice revealed how the community-led sector replicated a legacy of organisational models and how practices found in the wider housing sector reflected the expectations of policy makers and the desire from within the community led sector to legitimise their activities within a policy context. However, as the results indicate, these organisational models were not fit for purpose. By attempting to replicate these organisational models, CLTs (as grassroots organisations) and the NCLTN (as an overarching CLT membership organisation) aimed to professionalise the collaborative nature of the interactions which foster these community-led projects with the effect of limiting their scope for innovation and encouraging more extensive adoption of these initiatives.

In addition, design practice uncovered opportunities from hidden affordances through a series of interventions which could increase the scale of CLTs as a policy instrument by harnessing wider latent beneficiary demand and support for community-led approaches to housing supply. The evidence demonstrated how repurposing an

existing policy instrument infrastructure required the CLTs, in their delivery of housing supply, to accommodate strict policy definitions about housing affordability, which in turn restricted the viability of their delivery models. From an overall policy instrument perspective, these issues worked to limit the collaborative potential of this sector and the ability of the sector to generate wider public value.

More than any of the other previous design interventions, design project 3 worked with many and diverse levels of interaction — amongst grassroots organisations, their users, local and national government and the wider ecosystem of interactions characteristic of the diffuse nature of this sector. From a policy instrument perspective, false affordances and an analysis which worked with hidden affordances showed how policy intervention required more than the creation of subsidy and legal frameworks to bring accountability and probity to an emerging delivery model and policy instrument capability. The design interventions developed in design project 3 ‘infrastructured’ (Björgvinsson, Ehn & Hillgren, 2010, 2012) policy instrument capabilities into an existing policy instrument infrastructure in order to increase its overall functionality. The design interventions developed solutions to accelerate the delivery of CLT projects. The aim was to increase the output and scale of these initiatives and, more importantly, to increase the visibility and the viability of CLTs and the NCLTN as an intermediate organisation by building evidence of the impact and the successes of CLTs as a housing delivery model. The design of pathways and routes, instead of punctual instrument interventions, emerged once again as a key finding. However, given the ecosystemic nature of interactions at this level, these pathways took the form of ‘moulds’ of policy instrumentation.

9.2.4 Summary of design project findings & research implications

The analysis of the design project findings examined a range of scales of interaction between policy instruments, policy beneficiaries and target populations. A key finding of this stage of the research relates to the temporal dimension of working with different elements of affordance, which follows Krippendorff’s usability and affordance

framework (Section 3.3). As Figure 9.3 outlines, the design interventions, by working with different elements of affordance, emphasised policy instrument capacities either to enhance continued use or reliance on existing policy instrument infrastructure or to increase the ability of users to recognise or to explore the new policy instrument capabilities.

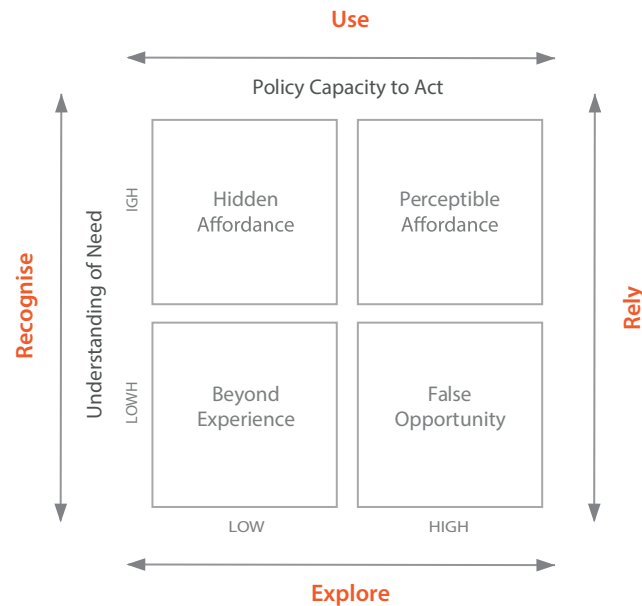


Figure 9.3
Temporal dimensions
of designing for policy
instruments with
affordance.

For instance, design project 1 worked to enhance the use of an existing instrument infrastructure by bringing together design interventions which could innovate and repurpose existing instruments to create better policy delivery pathways. Working with perceived and hidden affordances, the design outcomes, in the case of design project 1, recalibrated the existing instrument infrastructure to increase the reliance on and the resilience of this infrastructure and the afforded potential for instrument innovation.

In contrast, design project 2 worked with hidden affordances and those beyond perception to increase the use and the adoption of any new instrument capabilities and enhance their recognition. This is especially the case, given that the design solution aimed to create new forms of interaction in the relation between tenants and landlords and between these two end users and the wider housing market.

Design project 3 examined the detrimental impact of false affordances

on the overall reliance on an existing policy instrument infrastructure. It also worked with existing affordances to explore how policy instrument infrastructure can help to scale socially innovative organisational models to increase their collaborative potential, their legitimacy and their viability as an instrument capability for the delivery of alternative models of housing supply.

These qualitatively different temporal dimensions are significant in assessing the fit of policy instrument infrastructure and the design for policy instruments to the experiences and the expectations of policy instrument beneficiaries and wider stakeholders involved in the co-delivery of policy goals. These temporal dimensions bring significant insight to supporting the development of the design for policy instruments and to the application of affordance in a policy and in a service-oriented context. Before considering these implications in more detail, in what follows, I will examine the overall design project findings and the contribution of knowledge to policy making and to the design for policy instruments.

9.3 Contribution to Design Knowledge

This section discusses my research framework and its contribution to knowledge in how it applies to design practice and research through design in this context. I will discuss how the research framework developed into a design canvas (Figure 9.4) and a set of guidelines (Table 9.1). In the analysis which follows, I will first consider the design for policy instruments where policy makers have a high capacity for action but retain varying degrees of an understanding of need. I will then move on to consider affordance where policy makers have a more limited capacity to intervene while retaining varying degrees of an understanding of need.

9.3.1. Design for policy instrument calibration and optimisation

In policy contexts and circumstances where there is an existing legacy of policy instruments, work with perceptible affordances meant examining how these policy instruments could be redesigned

and optimised (Figure 9.4). In reference to the instrument choice criteria framework (Table 3.4), the design project outcomes produced interventions which calibrated the existing policy instrument infrastructure.

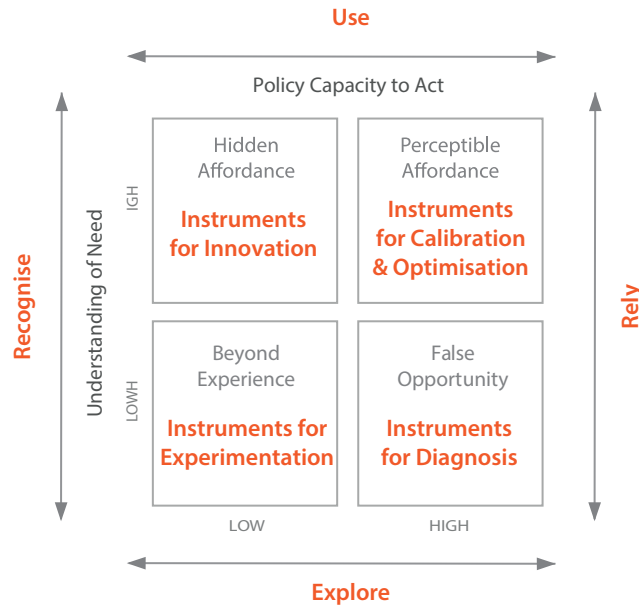


Figure 9.4 Design canvas for the design for policy instruments.

