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Reading the future : constructing low-carbon imaginaries in urban institutions

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Reading the future: constructing low carbon imaginaries in urban institutions

Julian Dobson

A thesis submitted in partial fulfilment of the requirements of
Sheffield Hallam University
for the degree of Doctor of Philosophy

September 2017

Truly, though our element is time,
We are not suited to the long perspectives
Open at each instant of our lives.

Philip Larkin, *Reference Back* (1955)

Abstract

Reading the future: constructing low carbon imaginaries in urban institutions

A central paradox of environmental sustainability is that the institutions that bring stability to society must become agents of transformative change. In an urbanised world characterised by fossil fuel dependency, the stable 'anchor institutions' in major cities are likely to play a central role in transitions towards a low carbon economy and society (Coenen, Benneworth & Truffer, 2012; Goddard & Vallance, 2013). However, the nature of institutions both enables and militates against sociotechnical change, constraining the futures that are imaginable and achievable. This paradox has received little empirical attention.

This thesis asks how actors in urban institutions imagine and interpret low carbon transitions. It presents case studies of strategic institutions in three northern English cities: a university in Manchester, a local authority in Nottingham, and a housing association in Sunderland. Each has publicly positioned itself as a leader on environmental sustainability. The research examines how actors' engagements with the institutional logics or frames of reference embedded in an organisation (Thornton, Ocasio & Lounsbury, 2012) determine or divert potential pathways of change. Using Paul Ricoeur's future-oriented hermeneutics (1988, 2008) as a guide, the study explores institutional change as an interpretive process, recasting institutional logics to serve new purposes. Through qualitative interviews and documentary analysis it uncovers this process of interpretation and scopes out its possibilities and limits.

The research finds that actors' use of institutional logics has a recursive effect, bending organisations back towards their original positions when challenged by crisis or conflict. However, this is countered by the forward motion of interpretation and reinterpretation. The interpretive process is critically catalysed by knowledge networks that are not coterminous with the urban spaces where transitions are enacted. The study finds such epistemic networks to be a necessary, though not sufficient, factor for transitions to take effect. Building on these findings, it proposes a model that integrates an interpretive approach and attention to institutional logics with the multi-level perspective previously advanced by transition scholars (Geels, 2002, 2004, 2010; Grin, Rotmans, & Schot, 2010).

Acknowledgements

This thesis would not have been possible without the help of many others. I am grateful first of all to my supervisors at the Centre for Regional Economic and Social Research at Sheffield Hallam University, Peter Wells and Will Eadson, for their wisdom, encouragement and advice. Coming late in my career to academic research, I appreciated the supportive and collegiate environment of CRESR, and particularly the PhD forum facilitated first by Ryan Powell and subsequently by Richard Crisp. My thanks too to Sheffield Hallam University for providing the studentship that funded this research.

Further afield, Heather Campbell at the University of Sheffield and Ira Harkavy at the University of Pennsylvania provided important background on the subject of anchor institutions; and delegates and panel convenors at the New Institutionalism Workshop and the Interpretive Policy Analysis conference in 2017 helped me to fine-tune my theoretical framework. I'm grateful especially for the comments of John Grin, Imrat Verhoeven and Amy Burnett at the IPA conference.

I appreciated, too, the helpful and positive attitude of staff at the organisations where I conducted my research. They were invariably courteous and professional and willingly gave their time to enable the research to be accomplished effectively.

My wife, Jo, and children Miriam, Finn, and Ben were all engaged in their own academic studies while this research took place and their support, patience and solidarity were invaluable, creating a space both to share the joys and absurdities of scholarly life and to put them in perspective.

Finally, my thanks to Sheffield Council for an allotment which was a tremendous antidote to excessive study. The sloe gin will be ready at Christmas.

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Chapter 1: Introduction

1.1 Crisis and paradox

The present moment, Paul Ricoeur observed in his major work *Time and Narrative*, is one of crisis, caught between a 'surpassed past' and a fleeing future (Ricoeur, 1988, p. 213):

> [W]hen our expectation can no longer fix itself on a determined future, outlined in terms of distinct, discernible steps, our present finds itself torn between two fleeing horizons, that of the surpassed past and that of an ultimate end that gives rise to no penultimate term. So torn within itself, our present sees itself 'in crisis'…

The notion of a transition to a 'sustainable' or 'low carbon' society presents such a crisis on at least five connected levels.

First of all it presents a crisis of definition. What is meant by transition or 'low carbon'? I will attempt to unpack this further below and in Chapter 2. Second, it presents an ecological crisis: one of the effects of human activity on the planet we inhabit, threatening not only the environment we all depend on but ultimately the human socioeconomic edifice in its current form (Rockström et al., 2009, Steffen et al., 2015). Third, it presents a political crisis, one of policy and governance (Voß, Bauknecht, & Kemp, 2006; Coutard & Rutherford, 2010; Davoudi & Brooks, 2014). These three crises are present throughout the thesis that follows, but they are not my prime focus of attention.

Fourth, transition presents an institutional crisis or dilemma (Gibbs & Krueger, 2012): the institutions that frame and stabilise society must be destabilised in order to become agents of radical change (Mohr & White, 2008; Lowndes & Roberts, 2013). This paradox is the central focus of my thesis. Fifth, because institutions are collectivities of individual actors as well as rules and routines (Hay, 2011; Raven, Schot, & Berkhout, 2012) transition presents a crisis of understanding at an individual level: actors must formulate their own understandings of a sustainable future and draw on them as they make sense of the institutional traditions and trajectories in which they find themselves. The institutional paradox is accompanied by a personal paradox, a situation scholars describe as the paradox of embedded agency (Sewell, 1992; Barley & Tolbert, 1997; Seo & Creed, 2002) or 'situated agency' (Bevir & Rhodes, 2005).

This research project addresses this double paradox of institutional change and situated agency. It explores this via a study of three organisations that have sought to lead on environmental transition within their institutional fields. Through documentary analysis and interviews with actors and stakeholders at each organisation I have sought to understand how individual interpretation and institutional logics (Friedland & Alford, 1991) combine to influence transition processes. Later in the thesis I propose a model linking the perspectives of interpretive, institutional and sociotechnical transition scholarship in order to offer a framework for analysing and planning institutional change.

I begin from a point of agreement with transition scholarship: that transitions are both necessary and complex. So this thesis will take the necessity of action to address climate change as given. It poses one overarching research question: **How are low carbon imaginaries constructed and reconstructed in urban institutions in the UK, and how do such interpretations enable or curtail possible futures?** This question focuses attention on the epistemologies and logics that guide institutions, examining the speech acts and hermeneutic processes (Fairclough, 1992; Wetherell, 1998; Stahl, 2004) that determine the goals institutions set, the way those goals are understood and enacted, and how those goal-focused actions are interpreted and reinterpreted in practice. I examine how processes of transition are legitimated or undermined, enabled and constrained, through such interpretation and reinterpretation.