Design practice in these contexts benefited from a high degree of automaticity — an ability to deliver and implement more readily — and the availability of fiscal, of informational and of organisational resources to calibrate the existing and future policy interventions. In these cases, design practice benefited from an existing understanding of need and of the track record of past interventions to inform and to scope the diagnosis of the policy problems in question. The design tools and HCD methods typical of service design provided a series of significant insights to improve the accessibility of instruments as services in order to assess satisfaction and to evaluate unmet expectations. This did not confine the design practice in its ability to add value to further the understanding of need and to identify, through affordances, further opportunities for service redesign and innovation to satisfice a wider variance of unmet need.

The design interventions, the outcomes and the materiality of design practice, in the case of policy instrument optimisation, requires designers to be conversant with the materiality of public policy and instrumentation that are already in place and to engage with policy

making at a meta-oriented level.

In the case of my design projects, engagement at this level meant design for policy instruments to create leverage points within existing instrument infrastructure and within the wider ecosystem of stakeholders to design alternatives and to make viable affordances. In the case of design project 1, the design interventions addressed the impact of unmet need due to poor instrument fit, which occurred as a result of poor targeting, the restrictive nature of implementation processes, the rigidity of policy outputs and outcomes and the inconsistency of policy outcomes with beneficiary and target population socioeconomic realities (Chapter 3). In sum, the outcome of these design interventions, in addressing poor instrument fit, helped create and release further public value.

9.3.2. Design for policy instrument diagnosis

Design for policy instrument diagnosis worked with false affordances to diagnose poor instrument fit and assess the effect of unmet needs and expectations at a human and at a systemic level (Figure 9.4). Design project 3 illustrated the impact of false affordances on beneficiaries who were unable to rely on a policy instrument infrastructure due to a poor understanding of need or the inability, given a limited organisational capacity, of these organisations to respond to these needs. Design with false affordances involved uncovering those expectations and unmet needs in order to understand both the scale and the scope of the barriers which prohibit these from being addressed.

Fundamentally, design for policy instrument diagnosis assessed the problematic implications of wholesale redirection of existing instrument infrastructure to socially innovative and emergent forms of collaborative services. The design proposition showed how repurposing policy instrumentation designed for other policy contexts, to address other types of intervention and target populations, was detrimental to supporting potential innovative policy instruments and, in the case of CLTs, to achieving maturity through greater scale and

viability.

In a policy context characterised by a high capacity to act and a low understanding of need, an understanding of value from an HCD perspective and the mapping value networks proved essential. This understanding built evidence and mapped the disparity of resources across the different stakeholders to identify opportunities for action in line with the renewed and re-diagnosed need requirements of stakeholders.

9.3.3. Design for policy instrument innovation

Design for policy instrument innovation featured in all of the three design projects (Figure 9.4) — to address the legacy of policy instrument infrastructure, to apply open data as an instrument capability, to design new forms of regulation or to develop organisational capacity to scale social innovation. Design practice in this quadrant explored how to enhance the state's capacity for action, either through its own delivery mechanisms, by working with civil society, or across a wider network with a range of stakeholders to create value. It applied hidden affordances to a policy context where the state has a high understanding of need but, in working only within an existing policy infrastructure, has a diminished capacity for intervention. In certain cases, the results demonstrate that a diminished capacity to act was both real and a result of a limited set of instrument design options.

Overall design practice uncovered opportunities for value co-creation to increase the capacity and capability of policy instruments to widen state intervention. The results show that an increase in the state's capacity to act encouraged the delivery of policy outcomes through more collaborative mechanisms, which carried with them wider governance implications. This is significant, given, as I showed in Chapter 3, that traditional approaches fail to address the challenges of policy instrument design within a NG context, which makes an approach that is able to respond to opportunities afforded by the system of interactions vital for future instrument design.

The findings underline how design practice in this context requires the design of routes and of pathways rather than punctual policy instrument interventions. This is the case whether the design solutions responded to well-defined policy problems or developed new policy instrument interventions. Unlike working with perceived affordance, to design for policy instrument optimisation, design practice in this context involves the design routes to create new leverage points for an alternative form of state intervention. In the case of the design of a new instrument capability (design project 2), the creation of these routes involved the development of new technical capacities, as was the case with the application of open data. Most importantly, it involves building legitimacy and the design of value co-creation opportunities to increase the capability for the deployment of these new interventions to reshape interaction and to transform the experience of the beneficiaries of these interventions. The design projects drew attention to the role played by the state to source, design and deploy routes for adoption, where engendering trust and building legitimacy, viability and accountability become a key feature of design for policy instruments for innovation.

In this policy context where, there is a low capacity to act but a high understanding of need, it was important to explore what resources and networks were available to increase the recognition of and the trust in the new alternatives being proposed.

The materiality of design practice in this quadrant involves working to redefine policy agendas, to lobby and to create the policy and the business cases for change. The findings reveal a shortcoming of methods available within the service design repertoire to support policy instrument implementation and to develop strategies for scaling and to further market penetration of new instrument capabilities. In order to address this, theory of change and business modelling methods were used in addition to traditional service design methods to triangulate results with quantitative data analysis or model data to test design propositions.

9.3.4. Design for policy instrument experimentation

Finally, design practice in the last quadrant involved the development of policy instrument interventions for experimentation where the state has a low capacity for action and a poor understanding of need. Unlike Gaver's original framework (Figure 3.10), which rejects affordances in this quadrant as viable, in my research framework (Figure 9.4), I chose to explore affordances beyond perception in two ways. The first involves using affordances beyond perception to strategically review policy instrument resources to identify opportunities for experimentation. This approach reflects public value perspectives (Section 3.1.4) in that the role of the state involves, in part, the creation of new routes for experimentation to successfully take place. The second sees experimentation with new capacities for action, given emerging new forms of collaborative governance, to redefine relationships within the wider stakeholder system of interactions. As these policy instrument interventions are still experimental in nature, design practice explored the opportunities from existing resources and also identified patterns of behaviour and motivations within the wider ecosystem of interactions in order to generate opportunities for systemic change. In the case of design project 2, these involved the redesign of power balances within relationships which existed between tenants and landlords (Chapter 6) in order to create mechanisms to invite behaviour change rather than enforce it. New technology and the opportunities afforded by disruptive services played a potentially significant role in supporting change. However, from a policy perspective, there is a risk that disruptive interventions might also, if they increase the risk of implementation, become prohibitive in a policy context.

Design practice involved a return to first principles in order to uncover opportunities for behaviour change and to increase the capacity of exploration and recognition in relation to the proposed new interventions. This involved the exploration of cognitive metaphors that could enhance the recognition of design interventions which users might not yet be conversant with. In addition to exploring business model innovation and examining strategic design considerations, a

key part of the development of interventions in this quadrant involved building consensus. Facilitating a co-creative design process which invited transparency, openness and collaborative exploration was critical to encourage a permanent beta stage of working until there was greater clarity in the understanding of need and about the role of the state in its capacity and willingness to act. For experimentation to be meaningful, design practice at this level requires building a broad consensus and understanding the implications of these shared visions and goals for the broader policy and the broader political debates. This gives the design interventions a strong basis upon which to define and to position themselves in relation to the wider policy and governance arrangements in existence.

9.3.5 Design canvas & guidelines for the design for policy instruments

Overall, the analysis demonstrated that design practice, at the level of policy instruments, consists of designing or infrastructuring routes, pathways or 'service archetypes' (Blomkvist & Holmlid, 2015) instead of interventions of a punctual or of a transactional nature. These pathways signal towards a modular, interchangeable and open-ended approach to policy instruments and their subsequent manifestation as services. There are clear lessons which emerge from the application of my research framework to designing in response to different elements of affordance, which can be summed up in the design canvas for the design for policy instruments described below.

The design canvas for the design for policy instruments (Figure 9.4) is intended for use alongside other policy tools as frameworks for assessing policy instrument choice (Section 3.1.3) to provide a set of principles to orient design practice in this context (Table 9.1). The design canvas and guidelines aim to support designers in quickly diagnosing policy contexts and establishing an understanding of the materiality of policy intervention in that domain. In addition, these tools are aimed at building knowledge of design amongst policy makers to help them design and evaluate instrument alternatives, as opposed to the static evaluative tools currently in use. These tools

<p style="text-align: center;">INSTRUMENT FOR INNOVATION Hidden Affordance</p> <p>CONTEXT</p> <ul style="list-style-type: none"> Clear policy intent Requires enhancing capacity to act with perceived / limited instrumentation Design of new instrument capabilities <p>DESIGN PRACTICE</p> <ul style="list-style-type: none"> Leverage points to increased use & recognition Consider stakeholders to diversify delivery models, to increase scope & scale Test operational & technical resources to increase public value creation Address trust to build legitimacy, viability & accountability Develop a business case & assess social impact Redefine policy agendas, build evidence & business case for change 	<p style="text-align: center;">INSTRUMENT CALIBRATION & OPTIMISATION Perceptible Affordance</p> <p>CONTEXT</p> <ul style="list-style-type: none"> Clear policy intent Legacy of established instrumentation Redesign due to change in beneficiary, markets, technology Requires improvement in accessibility, scope and / or scale <p>DESIGN PRACTICE</p> <ul style="list-style-type: none"> Leverage points to increase use, usability & ongoing reliance Assess how beneficiaries use system & where it is not delivering Examine poor fit (rigidity of policy outputs, outcomes & delivery models inconsistency of policy outcomes with beneficiary socio-economic realities)
<p style="text-align: center;">INSTRUMENT FOR EXPERIMENTATION Affordances Beyond Experience</p> <p>CONTEXT</p> <ul style="list-style-type: none"> Little instrumentation available Poor understanding of policy intent <p>DESIGN PRACTICE</p> <ul style="list-style-type: none"> Leverage points to support exploring of new alternative & recognition Assess new opportunities in behaviour or motivation & nature of interactions which can be deployed Explore cognitive metaphors & expectations to enhance the recognition Build consensus & vision for future policy instrument design & policy intent Create routes for experimentation 	<p style="text-align: center;">INSTRUMENT FOR DIAGNOSIS False Affordance</p> <p>CONTEXT</p> <ul style="list-style-type: none"> Legacy of instrument deployment Poor / ill-informed understanding of need Repurposing / nascent instrument landscape New target population, beneficiaries or policy problem <p>DESIGN PRACTICE</p> <ul style="list-style-type: none"> Leverage points to increase reliance & exploration Assess impact of unmet need to viability of new models / new interments / new services Re-diagnose need & measure demand / nature of demand Map value creation networks to source potential pathways Map disparity of resources across system to identify opportunities

Table 9.1 Design guidelines for the design for policy instruments working with affordance.

demonstrate research through design in its engagement with and production of knowledge about design practice and the policy field.

9.4 Research Through Design As Interdisciplinary

Enquiry

My thesis combines research through design, as an epistemology of a projective nature, with action research methodology. I took the view that research through design is uniquely placed in its ability, through practice, through making and through a self-reflective form of enquiry, to analyse and to respond to the interactive nature of policies, which were approached as artefacts (Chapter 4). Most importantly, it was significant to consider how research through design can generate replicable knowledge and contribute to the development of design theory.

My research strategy followed Findeli's (2010) model for research through design (Section 4.3), where he provides a clear way into the analysis of the overarching design and research questions. This distinction between the design and research questions was useful to separate different research considerations and the different levels of engagement with the research material and the knowledge generated from the action, projection and reflection stages of the research. As I discussed in Chapter 4, within the design projects themselves, Chow and Jonas's (2008) cybernetic model, of three macro and four micro phases of learning, conducted through iterative cycles of projection, synthesis and analysis, was more aligned to the design process and to the self-reflective nature of research through design. However, as the thesis highlighted, the lack of design knowledge about the materiality of the state and policy instruments make it challenging to even frame a design problem in this context. This creates issues for the application of Findeli's research model, which suggests starting with a design research question which is premised on practice. My research methodology and framework addressed this by initiating research through a clearly defined research context. This grounded the research

as an interdisciplinary enquiry which brought together established knowledge and theory about the policy context and from a specific area of policy application to address the challenge of creating design theory in its own right (Redström, 2018).

To address issues of producing generalisable knowledge through research through design, I adopted an action research approach, seeking to develop knowledge through practice and produce change by engaging with a value-oriented practice. Action research, as a methodological approach, provided an ethical and value-based framework to guide the cycles of action reflection and theory building from one design project to another.

My research strategy consisted of three stages in order to unpack the research context and the implications of transforming a research gap into a design question and to inform the design project choice criteria. This involved defining a research problem and defining the design question and subsequent research question, which were then addressed through direct projective design action and reflection. The last stage involved comprehensive reflection and a synthesis and analysis of findings to situate practice and to examine the wider contribution to knowledge of the design and the research questions and the wider research problem. The design projects were approached from the point of view of their attempts to address housing policy issues and to assess design practice in how it contributed to each of the identified policy problems through the research framework.

My research framework examined instrument design from the perspective of interaction as well as the contribution of design practice to these interventions, and it aimed to produce new and transferable knowledge about design practice and knowledge about policy making as a field of study. As the outcome of the research framework discussed in Section 9.3.5 demonstrates, research through design and the application of design practice was able to assess and diagnose policy instrument infrastructure. It also generated learning and knowledge about how policies, stakeholders and the ecosystem of interactions

defined by policy instruments come to be defined by the relational nature of these interactions and, in turn, reciprocally define these systems of interactions. Approaching the area of enquiry in a projective manner showed how opportunities afforded by the nature of these interactions informs design for future policy instruments by bringing these designs to light.

The thesis demonstrates that research through design, if accompanied by an in-depth understanding and practice based experience of policy delivery, can approach policies and their instruments as design entities and artefacts suitable for design enquiry, practice and intervention. My background as a housing practitioner with an understanding of the policy context, in addition to the evidence basis for the choice of design research interventions, inevitably guided the framing of the research problem and the criteria used to frame the design questions from a practitioner's perspective. It remains to be seen whether the research strategy and the approach taken as well as the use of a research framework would be as effective if used to support design intervention where design researchers have little or no knowledge or in areas where design research has not typically been engaged in.