The overarching question is further developed through the exploration of two further questions:

1) **How do actors' engagements with institutional logics affect the interpretation of low carbon futures?** This question aims to explore how actors' perceptions of institutional logics may constrain transitions.

2) **How does actors' participation in epistemic communities** (Haas, 1992) **shape the construction of low carbon futures?** This question seeks to explore how actors may grant legitimacy to new logics

through the influence of communities of expertise beyond organisational boundaries.

This thesis is not an examination or critique of the idea of anchor institutions; they are the setting for the inquiry, not its subject. Neither is it a political analysis, although politics and governance are ever-present in the way actors and institutions navigate uncertainty. Nor is it a network analysis, although I pay attention to networks and relationships. It is primarily concerned with the ways in which actors and institutions envisage the future, and the epistemological and practical challenges of moving towards such desired futures. But to put such futures into context, some background is needed.

1.2 A watershed moment?

In an age of non-stop news, claims of historic turning points have become almost routine. Yet Wednesday 5 October 2016 might have a better claim to watershed status than most. On that day more than 55 parties, covering 55 per cent of global greenhouse gas emissions, ratified the 2015 Paris Climate Change Agreement, ensuring its provisions to limit global warming would come into force within 30 days. Through this agreement national governments are obliged to act to limit warming of the Earth's atmosphere to no more than 2 degrees Celsius above pre-industrial levels, and to strive to keep the increase within 1.5 degrees. Thus - it is hoped - they will mitigate the most damaging effects of climate change, and maintain the planet within a 'safe operating space for humanity' (Steffen et al., 2015).

Patricia Espinosa, executive secretary of the UN Framework Convention on Climate Change, described this tipping point as 'a truly historic moment for people everywhere' (eco-business.com, 6 October 2016). The agreement had 'opened the door to a fundamental shift in the way the world sees, prepares for and acts on climate change'.

Her reference to a shift in seeing was significant. Imagination is the beginning of new possibilities. Ricoeur (1991, p. 173) argues that it is 'through

the anticipatory imagination of acting that I "try out" different possible courses of action'. Action on what has been termed sustainable development since the 1980s (World Commission on Environment and Development, 1987) is both epistemological - a question of how the problem is seen and understood - and material, in terms of investment in energy systems, infrastructure and technologies (Geels, 2004; Grin, Rotmans, & Schot, 2010). It is the epistemological challenge of climate change that lies at the heart of this thesis and the research that underpins it. And despite Ms Espinosa's optimism, the epistemological shift is far from complete. Even among the strongest advocates of environmental action there are diverging understandings of the challenge and the required response.

Comments by globally influential figures in the run-up to the Paris Agreement illustrate the range of understandings in play. Sir Nicholas Stern, author of the influential Stern Review for the UK government on the economics of climate change (HM Treasury, 2006) described the prospect of low carbon cities as 'a $17 trillion opportunity worldwide' (The Global Commission on the Economy and Climate, 2015). His approach, and that of the New Climate Economy centre he heads, lies firmly within a paradigm of 'ecological modernisation' (Jänicke, 2008). Pope Francis I, in contrast, echoed Ulrich Beck's notion of the 'risk society' (Beck, 1992) in paragraph 20 of his encyclical *Laudato Si* (Pope Francis I, 2015): 'Technology, which, linked to business interests, is presented as the only way of solving these problems, in fact proves incapable of seeing the mysterious network of relations between things and so sometimes solves one problem only to create others.' For Pope Francis action on climate change is presented in terms of environmental justice: 'the earth herself, burdened and laid waste, is among the most abandoned and maltreated of our poor'. (*ibid*., paragraph 2). A parallel stance is found in the Islamic Declaration on Global Climate Change (International Islamic Climate Change Symposium, 2015): 'Our species, though selected to be a caretaker or steward (*khalifah*) on the earth, has been the cause of such corruption and devastation on it that we are in danger of ending life as we know it on our planet.'

Despite the Paris Agreement, action on climate change continues to be contested and to demonstrate deeply differing epistemologies. Just one month

after the majority of the world ratified the Paris Agreement, on 9 November 2016, the United States elected Donald Trump, whose presidential campaign included a commitment to cancel the agreement and 'unleash America's $50 trillion in untapped shale, oil, and natural gas reserves, plus hundreds of years in clean coal reserves' (Trump, n.d.). On 1 June 2017 he fulfilled his election promise and withdrew from the accord.

The material background to these struggles is also evolving. The year 2016 was significant for another milestone: the first 12-month period in which measurements of carbon dioxide in the Earth's atmosphere continuously exceeded 400 parts per million (*The Washington Post*, 13 June 2016).

1.3 Sociotechnical transitions and 'anchor institutions'

These material changes, political contests and epistemological currents are intimately linked. They are termed 'sociotechnical transitions' because they involve complex bundles of institutions, social practices and technologies (Rip & Kemp, 1998; Berkhout, Smith, & Stirling, 2003; Geels, 2002, 2004). Political and institutional decisions drive investments in infrastructure; markets and social trends drive changes in everyday life and practices. These in turn affect the wider environment, and environmental impacts then feed back into practices and decision-making. These complexities are particularly intense in urban environments, which Alberti (2016) describes as 'coupled human-natural systems' that are continuously co-evolving.

'Transition' is not the only way of referring to the sociotechnical changes connected with reducing carbon emissions. Such processes have also been referred to as eco-state restructuring (While, 2008), carbon control (Jonas, Gibbs, & While, 2011) and transitional pathways (Bailey & Wilson, 2009). For the sake of economy, however, I use the term 'transition' to refer to the range of processes involved in moving towards what Urry (2011) calls a 'post-carbon economy-and-society', while acknowledging that the term itself is moot.

My research focuses on the role of institutions in shaping and responding to such complex processes. The human species uses institutions to enact norms

and frames of reference, to regulate behaviour and to govern decision-making (March & Olsen, 1989; Powell & DiMaggio, 1991; North, 1990; Searle 2005). Urban settlements are now the predominant form of human habitat and so play a significant role both in the systems that contribute to or mitigate the effects of climate change (Hallegatte & Corfee-Morlot, 2011; Alberti, 2016) and in the institutional and governance arrangements through which human behaviour is constructed and mediated (Meadowcroft, 2005; Bulkeley & Betsill, 2013; While & Whitehead, 2013). I situate the research among so-called 'anchor institutions' - the relatively stable institutions that in their organisational forms are rooted in particular locations, are significant employers and contributors to the local economy, and affect the urban form through their investment in real estate and infrastructure (Alperovitz & Howard, 2005; Taylor & Luter, 2013). While an 'anchor institution' is a label used to describe individual organisations that exhibit particular characteristics, each of the examples chosen for this research also exemplifies a particular institutional field within the UK: higher education, local government, and social housing.

In an urbanised world where present socioeconomic arrangements depend on fossil fuel consumption and a viable future demands an end to fossil fuel dependency, urban institutions can be expected to play a key role in processes of transition (Aylett, 2010; Bulkeley, Castán Broto, Hodson, & Marvin, 2010). But does their institutional nature militate against their capacity to effect the changes necessary to achieve a 'sustainable' future? To answer this question, it is necessary to understand the logics and frames of references embedded within institutions (Friedland & Alford, 1991; Thornton, Ocasio, & Lounsbury, 2012) and how they impact on the sensemaking and actions of those tasked with implementing environmental programmes. By examining how ideas and practices associated with a low carbon future gain traction within an institutional context, it becomes possible to delineate some of the parameters within which potential futures will be enacted, and thus understand how institutions and the processes at work within them constrain and determine what can be achieved.

1.4 Burgeoning scholarship and knowledge gaps

My inquiry is situated at the intersection of three fields of scholarship: sociotechnical transitions, institutional theory, and hermeneutics. The subject of the study is transitions; institutionalism provides a theoretical lens; and hermeneutics offers a methodological approach.

Early 21st century scholarly research has become increasingly concerned with processes of global transition in the context of climate change. The long history of understanding climate change through the physical sciences has been complemented by social science perspectives, addressing the conceptual, organisational and political understandings necessary to facilitate a move away from fossil fuel dependency. The work of Rip & Kemp (1998), Geels (2002, 2004) and others has evolved into a flourishing field of literature on sociotechnical transitions. Attention has focused on whether and how transitions may be facilitated or managed (Voß et al., 2006; Loorbach, 2010), issues of the spatial scale at which transitions might be understood (Bulkeley, 2005; Bulkeley et al., 2010), the ways in which transitions are constructed and enabled through non-human and material actants (Rydin, 2012) and the political struggles that determine how and in whose interests transitions may be enacted (While, Jonas, & Gibbs, 2010; Jonas, Gibbs, & While, 2011; Hodson & Marvin, 2012).

Institutional theory has a rich history stretching back to the sociology of Max Weber and Emile Durkheim. The late 20th century saw the development of the 'new institutionalism' (Powell & DiMaggio, 1991) which emphasised the structural stability and isomorphism of institutions. More recently the focus has shifted to processes of institutional change, organisational leadership and everyday practices of 'institutional work' (Lawrence & Suddaby, 2006). Contemporary developments have stressed the institutional logics or frames of reference through which actors and organisations order their worlds (Thornton et al., 2012, McPherson & Sauder, 2013). The latter field of research is particularly pertinent to my thesis.

Understanding transitions to a low carbon society as an epistemological and political process as well as a shift in material and technical systems brings hermeneutics into play. If transitions are matters of interpretation, interpretive

scholarship provides an appropriate methodological approach. Through the late 20th century a rich vein of literary and philosophical scholarship addressed the intersection between texts and their interpreters (Ricoeur, 1976, 1988, 1991; Czarniawska, 1997, 2004). Yet there has been sparse application of this knowledge to the processes of institutional change associated with sociotechnical transitions. My research aims to address this gap, synthesising insights from hermeneutic, institutional and transition theories to understand the processes of change and contestation at work in three locations in the north of England.

By examining the questions outlined above (section 1.1) through selected case studies I aim to highlight the processes of epistemological flux and institutional reinterpretation at work when organisations seek to move towards a low carbon future, and explain how change is both constrained and enabled through the logics at play within an institutional context. In doing so I seek to build a more robust bridge between the fields of institutional and transition studies, emphasising the significance of interpretive processes in linking and guiding the understanding of institutions and of transitions in organisational settings.

In particular, this thesis aims to illuminate the 'paradox of embedded agency' (Seo & Creed, 2002) by addressing the following knowledge gaps:

- the contributions of institutional theory and the institutional logics perspective towards a deeper understanding of sociotechnical transitions and how change is constrained;
- how institutional logics may change through the influence of epistemic communities in facilitating new interpretations and legitimising activities and technologies;
- what role institutional reinterpretation may play in low carbon transitions alongside material and behavioural change.

1.5 How this thesis is structured

Chapter 2 situates the research in the context of global public policy and discourse on climate change, discussing climate change as an example of a 'wicked problem' and carbon dependency in terms of sociotechnical 'lock-in'. I outline developments in transition scholarship, and introduce the multi-level perspective (Geels, 2002, 2004) as a key concept in transition studies. I go on to introduce the concept of 'anchor institutions' as the setting for the inquiry.

Chapter 3 situates the inquiry in its theoretical context. I explore how change is constrained, and how change may become possible. To explore constraint I turn to institutional theory. First I address the question of what an institution is and what institutions do, and how an examination of their functions can reveal the embedded logics that drive them. I then show how attention to institutional logics (Thornton et al., 2012) and institutional work (Lawrence & Suddaby, 2006) can inform understandings of change.

Chapter 4 outlines the interpretive methodology that informs the analysis of my empirical findings. I pay particular attention to the contribution of Paul Ricoeur, whose work I draw on in presenting my findings in later chapters. Ricoeur's hermeneutics emphasise how change can be achieved through interpretation and reinterpretation (Ricoeur, 1991). I explain how this approach will be operationalised in my research.

In **Chapter 5** I discuss the design of the research and its justification. I outline my chosen methods of study and the process of case study selection, introducing each case study organisation. I explain how the choice of three different institutions - a university, a housing association and a local authority - in three northern English cities (Manchester, Sunderland and Nottingham) offers an opportunity to highlight commonalities and differences in the way institutional logics are interpreted by actors in different contexts. Finally, I describe and reflect on my experience of conducting the research.

My empirical findings are outlined in the next three chapters. The flow of these chapters echoes Ricoeur's hermeneutic cycle (Ricoeur, 1988) in considering in turn the presentation, negotiation, and transformation of possibilities.

Chapter 6 focuses on the prefigurative stage of interpretation (Ricoeur, 1988) and examines how change in the case study institutions is conceptualised through the institutions' public pronouncements and discourse, and through individual actors' understandings and aspirations for the future. I examine documentary material in order to trace what kind of vision is being presented, and how comfortably it sits with existing logics; and I turn to interviews with actors to highlight their various conceptualisations of a low carbon future.

Chapter 7 considers how progress towards a low carbon future is constrained in the case study institutions. It examines this in terms of 'configuration', the second stage of the hermeneutic cycle in which new possibilities are negotiated. I explore three general findings emerging from the empirical data. First is that progress towards environmental goals is provisional and open to interpretation through the filter of prevailing logics. Second, configuration takes place through a continuous process of sensemaking, testing different propositions about organisational purposes and direction. Third, there is an interplay and contestation between locally situated agency and institutional power. This contestation can be understood as a facet of 'regime resistance' (Geels, 2014).