At a deeper level, further work is needed to explore if the approach taken can support the production of design knowledge and theory which is transferable across different research areas through design applications in advancing design as an epistemology. As the design canvas and guidelines discussed in Section 9.3.5 demonstrate in the context of my PhD, it is possible to produce generalisable knowledge which is not only content-specific when following a research through design approach.

Finally, further work is required to explore, from a methodological perspective, the implications of having an overarching research framework which starts research activity from the identification of a research problem in order to guide the design and the research questions. Results indicate that the production of generalisable knowledge about the contexts with which design research engages is

possible and has significant potential to contribute to the policy and other debates on design's own terms. In doing so, design practice and research through design began to address issues more closely aligned to Buchanan (2009) and Krippendorff's (2012) view of design as a rhetorical and semantic practice. This also reflects, as Findeli (2005) observed, design research's increasing concern with ethics and value. In what follows, I conclude the discussion with an analysis of the wider contribution of my thesis to design theory in the realm of services and policy.

9.5 Affordance in a Service-Oriented and Policy Context

Throughout my thesis, I have argued that design for policy instruments involves a meta-oriented practice which is characterised by an interdependency of stakeholders and a complexity of networks of interaction. As a result, design practice at this level needs to be approached differently. I have also suggested that the understanding of the materiality of interactions, both of policy instruments as meta-interfaces of public intervention and of the forms of interaction they delimit, should form part of the design repertoire in a policy context. This is critical not only for the wider dissemination of design practice and research in policy making activity but also to support future design education in this field.

In the context of my thesis, design research and practice worked with interactions, as affordances, in a policy making context to address the need for future instrument design activity to innovate and simultaneously respond to challenges which result from the increasingly interactive nature of policy delivery.

As I discussed in the previous sections, the design projects developed as part of my thesis not only assessed the contribution of affordance and design practice to the design for policy instruments, but they also developed a service-oriented application of affordance more aligned to the design for policy applications. In this final section, I will examine these findings and the contribution to knowledge emerging from my

thesis in order to service design practice and research. I will conclude by suggesting, in the context of design for policy instruments, that the materiality of services is defined by interaction and the subsequent 'value in context', in the form of affordances, produced as an outcome of these interactions.

9.5.1 Situating affordance within the design for service debates

Gibson defines affordances (Section 3.3.1) as a set of action possibilities present in the environment and in the perceived information about the environment, which form a reciprocal relation between the environment and the observer. As I discussed in Chapter 3, affordance is a multidimensional concept where action possibilities and the perceived information jointly define both the environment and the observer, and at the same time, they come to define each other. In its application to the design for policy instruments, affordance provides both a lens with which to assess and to quantify objectively aspects relevant to the policy environment and its beneficiaries and a prism with which to frame behavioural understanding and sensemaking when designing in response to purposeful behaviour.

As we saw earlier, Reed's work establishes a clear link between affordances as value — which is quantifiable — and the perceived information as manifesting meaning — and which characterises the less tangible, relational and behavioural dimensions involved in designing with affordance (Section 3.3.1). This connection between value and meaning is significant in the application of affordances to design for services and design for policy and in the context of my PhD.

All the design projects illustrate the significance of an interplay, in the context of interaction, between value and meaning, and they point to interaction as a key unit of analysis of design practice and research in the context of policy making. The overall research findings demonstrate the benefits of working with this interplay amongst the more tangible, quantifiable and relational aspects of interaction. Working in this way both grounds design practice and design research and allows for an HCD perspective to be brought to the heart of future

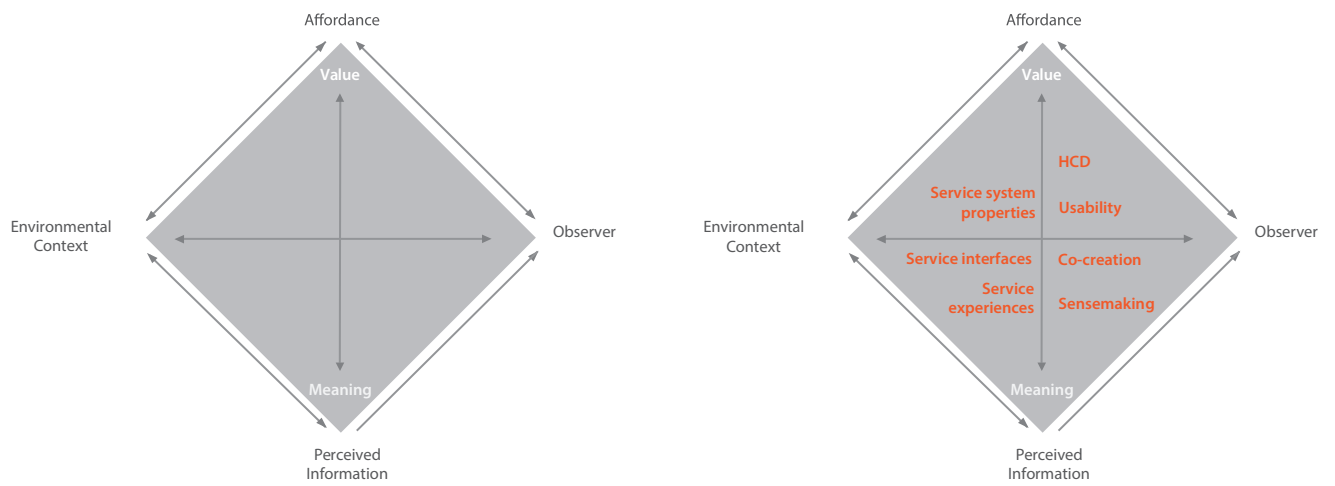


Figure 9.5 Service-oriented approach to affordance.

policy making and make a significant contribution.

Figure 9.5 synthesises the findings in Sections 9.2 and 9.3, situating key concepts from service design and design for services research within the affordance framework to support future service design practice to systematically explore interaction. The left side of the diagram involves working with the attributes, the interfaces and the touchpoints present in the environment which define and determine the scope of service interactions and service infrastructure. The right side of the diagram represents the relationship between the observer with affordances (value), the perceived information (meaning) and how the design practice can explore and to respond to these relational aspects of interaction. Although there is an inevitable crossover between distinct elements of design practice on either side, the diagram provides a useful framework to guide designers and policy makers in examining the multifaceted layers of affordance and meaning through design practice.

9.5.2 The materiality of services as interaction

Linking back to the research gap identified in Chapter 3, the findings suggest equal attention should be paid to the design processes as the outputs of design practice.

When considering design for policy instrument infrastructure, the findings highlight that working with interaction is key to design practice in this context. When coupled with affordance, as a method to systematically work with interactions, it enhances the ability of design practice to engage at a broader networked level and to concern itself with the actual mechanics of government.

Design practice at a meso level of policy making involves devising policy instrumentation and working with the mechanics of government. Therefore, at this level, design practice moves beyond the end user to focus instead on many-to-many interactions at a systemic level and on designing networks to networks. In addressing the research gaps identified in Chapter 3, this highlights the need for

design practice to work with networks and explore value and the flows of value within and between these networks.