In **Chapter 8** I apply Ricoeur's concept of refiguration to the institutional environment, examining how change that has been advocated (prefigured) and negotiated (configured) is then taken forward through renewed pursuit of environmental objectives. Through this lens I explore evidence for the emergence of changed or new institutional logics.

Chapter 9 seeks to open up a wider discussion through reflection on the research findings. I draw on a secondary analysis of my fieldwork to show how actors deploy a range of logics to explain their understanding of and support for institutional objectives. I move on to consider the role of epistemic networks in shaping institutional interpretations of the future, explaining how communities of peer experts function in inspiring, legitimising, challenging, limiting and facilitating potential transitions. I then bring together the insights of transition studies, institutional logics and interpretive theory to propose an integrated framework for the study of transitions in an institutional context.

Chapter 10 concludes the thesis by setting out the key areas in which it has contributed to knowledge. I propose a model of institutional change in the context of low carbon transitions, identify areas for future research and reflect on some of the limitations of the current inquiry. By way of this model, I propose a research agenda that develops a closer focus on the role of multiple logics as keys that may unlock routes to low carbon transitions.

Chapter 2: Wicked problems and durable institutions

2.1 The last ton of fossilised coal?

Capitalism and its associated rationalities, the sociologist Max Weber mused, have become an 'iron cage' enveloping humanity 'perhaps … until the last ton of fossilised coal is burnt' (Weber, 1905). Fast forward a century, and it has become axiomatic that by continuing to burn fossil fuels humans may ultimately destroy capitalism's achievements (Bendell and Doyle, 2014; Bank of England, 2015). But humans remain unwilling or unable to break out of the iron cage: indeed, much of their effort could be seen as an attempt to give it a greener gloss (North, 2013; Swyngedouw, 2013). Weber's nightmare of a world of 'mechanized petrification, embellished with a sort of convulsive self-importance' finds its echo in Jackson's observation (2009, p. 95) that under contemporary capitalism '[t]he throw-away society is not so much a consequence of consumer greed as a structural prerequisite for survival'. The iron cage may appear absurd or horrific, but it is the only place we know.

Climate change, as a threat that has arisen from within the iron cage, has the potential to rattle it in unprecedented ways. The literature on the origins, extent, and potential consequences of climate change, and its encapsulation in the specific issue of carbon dioxide emissions, is encyclopaedic. What is significant to this thesis is the Faustian character of climate change as a challenge 'whose origins lie with the very triumphs of modern society' (Urry, 2011, p. 11).

Faust's pact was to trade a present triumph for the risk of a disastrous future. The reverse of Faust's position is to trade present sacrifices for the hope of a happier future. This is the offer implicit in discourses of 'sustainable consumption' (Evans, 2011). To assess the persuasiveness of the offer, it is necessary to comprehend how the future is understood. Hence my research question, which asks how low carbon imaginaries are constructed and reconstructed in urban institutions in the UK, and how such interpretations enable or curtail possible futures.

This chapter sets the scene by outlining the challenge of climate change as a 'wicked problem' (Rittel & Webber, 1973) that is not only generated through human activity but evolves through human attempts to address it. I introduce the idea of 'low carbon' or 'sustainability' transitions as the backdrop to this thesis, discussing briefly how transition has been conceptualised politically and by scholars. In doing so I show that both the ends and the means are contested, presenting actors and institutions with dilemmas (Bevir & Rhodes, 2005) both about their destination and the mode of travel.

Having introduced the notion and some of the challenges of transition, I outline several ways in which climate change is a paradigmatic case of a wicked problem. In particular, 'carbon lock-in' (Unruh, 2000) demonstrates the temporal conundrum of wicked problems: action on climate change is both rooted in what Ricoeur calls the 'surpassed past' of technologies and practices that are no longer appropriate, and oriented towards a 'fleeing future' of sustainability that remains beyond our immediate grasp.

The empirical context for my investigation is that of 'anchor institutions' - specific instances of generic institutional forms that in their localised manifestations exert recognisable influences in urban settings (Harkavy & Zuckerman, 1999). I outline the development of the concept of anchor institutions, and explain how their socially constructed character illuminates the questions of institutional change, modification and recursiveness at the core of this inquiry. I go on to explain why anchor institutions provide a microcosm of the challenges of transition as an urban, a networked and a durable problem, acting both in and beyond locations and across timescales. These themes of place, interpretation and temporality will recur throughout the thesis.

2.2 Concepts of change: perspectives on low carbon transitions

2.2.1 The challenge of transition

Transition suggests a movement from one state to another. It raises the questions of what is moving, what it is moving towards, and by what means? A

bald statement - for example, that society is seeking to move towards a sustainable future by reducing carbon emissions - can haul a trainload of contested baggage. To avoid derailing this thesis, I have to leave some central assumptions unexplored. In terms of unpacking ideas of society, I focus on a particular aspect - the role of institutions - and so, while I acknowledge the extensive scholarship on the role of both the state (Meadowcroft, 2005; Jonas et al., 2011) and grassroots activism (Bulkeley & Betsill, 2013; Bichard, 2014) in environmental transitions, I pay them relatively limited attention. Similarly, I take as common ground the scientific consensus that carbon reduction is a necessary condition for sustainability (though not a sufficient one), in view of the impacts of human-generated greenhouse gases on the Earth's climate (Pacala & Socolow, 2004; Steffen et al., 2015).

The question in the middle of my bald statement - to define a sustainable future - is more central to this study, as are issues of 'transition', which concern the logical links between actions to reduce carbon emissions and the goal of sustainability. These are questions of who should act, how and where they should act, how much they should act, and what they should do as the consequences of their actions unfold.

Within recent scholarship, this movement towards a desired future has been variously labelled a 'sustainable socio-technical transition' (Smith, Stirling, & Berkhout, 2005), 'transition to a low-carbon economy' (Parrish & Foxon, 2009), 'low carbon transition' (Bulkeley et al., 2010), 'sustainability transition[s]' (Geels, 2010), 'transitions to sustainable development' (Grin, Rotmans, & Schot, 2010), and 'sustainable energy transitions' (Lockwood, Kuzemko, Mitchell & Hoggett, 2017). Without delving into the minutiae of each description, it is possible to identify key elements of the movement in question. It concerns the future development of human society, and in particular human economies. Within those economic futures energy production and consumption plays a central role, with a specific focus on reducing carbon emissions. But the desired state is dynamic (the verb 'develop' rather than 'development' as a noun) and how narrowly or widely 'sustainability' is conceptualised is contestable. Transition can encompass a wide range of social, economic and political

trajectories. What is of interest to transition scholars is not only the goal but the processes of change and contest. Bailey and Wilson (2009, p. 2327) observe that:

> [T]ransition theory is particularly useful in identifying transitions as ongoing processes of change between competing states within a spectrum of decision-making boundaries that shift continually over time (Wilson, 2007). These boundaries may be defined in terms of outcomes - a move from carbon profligacy to carbon constraints - or as a struggle between competing paradigms.