Co-creation in the context of design for policy instruments and policy making goes beyond another method used in the design process. As the literature on value co-creation aptly highlights (Section 3.2.5), co-creation is integral to the definition of services. Within a policy context that is increasingly reliant on NG arrangements for the delivery of policy outcomes, co-creation and, by default value co-creation, are not only an outcome or a by-product of services.

Within the service design debates, the view of value co-creation as an integral element of services is commonplace. However, implementing it meaningfully at a meta level in the design for policy instruments requires a shift in how design practice is approached at this level. The analysis highlights that 'value in context' is a significant element of working with interaction and with affordance. The design project findings show how 'value in context' becomes manifest both as tangible quantifiable elements — physical assets, financial benefits, compliance documents, data as knowledge or face-to-face interaction as part of a wider organisational form — and as less tangible properties — the legitimacy, the accountability, the probity, the transparency and the trust built through these interactions. They point to 'value in context' as generating meaning and as defining the materiality of services as interaction.

Design practice at this level also consists of infrastructuring pathways in response to the open-ended nature of interactions, whereby working with and manifesting affordances within those pathways becomes a key consideration for design practice and research. It confirms the three dimensions of affording, specifying and satisfying discussed by Flach et al. (2017) in their study of affordance, which determines how people choose actions that are compatible with their intentions, as well as in the 'satisficing' strategies being considered, which are afforded by policies and policy instruments as artefacts of state intervention.

As I demonstrated in Section 9.3, design practice coupled with affordance creates specific and measurable ways to situate and quantify 'value in context' and value co-creation opportunities within the policy making spectrum.

9.6 Summary of Findings

In this final chapter, I concluded my analysis assessing the contribution of the design for services and the design for policy, to explore the interactive nature of policy instruments with the aim of developing capabilities for the design for policy instruments and for new forms of state intervention. I started from the position that policy instruments define the scope of public services, the nature of the relationship between the state and its citizens and, ultimately, our experiences of the state. I argued that policy instruments are inherently interactive in nature, whereby policy making practice involves leveraging resources, capabilities and capacities to create public value and to address policy outcomes. As I discussed in Chapter 3, traditional policy debates, including the policy studies and the public administration literatures, are ill-equipped to respond to and to address the challenges and opportunities that result from the interactive and relational nature of policy instruments.

The emergence of design practice in a policy context has made significant inroads to demonstrate the contribution of design to policy innovation. Nevertheless, design research and design practice have remained limited to micro level interventions at the level of service delivery and at the level of policy implementation. Other than debates exploring policies as services, less attention has been paid to the mechanics of policy making and of state intervention. These recent efforts tend to accept the interactive and value co-creative reality of design in this context as a given and as an outcome of policies as services.

By exploring different affordances, the design interventions developed in each of the three design projects helped shape a design canvas

and set of design guidelines which can be applied to support future design for policy instruments. As the design canvas and guidelines demonstrated, the design projects emphasised policy instrument capacity as employed to either enhance the use and the reliance on existing policy instrument infrastructure or to increase the ability of the beneficiaries to recognise and to explore new policy instrument capabilities. In doing so, the research findings not only demonstrate distinct temporal and qualitative dimensions of working with different affordances in order to systematically examine interaction. They also provide a framework to assess and support future design for policy instruments to work alongside choice criteria frameworks found in the policy literature. They guide design practice and designers in engaging with the complexities of design for policy instruments and guide policy makers in approaching policy design from an HCD perspective.

Whether one is to design instruments for policy innovation, policy experimentation or to address existing instrument infrastructure by identifying opportunities for calibration or assessment of the impact of policy misalignment, the findings highlight the importance of working with the open-ended nature of interactions, to understand their service ramifications and their subsequent policy instrument manifestations. The manifesting of affordances — either already existing or existing as opportunities for preferred forms of interaction — within policy pathways emerges as a key finding in how to capture and to generate ‘value in context’ in future state interventions. The need to increasingly interface with and respond to the complexity and the interdependency of state intervention means that interaction between government, its institutions and the myriad of stakeholders involved in the co-delivery of public value and co-delivery of public benefit is essential for the building of future policy design capabilities. The findings indicate a need to respond to the interactive nature of policy instruments and also the need to move away from the transactional nature of instruments focused only on an end beneficiary. They further highlight the challenge, in a design for policy instruments context, of how to devise systems and design many-to-many interactions that shift state intervention beyond the creation and the implementation of processes

for compliance.

My thesis proposes, in its contribution to knowledge in the sphere of service design and design for policy, a service-oriented approach to affordance, to support design practice to systematically respond to, and with confidence to engage with already existing policy instrument infrastructure and the ramifications of working with affordances in existence within this infrastructure. By working with value and meaning, it places design research and practice at the heart of design for policy instruments and policy making, where working with interaction becomes the key unit of analysis for future policy design and design for services debates.

Finally, my thesis demonstrates that research through design can, if accompanied by an in-depth understanding and practice based experience of policy delivery, approach policies and their instruments as design entities and artefacts suitable for design intervention. As I have argued throughout the thesis, practice at this level requires designers to be conversant with the mechanics of governance, policy making and policy instrumentation. Only then will designers be able to fully engage with the materiality of government and to gauge where genuine innovation lies.

10 Conclusion

10.1 Introduction

I conclude the analysis of my thesis by combining the final observations that may be drawn from the overall research in relation to design for policy instruments. Policy instruments, when treated as meta-interfaces embedded within services, offer design for policy instruments the ability to connect and respond to the interdependent and complex nature of state intervention through policy making. To work with and respond to the interactive and relational nature of policy instruments (Section 3.1.3), as this PhD set out to do, requires policy instruments to be approached as a continuation of transactions rather than as punctual interventions for compliance (Section 9.2.1). In response to a more fluid and ongoing nature of policy instrument intervention, the design of pathways and routes for adoption, which involves infrastructuring design solutions, emerges as the priority for design activity (Chapters 5–7). From a policy instrument perspective, this represents a more deliberative approach to future policy making and instrument design. More so, the findings position design research, and research through design, as a distinct form of enquiry at the centre of debates which seek to make sense and bring shape to the nature of the future relationships amongst the state, society and its citizens. In what follows, I encompass the broader context of the research and provide an overview of my findings and their contribution to knowledge.

10.2 The Research Context: State Intervention as Praxis

As I discussed in Section 3.1.2, the recent debates about public services and policy making, both from within and from outside policy circles, indicate that the mechanisms and infrastructure used for policy and decision making are in need of a rethink (Linder & Peters, 1989;

Linder & Peters, 1984; Schneider & Ingram 1997). The consensus emerging from across policy, public administration and the public service innovation fields highlights the increasing interdependent nature of policy problems and the high degree of complexity facing our current governments. This consensus also extends to an acknowledgement of the failure of the current decision making tools and knowledge apparatuses (Howlett, 2013; Schneider & Ingram, 1997; Cahill & Overman, 1990; Bobrow, 2006; Schön, 1992) which are used for political decision making and democratic action to deal with and adequately respond to these challenges and changes in the expectations of citizens in relation to the state (Section 3.1.2).