There are questions, then, of the type of challenge that transition presents to society. First and most obviously, there is a material challenge - not only in terms of energy production and consumption, but in terms of the sociotechnical systems of buildings, transport, public services and consumer goods for which energy is produced and consumed (Geels, 2004; Hargreaves, 2011). Objects can become 'actants' in constructing the social (Latour, 1999; 2005; Rydin, 2012). While the materiality of transition is a continuous presence in my study, it is not the main focus of my attention.

Second, transition addresses a spatial challenge. Bridge, Bouzarovski, Bradshaw, and Eyre (2013) articulate energy transitions as 'a geographical process, involving the reconfiguration of current patterns and scales of economic and social activity' (p. 331). Bulkeley et al. (2010) and Hodson and Marvin (2013) focus on climate change as a particularly urban and regional issue, especially in the context of the UK.

Third, as noted by numerous scholars (Marvin & Guy, 1997; Coutard & Rutherford, 2010; Davoudi & Brooks, 2014) transition presents a challenge of politics and governance. Implicit in notions of transition is a conceptualisation of society that is political in that it is structured by institutions and political interests, within which actors perform political as well as professional roles (Gibbs et al., 2002; Bulkeley et al., 2010). Of particular interest to me is the institutional character of this challenge. A sociotechnical regime, Rip and Kemp (1998, p. 338) note, is

> …the rule-set or grammar embedded in a complex of engineering practices, production process technologies, product characteristics, skills and procedures, ways of handling relevant artifacts and persons, ways of defining problems - all of them embedded in institutions and infrastructures.

Transitions are concerned with the ways in which the institutions that structure society adapt to new circumstances and work to bring new circumstances about. Climate change raises questions about how humans organise and regulate their social world, and whether such structures are fit for purpose.

A fourth challenge is one of temporality. Transition, in the context of environmental sustainability, concerns long-term change and evolutionary processes. This raises the question of how one should conceptualise the extended interim state between the present moment and the desired future, and whether transition is a quest for a state of equilibrium or a process of constant and complex change.

Holling (1973) frames this issue in terms of environmental resilience, defined as 'a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables'. Steffen et al. (2015), similarly, describe ecological resilience as 'the capacity of the Earth system to persist in a Holocene-like state under changing conditions'. Others take a more evolutionary perspective. Folke (2006) discusses resilience in terms of instability rather than stasis (p. 253):

> The resilience approach emphasizes non-linear dynamics, thresholds, uncertainty and surprise, how periods of gradual change interplay with periods of rapid change and how such dynamics interact across temporal and spatial scales.

Folke outlines a framework of adaptive renewal characterised by periods of rapid change, stabilisation and new disturbances. Boyd and Juhola (2015) talk of social-ecological transformations, 'defined in terms of the ability of systems to cross from one desired state to another and to continue to develop without changing their identity'. Alberti (2016) adopts a similar viewpoint, calling on urban planners to view cities as examples of 'coupled human-natural systems' that are constantly evolving and presenting opportunities for innovation as well as potential crises and challenges to human and ecological wellbeing. Such insights, drawn from evolutionary and complex systems theories, have strongly informed the development of transition perspectives.

2.2.2 The purpose of transition: two paradigms

This thesis takes as a given that some sort of transition is necessary in order to mitigate and adapt to the impacts of climate change. So it does not deal with questions of 'climate scepticism' (Urry, 2011). But among proponents of transition there are very different views of ends and means. Two of the most common perspectives in policy and practice - though by no means the only ones - are introduced below as a window on the norms, values and intentions at play in the contested territory of transition. They are not polar opposites, but I present them as prevailing and competing paradigms (Bailey & Wilson, 2009) that typically inform practice, and form a backdrop to the empirical findings I present in Chapters 6-8.

The 'limits to growth' perspective

The seminal report *Limits to Growth* (Meadows et al., 1972) encapsulated and generated a range of ecocentric theoretical approaches that have been influential over more than four decades. They rest on what Dobson (2000) describes as 'an article of faith for green ideologues' (p. 62) - namely, that Planet Earth's natural resources are finite and that exponential economic and population growth therefore cannot be maintained, either physically or as a matter of ethics. While the modelling behind *Limits to Growth* was relatively rudimentary, more recent work by physical scientists has reinforced and reframed its central thesis as 'planetary boundaries' (Rockström et al., 2009, Steffen et al., 2015).

Ecocentric theorists tend to view the process of transition as an opportunity to reconstruct society and human economies along lines that emphasise local, community-based action and cooperative forms of economics (Lewis & Conaty, 2012; Beilin & Wilkinson, 2015). There is an emphasis on equilibrium, both in terms of a harmonious relationship between the human and natural worlds, and in terms of greater equality between human beings. The goal of transition is to achieve such a state of harmony. Such beliefs are reflected in the constitutions of Bolivia and Ecuador, rewritten in 2008, based on an indigenous peoples' idea of the rights of nature translated in Spanish as *Buen Vivir* or

‘living well’. It emphasises the dependence of humans on ‘Mother Earth’ and the complementary rights of human and nonhuman species. Escobar (2011) describes it as ‘a different philosophy of life … one that subordinates economic objectives to ecological criteria, human dignity, and social justice’.

The ‘limits to growth’ perspective is closely linked to theories of environmental justice and climate justice (Davoudi & Brooks, 2014; Agyeman, Schlosberg, Craven, & Matthews 2016). Prominent advocates include E. F. Schumacher (2011) and Jonathan Porritt (1984). Jackson (2009) is among the most eloquent contemporary proponents of what has become known as ‘degrowth’. For him the nexus of equality, ecology and wellbeing demand a redefinition of prosperity and of the policies pursued to achieve it: prosperity, he argues, ‘consists in our ability to flourish as human beings - within the ecological limits of a finite planet’ (p. 16). Jackson rejects the idea that economic growth can be completely decoupled from carbon emissions and their consequences in terms of climate change. Rather than making growth sustainable, his imperative is to ‘make de-growth sustainable’ (p. 128).

Lewis and Conaty (2012) similarly make the case for a ‘steady state economy’ rather than one premised on growth. Economic and social restructuring is to be achieved through five ‘exit ramps’ - ‘strengthening our resilience, reclaiming the commons, reinventing democracy, constructing a social solidarity economy, and putting a price on the services nature provides to humans so we might awaken to the real costs of our current profligacy’ (p. 18). Hopkins (2008) and Magnuson (2013) similarly emphasise the value of local, community-based action to achieve transitions from high-carbon to ecologically responsible and sustainable lifestyles.

Perhaps the sharpest critique of such approaches is that they can be heroically romantic, exaggerating the agency of individuals and communities and ignoring ‘real world’ politics and socioeconomic structures. Humans cannot simply retreat into localised self-sustaining ecosystems. As Marvin and Guy (1997, p. 312) observe, the local cannot be considered as ‘a “black box” disconnected from the global, international and national contexts within which localities are framed’. While ideas such as Transition Towns ‘offer different visions for what sustainable and resilient urban futures might look like’

(Bulkeley & Betsill, 2013, p. 148), such initiatives should be seen within an 'ever more complex political economy of climate change, woven between notions of carbon control, resource scarcity, resilience and security' (p. 149).

The ecological modernisation perspective

While many ecocentric approaches to transition tend to emphasise a steady state of economic, social and environmental equilibrium, alternative views of transition tend to stress the dynamic self-renewing capacity of modern capitalism, assuming that growth can be successfully decoupled from carbon emissions through economic and technological innovation. Such concepts draw both on notions of adaptive renewal (Folke, 2006) and Schumpeter's concept of the self-renewing 'creative destruction' of modern capitalism (Schumpeter, 1976).

The term 'ecological modernisation' marks a fork in the road of environmental thinking that can be traced back to the concept of sustainable development advanced in the Brundtland Report of 1987 – 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, 1987). Developed through the 1990s, it can be summed up in the expression 'green growth', and has emerged both as an alternative to the 'limits to growth' thesis and as the hegemonic political response to environmental crisis. The theory of ecological modernisation, according to Gibbs (2000) 'specifically argues that economic development and ecological crisis can be reconciled to form a new model of development for capitalist economies', providing 'both a theoretical and a practical guide to an appropriate response'. This is not a case of greenwashing capitalism, but a belief that capitalism can be harnessed to achieve environmental ends. Jänicke (2008, p. 558) describes ecological modernisation as:

> …a technology-based and innovation-oriented approach to environmental policy. […] In general, an environmental problem proves politically less difficult to resolve if a marketable solution exists. In contrast, if a solution to an environmental problem requires an intervention in the established patterns of production, consumption, or transport, it is likely to meet resistance.

Gibbs (2006, p. 196) describes ecological modernisation as founded on 'a relatively optimistic view of the potential for technological change to lead to solutions for environmental problems'. It is the founding principle of the influential Stern Review (H.M. Treasury, 2006) commissioned by the UK Government, which describes environmental crisis as 'the greatest and widest-ranging market failure ever seen', and sets out a plan to shift economic growth away from fossil fuel dependency. Its author, Sir Nicholas Stern, has subsequently fronted the work of the Global Commission on the Economy and Climate, which aims to influence the process of ecological modernisation at a worldwide scale.

Ecological modernisation embraces a broad range of perspectives, from the neoliberal to the technocratic, and from devolved to state-centred. There is a shared core belief that the modern late capitalist economy (with appropriate guidance and intervention) has the capacity to address environmental challenges without compromising the onward march of material human prosperity. Stavins and Whitehead (1997) for example, argue that market-based approaches drive efficiency by creating incentives to reduce costs and maximise profits within a stable and responsive regulatory environment. As evidence they cite the phasing out of chlorofluorocarbons as a result of pollution charge systems in the United States, and the use of tradable permits under the auspices of the US 1990 Clean Air Act to create incentives to stop sulphur dioxide emissions from power stations.

While the assertion that humanity can have both economic growth and a safe environmental future has become a leitmotif of policy discourse, it is accompanied by increasingly urgent warnings that the necessary action to decouple economic growth from carbon emissions is not being taken. Stern and Calderon (2014, p. 8) advise that 'without stronger action' global warming is likely to exceed 4°C by the end of the 21st century, 'with extreme and potentially irreversible impacts'.

Urry (2011) frames ecological modernisation as 'resource capitalism', in which a full economic value is attached to the environmental goods (and bads) that traditional market capitalism has tended to treat as cost-free externalities. Urry makes the point that this is the 'sole plan on offer' within a capitalist

system. It is an offer many critics find unattractive. For While, Jonas and Gibbs (2010) there is a 'less than progressive side to carbon regulation in terms of reinforcing existing social and spatial inequalities, extending the reach of market environmentalism, and strengthening the power of state and capital at the expense of consumers, workers and interests in social and spatial equity' (p. 77). Hodson and Marvin (2013) argue that the creation of a low carbon Britain is part of an 'unfolding ideological struggle' shaped by the forces of neoliberal capitalism, urban and regional governance systems, and institutional frameworks of carbon regulation. Mulugetta and Urban (2010), meanwhile, highlight the Western cultural hegemony implicit in ecological modernisation.

Bulkeley (2014) points out, however, that more nuanced forms of discourse are emerging. The 'rather neat discourses of sustainability and ecological modernisation [have given] way to a panoply of new frames, from "smart" to "resilient", "ecosystem services" to "unburnable carbon"'. Despite these continually evolving frames, however, the ecological modernisation and planetary limits perspectives persist as dominant paradigms in transition thinking.

2.2.3 Ends and means: transition theories and transition management

While the political contests over the destination of transition continue, increasing attention has been devoted to the processes of transition, drawing on insights from science and technology studies, evolutionary economics, complex systems theory and adaptive resilience. Empirical studies of evolution and adaptation from natural science, and studies of complex processes from economics and management disciplines, have helped to illuminate academic responses to environmental challenges. While transition theories might fit with an objectivist and empiricist worldview given their affinity with evolutionary studies, they are also deeply concerned with the ways in which reality is socially constructed through organisations and shaped through humanly constructed rules and purposes (Voß et al., 2006). Geels (2010) positions the influential 'multi-level perspective' on transitions (discussed below) as a 'crossover' theory that combines (p. 505)

> the evolutionary interest in long-term patterns (trajectories, speciation, invasion, extinction) with an interpretive interest in social enactment, sense-making, and cognitive learning.