My thesis addressed these challenges by evaluating the contribution of design research in service design, design for services and design for policy, in order to explore the interactive nature of policy instruments and to develop new capabilities in the design for state intervention. The thesis developed a design practice, and in three distinct design projects, it applied research through design to the policy problem of housing affordability.

I began the analysis in Chapter 2 by giving a brief outline of housing policy. I then considered its relevance to my thesis as a policy area with a high degree of complexity and interdependency in how it interfaces with other policy areas. Historically, housing policy has been at the forefront of the innovation agenda surrounding public administration and governance experiments. Unlike other areas of policy delivery, housing is not characterised by direct service provision by the state; instead, it relies on a vast array of legal, regulatory and fiscal infrastructure — which, to varying degrees, supports, interfaces with and intervenes in housing markets.

My analysis focused on the issue of housing affordability as an emerging policy challenge for future housing and welfare policy (Malpass, 2003, 2004, 2008; Doling & Ronald, 2010; Groves, Murie & Watson, 2007). In the context of my research, the problem of housing affordability provided a unique opportunity to assess the contribution

of design and design for services to policy making. As a policy problem, housing affordability presents policy makers with a cross-cutting and complex challenge (Doling & Ronald, 2010; Forest, 2013; Franklin, 2006; Bugeja-Bloch, 2013; Hirayama, 2012; 2013; Ronald & Elsinga, 2012; Monk & Whitehead, 2010). Being intimately linked to inequality, it becomes manifest in many areas across the housing market and requires integrated responses which are sufficiently adaptive to address the diversity of these challenges.

My analysis established that policy instruments are meta-interfaces of government, 'that which gives the state its function' and helps define public problems (p.2). Policy instruments determine the feasibility of policy goals, and they define and inform both policy content (Howlett, 2013; Linder & Peters, 1988) and the organisational system by which public services come into being (Section 3.1.3). As such, policy instruments are the meta-organising principles of policy design and delivery. In my analysis, I treated policy instruments as design artefacts (Chapter 4) which have as much fluidity and changeability as the policy problems they are meant to address. They delimit the experiences of citizens and the tangible and intangible assets as well as the scope of the value creation opportunities found in public services, which are extended over a series of interfaces. Policy instruments define services designed to deliver policy intent, and therefore, they serve as the primary unit of analysis in a policy context.

To explore the contributions of the emerging debates in design and of research through design to this context, I examined traditional policy making activity and theory — including the knowledge apparatuses and frameworks used to support the praxis of policy design and decision making. As I set out in Section 3.1.2, these debates are characterised by the prevalence of dominant rational instrumentalist approaches. These are reliant on the specialisation of knowledge, where precision in policy problem diagnostics, evaluation, implementation and compliance is achieved at the expense both of the development of new alternatives and of supporting innovation.

I also discussed how the policy cycle is at best a heuristic device which is too reductive to guide policy design to produce new policy alternatives and directions. Despite its usefulness in compartmentalising different policy making functions through its representation of the distinct phases of policy making, the policy cycle fails to address the multilayered complexity (and interplay) of decision making at the macro, meso and micro levels of policy making. As a result, the current policy making praxis delivers an incrementalist approach to policy design that prohibits policy alternatives and innovation from emerging (Howlett, 2013; Linder & Peters, 1988). In addition, it became apparent in the course of my research that policies and their instruments are increasingly understood as being interactive in nature. This requires new tools to conceive of policy instruments, to support policy instrument choice and to harness the maximum benefit from the interactive and interdependent contexts in which these are designed to intervene.

10.3 Contribution to Knowledge

To explore the contribution of design, I applied design practice to three distinct design projects (Chapters 5–7), where I examined how to apply and the benefits of an approach to policy instruments as design artefacts. As part of that process, I unpacked how services come into being via the legal, regulatory, fiscal and informational instrument infrastructure, which gives the state its materiality and its capacity for action. I examined how these are in need of innovation and reform, in order to enable emerging forms of governance (and new service models) to take shape and deliver policy intent. Throughout the design practice and subsequent research evaluation and reflection, I drew strong parallels in the interactive nature of the policy instruments, defining the nature of interaction and the relational expectations between stakeholders and delimiting the tangible and intangible assets and the scope of public value creation opportunities.

10.3.1 Policy instruments as meta-interfaces of state intervention

I examined how the emerging design research, in the context of services and policy making, offers new policy alternatives and approaches to the interactive nature of policy instruments. As I have shown in Section 3.2.1, these efforts, despite their potential, are mainly focused at the operational end of policy implementation; they are concerned with problem diagnosis, decision making, operationalising policies through services and the governance implications of public service innovation.

In the context of policy problem diagnosis, despite the porous definition of HCD (Erlhoff & Marshall, 2008; Krippendorff, 2006; Almquist & Lupton, 2010; Steen, 2012; Crilly, 2011; Sanders & Stappers, 2012), its citizen-centred focus is valuable to policy design. However, when applying HCD, there is a need for caution in oversimplifying and idealising users. This shortcoming can be addressed by exploring interaction as sensemaking and also by developing design practice to acknowledge wider systems of interactions.

The debates concerning the role of co-creation, a method now synonymous with design practice in government and whose benefits for driving innovation are well-documented, tend to emphasise the emancipatory power of co-creation for decision making (Cottam & Leadbeater, 2004; Meroni & Sangiorgi, 2011; Sangiorgi, 2013; Sander & Stappers, 2012; Manzini, 2014; Junginger, 2013b). As I have proposed, when developing design practice in a policy context, an appreciation of the imbalances of the resources bound within these interactions and of the prerequisite role of the state to comply with equity, justice and representation through the interactions it fosters is paramount (Section 3.2.3).

More meaningfully, the emerging socially innovative service models and the collaborative organisational arrangements which accompany innovative models of service delivery (Cottam & Leadbeater, 2004; Maschi & Winhall, 2014; Parker & Heapy, 2006; Parker & Parker,

2007; Jégou & Manzini, 2008; Manzini, 2011, 2013, 2014; Cipolla, 2013; Thackara, 2006; Junginger, 2014, 2016) as well as the policy implications arising from them challenge models of public governance and models of democratic participation. However, they lack (in order to be adopted at scale) the necessary policy instrumentation for implementation and wider diffusion (Section 3.2.6). In view of the fact that the literature places services at the new frontier for design as organising principles and as instruments for policy design and delivery (Junginger, 2013b, 2014, 2016; Meroni & Sangiorgi, 2011), I argued instead that services come into being as a result of the instruments at the state's disposal which are available for intervention.

This requires a more strategic approach to design practice at this level. If design practice in the context of policy making and public innovation is focused on policy instruments, it follows that working with interaction and understanding interaction become critical to the analysis. As I discussed, in these debates, interaction often plays an integral role in the definition of services with respect to their being value co-creative in nature.

There are clear parallels between value co-creation (Kimbell, 2011; Maglio & Spohrer, 2008a, 2008b; Pinhanez, 2009; Vargo & Lush, 2008; Ramirez, 1999, Weiland et al., 2012; Martinez & Turner, 2011), derived from the interaction with service interfaces, and the notion of public value arising from the relational nature of services (Cipolla, 2006) and the relational nature of policy instruments. In a policy context, the concept of 'value in context' (Vargo & Lusch, 2008) is significant to the analysis; it shifts understanding away from binary considerations of interaction and moves it towards a consideration of value co-creation as a multilayered and multidimensional construct.