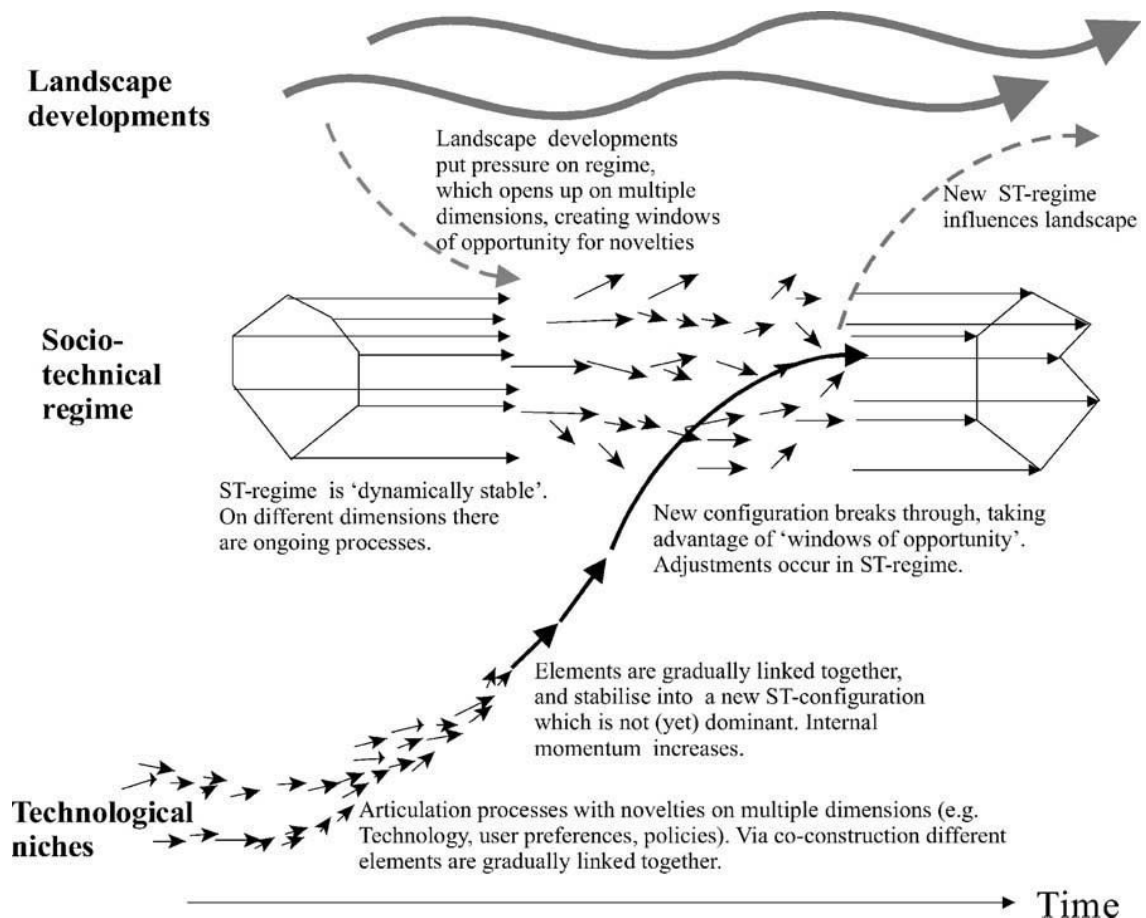
This garnering of insights from different philosophical perspectives is significant from my own broadly constructivist perspective (Berger & Luckmann, 1966). This is not to suggest that I do not consider there to be an objective world 'out there' (as critical realists or post-positivists stress) but that I emphasise the extent to which it is constituted through human understanding and interpretation, both through institutions (Hay, 2016; Lowndes & Roberts, 2013) and through social practices (Reckwitz, 2002; Shove & Walker, 2010).

The work of Rip and Kemp (1998) is seminal in the development of transition theory. Technological challenges such as the reduction of CO2 emissions, they observe, are not merely engineering challenges but societal ones. Technologies are shaped by social, economic and political forces, and in turn shape societies and human relations. To conceive of low carbon transitions, they argue, one has to understand 'the link between global climate change and … evolving sociotechnical landscapes' (p. 328). They argue that such landscapes and systems need to be perceived from multifaceted perspectives, and the authors draw on evolutionary theory and actor-network theory to delineate the ranges of agents and drivers that might be involved in changing such systems. These sociotechnical bundles of technologies, institutions and practices are described as 'regimes' (p. 340) that extend far beyond material artefacts and infrastructures.

Rip and Kemp's work is taken up in a series of papers by Frank Geels (e.g. Geels, 2002, 2004, 2011; Geels & Schot, 2007) that explain and expand the concept of a 'multi-level perspective' (MLP) as a way of understanding and describing processes of sociotechnical transition. In brief, the MLP argues that forces of change and innovation can be understood at three levels: the micro, which might be a research and development team within a company; the meso, which might describe a large firm or an industry; and the macro, which might describe the regulatory or political environment governing the industry, or external changes in societies and economies that affect how companies behave. Geels describes these levels as 'niche', 'regime' and 'landscape'. Drawing on innovation theory, he describes an evolutionary process in which new or

divergent activity developed in niches can go on to transform regimes; at the same time 'landscape' pressures might act to reinforce or destabilise regimes (Geels, 2002). Niches are protected spaces in which radical or novel actions and technologies can be envisaged and experimented with: Geels cites the development within the military of technologies such as radar and the jet engine. The different levels interact, with occasional breakthroughs of new technologies or social configurations (Fig 2.1).

FIGURE 2.1 THE MULTI-LEVEL PERSPECTIVE ON TRANSITIONS



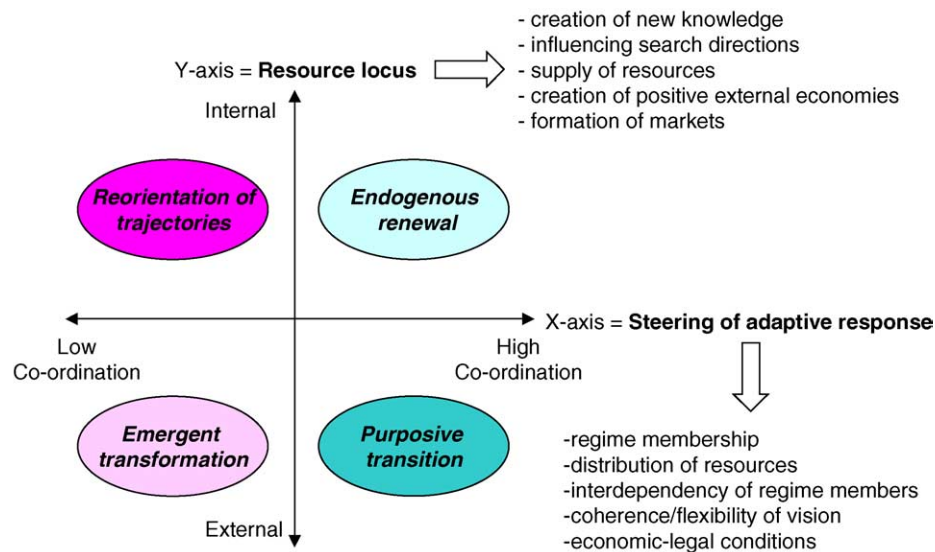
Source: Geels, 2002, p. 110

This approach leads advocates of the MLP into discussions of the dynamic relationships between societal structures and human agency. Geels (2004)

argues that human beings live in a 'technotope' in which technologies and infrastructures 'form a structuring context for human action' but in turn are influenced by networks of human actors; the structures 'not only constrain but also enable action'. In taking this view Geels and other advocates of the multi-level perspective lean heavily on Giddens's theories of structuration (1984).