Despite the centrality of interaction to co-creation as a method that drives service design practice, and as an outcome in the context of services, interaction is less understood and explored in its own right. It is rare that policy makers and designers get to design policy and policy instrument infrastructure from scratch. Therefore, design practice in a

policy context inevitably involves finding, leveraging and responding to affordances within existing (and coexisting) systems; an understanding of interaction is key. As I explained in Section 3.3, affordances in their broadest sense (Gibson, 2015; Reed, 1982, 1985, 1993, 1996) provide a mindset for framing engagement with the exploration of and the potential opportunities arising from working with interaction as a multidimensional construct. Thus far, these have been lacking within the context of services and in the ongoing debates within service design and design for services, which the theory of affordance addresses.

Gibson's original work on affordances defines affordances as a set of action possibilities which can be perceived and interacted with and that also shape behaviour. As such, affordances do not change according to the needs of the perceiver; they are properties innate to the environment to be interacted with.

From within design research there emerges a distinction between affordances as possibilities of action — such as the utility of an object with quantifiable properties — and the perception of affordances (Gaver, 1991, 1992) — available as information in an object's interface which defines its usability. This dynamic characteristic proved to be key to both my analysis and the development of my research framework. The visual clues from affordances, made available through interfaces, play a primary function in indicating possible courses of action, their compatibility with existing cultural, social and value systems and their consequences. Given the socially constructed reality of policies and their instruments (Schneider & Ingram, 1997) and their services (Morelli, 2002), an appreciation of these elements is critical for successful design intervention in policy making at this level.

My research framework — and the design canvas and guidelines which emerge from the conclusion of the research (Section 9.3) — propose a service-oriented application of affordance at an organisational level. It provides an alternative to policy instrument choice frameworks. The research framework places a HCD perspective and research through

design as forms of enquiry at the heart of policy and instrument design in order to systematically explore interaction for future policy intervention (Chapter 3: p.69).

The analysis demonstrated that the design practice which worked with different aspects of affordance, within different policy contexts, helps to either enhance the use and reliance on existing policy instrument infrastructure or to increase the ability for recognition or exploration of new policy instrument capabilities. I discuss the findings from my application of the research framework to design practice and the implications for design research in the following section.

10.3.2 Design praxis for the design for policy instruments

As I discussed in Section 9.3, the research framework explored interaction as affordances — at the level of the individual user — of target populations (Figure 9.2).

When considering its application to design practice, design project 1 repurposed an existing instrument infrastructure to address a lack of mobility within intermediate tenures (Chapter 5). It assessed affordances in an existing legacy of policy instruments where direct interaction between the beneficiary and the provider occurred across a series of interfaces and over a number of years. Design project 2 moved beyond the provider and a beneficiary axis of interaction in order to examine the interaction of two disparate target populations — tenants and landlords, with seemingly opposing needs — with the wider housing market (Chapter 6). It experimented with how design practice might approach the design for trust by redesigning interaction to redress imbalances of power within these relationships and the wider housing market. Through the application of open data, it transformed data into knowledge to create a policy instrument capability that shifted regulatory policy function beyond an enforcement activity used to control or restrict towards a co-productive and deliberative capability. Finally, design project 3 analysed an existing policy instrument infrastructure repurposed to steward social innovation and collaborative governance practices (Chapter 7). Design project 3

examined how to support community-led approaches in order that their approach to increasing housing supply can become a scalable, viable policy mechanism for housing delivery. Interaction at this level was approached both at the level of human-to-human interaction and at the level of many-to-many systemic interactions.

The analysis of findings from the design projects developed the research framework into a design canvas and a set of design guidelines that encompass different policy instrument contexts and applications of affordances. As I discussed in Section 9.3.1, design for instrument calibration and optimisation involved working in a policy context with an existing legacy of policy instruments, where design practice developed perceptible affordances for instrument redesign. It benefited from a high degree of automaticity, given the legacy of resources, interventions and a clear policy intent. Design practice assessed poor instrument fit and the policy and beneficiary implications arising from inconsistencies of policy outcomes with the socioeconomic realities of the populations targeted by the policy interventions under consideration. The objective of the design practice was to create leverage points and design pathways that would increase use, usability and ongoing reliance on these instrument infrastructures.

Design for policy instrument innovation, as I discussed in Section 9.3.3, worked with hidden affordances to enhance the state's capacity for action, either through its own mechanisms or by working collaboratively with a wider ecosystem of stakeholders in order to create value. Design practice, in this scenario, is one where the state has a high understanding of need but in relying on existing policy infrastructure, has a diminished capacity (both real and perceived) to act. As they were not limited by pre-existing instrument choices, the design solutions started from first principles and built evidence to support the development of a business case and a social impact narrative to redefine policy agendas. Design practice in this context involved the design of new pathways that increase the use and the recognition of and foster the future adoption and the legitimacy of new

interventions. Intervention at this level aimed at reshaping interaction and the experience of the users, the beneficiaries and the target populations, where the role of the state comprised sourcing, designing and deploying different routes and models for adoption. The design of trust for building legitimacy, viability and accountability became a key feature of design for policy instrument innovation. The findings illustrate that practice at this level involves the design of mechanisms to optimise the existing instrument infrastructure and also to increase the use and recognition of innovation in these systems and, ultimately, to build resilience in them (Section 9.3.1).

In contrast, designing in response to false affordances, as covered in Section 9.3.2, involved the design for policy instrument diagnosis used to assess poor instrument fit due to unmet expectations and needs. It evaluated the detrimental effect of the wholesale redirection of an existing policy instrument infrastructure, repurposed from other policy contexts, types of intervention and target populations, and how its incorrect application stifles innovation potential. Most importantly, design research and practice, in this context, involved the building of evidence for the re-diagnosing of policy intent, building consensus and a vision for policy change, and instrument redesign. Part of the re-diagnosing of need involved the exploration of the nature of policy demand by mapping value creation networks and the disparity of resources across the system in order to identify future instrument design and policy opportunities.

Finally, design for policy instrument experimentation, as outlined in Section 9.3.4, presented a context where the state has a low capacity to act and a poor understanding of need. The design interventions worked to create routes and opportunities for experimentation to successfully take place and to drive opportunities for systemic change. Design practice, in this case, was as much a practice of social construction (Morelli, 2002) — of a rhetorical nature (Buchanan, 1995; Krippendorff, 2006; Findeli, 2008, 2010) that involved the creation of a shared vision and a shared goal — as it was about the design of policy instrumentation to support experimentation. Design

for policy instrument experimentation involved finding affordances by generating recognition for the future policy instrument adoption of new interventions by building on the cognitive recognition of users and on the cohesiveness of new interventions when compared to existing forms of interaction, in order to shift socially constructed narratives about the nature of existing relationships and interactions.

The overall findings of the research framework are aggregated in Section 9.3.5 in the form of a design for a policy instrument canvas (Figure 9.4) and set of design guidelines (Table 9.1). These are aimed at aiding the design for policy instruments to work with interaction in their capacity as affordances and to operate alongside other policy instrument choice tools. The canvas provides a starting point for designers to approach the complexity and to navigate the implications inherent in design practice at a meso level of policy making.

As I will discuss in the next section, further research is needed to assess the contribution and applicability of these design guidelines across a number of policy areas and other service contexts beyond the realm of public services. Part of this will involve continuing, where possible, an interdisciplinary conversation, drawing from expertise across different disciplines which inform policy decisions.

10.3.3 Towards a service-oriented application of affordance

The design projects developed as part of my thesis also developed a service-oriented application to affordance. In the context of interaction, the findings illustrate an interplay between value and meaning, and they point to interaction as a key unit for the analysis of design practice and research in the context of design for policy instruments.

Although they are crucial to the definition and understanding of services, the concepts of value and meaning are often conflated in the analyses within the service design and the design for services. The design projects and the subsequent analyses demonstrate the benefits of working with the interplay of value and meaning by focusing on both the tangible quantifiable (as well as the relational) aspects

of interaction, as they become manifest in and in response to the affordances and the environments in which policy instrumentation intervenes. Working in this way both grounds design practice and research and allows for a human centred perspective to be brought to the heart of policy making.

In Section 9.5, I synthesised the theoretical contribution of the thesis by describing how a service-oriented approach to affordance, which systematically works with interaction (as a key unit of analysis), might be developed (Figure 9.5). In my analysis, I separate the technical elements and outputs of service design practice, of designing interfaces, touchpoints, service blueprints and service architectures, as elements which help define and respond to the environment and its relation to the perceived information and affordances which define the scope of service interactions. In contrast to this sit the relational (and sensemaking) properties of service design practice, which inform affordances and their meanings at a systemic level, and at the level of the users, to mutually construct value and meaning from the environment as well as in relation to the observer. The distinction, as proposed in the framework, provides a mechanism to develop a design practice which takes into account the multifaceted manifestations of affordance in a service context — aiding in the understanding of the materiality of services as interaction.

10.3.4 Research through design, projective enquiry and the materiality of practice

The findings discussed in Chapter 9 demonstrate how design for policy instruments is a meta-oriented practice. Design practice at this level involves considerations regarding the mechanics of the state and democratic models of governance and decision making (Chapters 8 & 9). As I have argued, design offers, more than a set of tools and methods for policy instrument design, an epistemology that is concerned with projective enquiry which creates knowledge through making. This moves policy design beyond an evaluative problem solving activity to an activity which focuses on the interaction between artefacts and people as a starting point for its practice and its research.

By responding to the nature of interactions from a projective, self-reflective perspective, design practice challenged commonly held assumptions, and practices, which often affect the instrument options available from the outset. Design practice and research through design moved instrument design beyond the macro and micro dichotomies and ideological straitjackets which frame policy making into an evaluative activity, limiting its ability to innovate and to adequately respond to our current policy challenges.

More importantly, design practice demonstrated how research through design can generate design theory and knowledge which can be replicated and transferred beyond the immediate considerations of the application of design practice in the context it engaged with. As the findings evidence, design — and in particular, research through design — contributed to policy making activity and the design for policy instruments. In doing so, and by developing design knowledge regarding the materiality of the state, the findings highlighted how research through design can indeed produce knowledge and theory that is replicable and transferable and that can be systematised in the context of design as an epistemology and function as a form of interdisciplinary enquiry (Sections 9.3 and 9.5).

The research strategy and framework developed as part of this thesis used the definition of a clear research context and problems to define the design questions and the subsequent research questions for application in the design projects. This represents a point of departure from Findeli's framework for research through design. This approach enabled the development of an understanding of the research space and how to problematise the parameters of the research from a design perspective— particularity in a context, as is the case with policy making, where the design knowledge and theory are nascent. The outcome of this was the creation of knowledge specific to the design projects, but more importantly, knowledge about the wider research context of the design for policy instruments and for the advancing of research through design, design theory and knowledge.

10.4 Dissemination, Impact and Future Work

My research had an immediate effect on the work of many of the partners and institutions I collaborated with. The outcome of design project 1 led to the development of a pilot funded by London's Mayors Office and led to changes at a national level for a larger subsidy programme to support HAs to extend what is now termed a 'second home' to their existing shared owners (Watt, 2015). Design project 2, RentSquare, currently operates as a social impact business which has helped over 3000 tenants and landlords in London. It launched in August 2015 after raising social impact investment from Bethnal Green Ventures and joining the Open Data Institute's incubator programme in mid-2015. It has secured H2020 grant funding to build and deploy the first version of a new technology. Design project 2 also received recognition in March 2016, by London's Assembly Housing Committee, as an example of innovation in rent regulation, and it was featured in the Housing Manifesto of London's Mayoral candidates in the May 2016 elections. Finally, the outcomes from design project 3, alongside other ongoing efforts within the sector, were widely disseminated by the NCLTN, the wider, community-led housing sector and the UN Habitat. Similarly, the wider implications were considered as part of a series of initiatives within the community-led housing sector. Despite having no connection to the research, at the point of completion of design project 3, the community-led housing sector was awarded a £60 million grant subsidy package to provide capital uplift to many of these projects, demonstrating an appetite amongst policy makers for alternative models to affordable housing delivery.

Regarding the design for policy instrument design canvas and guidelines discussed in Section 9.3.5, further research is needed to establish:

1. How this approach could be applied to other areas of policy making or to digitisation and to the digitalisation of the state as well in its effectiveness in working alongside other policy frameworks and other evaluative policy methods;

2. The accessibility of the framework to service designers not conversant with design in government and in service practice contexts and fields of research beyond policy making;
3. The furthering of a critical understanding and the development of design knowledge about interaction in a service-oriented approach to affordance, of working with value and meaning;
4. The extent to which the proposed design canvas, in its understanding of interactions as affordance, can support the successful development of other new instrument capabilities to enhance the adoption, legitimacy and success of instruments as meta-interfaces for governance; and
5. Whether the application of this research is transferable to non-policy contexts, as a framework to explore services through interaction as affordances.

Furthermore, policies and policy instruments, in their role as design entities, move the materiality of design and the application of design practice towards a rhetorical sphere, which requires the mechanics of the state to be further understood and assessed in design terms. To do so significantly, it is important that design research addresses how to approach and build knowledge about the mechanics of the state in design practice and in design education. Designers working in this context must be alert to how their design propositions also reflect biases and, in turn, aware of the policy implications arising from design practice and design decisions at this level. Building design knowledge of the experiences, the restrictions and the boundaries imposed by legal, fiscal, regulatory and organisational instruments is critical to how policy instruments seek to mediate certain types of behaviour, whether it be to co-produce outcomes or to coerce action to prevent abuses of the system.

For designers to competently engage at this level, an understanding of the materiality of policy and the need to build a repertoire of what intervention at a policy level is all about becomes essential. This is to

ensure that design intervention at a policy level can truly innovate to contribute on its own terms and, critically, to challenge long-standing assumptions which frame policy design and instrument choices. Failure to address this potentially detracts from what I believe is the ability of design (as an epistemology that can truly contribute to the creation of new knowledge apparatuses that can bring change) to engage with and address our policy problems and, most importantly, envision the futures we collectively wish to design and inhabit.

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