Berkhout et al. (2003) and Smith et al. (2005) add a teleological and political aspect in the form of 'transition management'. They argue that previous literature devotes too much attention to innovation within niches and not enough to action at the regime level, for example by policymakers seeking to advance notions of sustainable development. They outline four different contexts for 'regime change', ranging from deliberate change caused by external actors ('purposive transitions') to internal processes ('endogenous renewal'), spontaneous changes resulting from internal dynamics ('reorientation of trajectories') and the unintended consequences of external actions ('emergent transformations'). These are visualised in Figure 2.2.

FIGURE 2.2. TYPOLOGIES OF REGIME CHANGE



Source: Smith, Stirling and Berkhout (2005), p. 1499.

Grin, Rotmans and Schot (2010) advance a comprehensive elaboration of a systems approach to low carbon transitions. Written in collaboration with Frank Geels and drawing on the work of other Dutch transition theorists, they set out in detail the factors in play in the multi-level perspective, the types of transitions that might be envisaged, and how transitions could be managed. Their view of low carbon transitions combines the multi-level perspective with concepts of co-evolution (how the interaction between societal subsystems influences their development), the 'multi-phase' concept of the timing of transitions (from 'dynamic equilibrium' to take-off, acceleration and stabilisation) and ideas of co-design and reflective learning through networks of experts and stakeholders. For Smith, Voß, and Grin (2010, pp. 441-442):

> The allure of the MLP is that it provides a relatively straightforward way of ordering and simplifying the analysis of complex, large-scale structural transformations in production and consumption demanded by the normative goal of sustainable development. Its conceptual repertoire links specific innovation activities configured in niches with structural transformations in regimes. Its terminology of niche, regime and landscape provides a language for organising a diverse array of considerations into narrative accounts of transitions.

Unsurprisingly, the MLP and transition management have their critics. One strand of critique is that the multi-level perspective pays insufficient attention to 'carbon control' (While et al., 2010) through the institutions and mechanisms of political governance. Bulkeley et al. (2010) insist on the need for greater attention both to governance (in terms of how transitions are ordered) and to politics (in terms of how they are contested). While they assert the value of the MLP as a way of understanding processes of change and stability within systems, and of showing how niche actions and experiments can lead to abrupt changes, they point out that the reconfiguration of sociotechnical systems is 'a process that is at once highly political and open to contestation and disruption' (p. 30). They call for a complementary focus on processes of 'urban metabolism' - not only urban social practices, but 'the myriad power relations that sustain and constrain such actions' (p. 5). Swyngedouw (2010) and Shove and Walker (2007), similarly, raise alarms over the potential 'reduction of the political to administration' (Swyngedouw, 2010, p. 225).

Connected with this critique is a heightened awareness of the importance of space and scale (Gibbs et al., 2002; Bulkeley, 2005; Bulkeley et al., 2010; Hodson

& Marvin, 2013; Murphy, 2015). This strand of scholarship emphasises that transitions are enacted in particular places and at different geographical scales (Bouzarovski et al., 2013). The insight of a relational approach to geography (Massey, 2005) is that space and place work together at multiple levels - distance and proximity are no longer seen purely in physical terms.

My own concern, and the focus of this thesis, is with what happens at the sharp end of attempts to implement transition processes. Bulkeley (2014) calls for studies of 'how, where, and by whom new ideas and narratives come to be introduced into the policy domain'; Geels (2014) seeks research into how sociotechnical regimes may be destabilised in order to facilitate the diffusion of renewable technologies. My study responds to these summonses, focusing empirically on purposive attempts to achieve carbon reduction at an urban and institutional scale, and investigating how new ideas of the future gain traction or are thwarted. In doing so it delves into an under-researched aspect of transition processes, and through the consideration of new data seeks to offer a novel conceptualisation of transition efforts.

2.3 The wickedness of wicked problems

The 'wicked' nature of climate change shifts the focus from the identification and implementation of 'solutions' towards the evolution of understandings and practices. Rittel and Webber (1973) discuss planning as a wicked problem, and planning is at the heart of how climate change is addressed and mediated through institutional activity. Agreements on action are drawn up, policies are devised, different approaches are conceived, budgeted for, implemented and modified. A wicked problem, unlike a mathematical one, changes every time it is formulated because information can never be complete: 'Problem understanding and problem resolution are concomitant to each other' (*ibid*., p. 161). Problems are not only recursive, but also intractable: the issue persists beyond the work of the planner. And responses are therefore not right or wrong, but 'better or worse' or 'good enough' (p. 163). Beck (1992) characterises the interaction of multiple wicked problems as 'reflexive modernity', an age in which every 'solution'

generates new and unforeseen challenges. Jessop (2000), similarly, speaks of the 'inevitability' of 'governance failure'.

The wickedness of climate change is pertinent to this inquiry in several ways. First, it is a scientific and technical challenge involving a bewildering mixture of known and unknown properties of and relationships between material actants. So while Pacala and Socolow (2004) propose 15 specific actions to reduce atmospheric carbon dioxide that 'can solve the carbon and climate problem in the first half of this century simply by scaling up what we already know how to do' (p. 968), their proposed solutions are advanced within a context of uncertain planetary limits (Steffen et al., 2015), some of which we are not yet able to calculate, but which if exceeded threaten to destabilise the 'Holocene' state within which modern society has evolved (and may have already begun to do so). Not only are the limits uncertain, but evolutionary theory and complex systems theories suggest that the changing interrelationships between actants may produce tipping points, 'punctuated equilibria', and unpredictable feedback loops (Duit & Galaz, 2008).

Second, climate change presents a sociopolitical challenge (Giddens, 2009; Urry, 2011). Because it does not respect national boundaries and has uneven global impacts, it demands action by and between governments and governance organisations at different geographical scales (Bulkeley, 2005; Boyd & Juhola, 2015). International agreements to limit greenhouse gas emissions can only work if a majority of states not only sign up to them but take appropriate action, and if that action is manifest in the locations where greenhouse gases are generated. There is a politics to climate action, too, in that the formulation and implementation of action exposes power relationships and imbalances. The question persists of who gets to define the rules in the game of carbon control, and in whose interests the game is played (While et al., 2010).

A third element of wickedness is the way in which climate change is rooted in everyday human practices, even down to mundane habits of washing and showering (Shove, 2010; Shove & Walker, 2010), and in the technologies and infrastructures that support them: food webs and supply chains, hydrology and sewerage, road, rail and air transport. There is a circularity in which behaviour changes to adapt to new technologies and infrastructure, while technology

develops in response to shifts in behaviour. An intervention in one dimension ripples into others in ways that may be impossible to foresee. Such co-evolutionary understandings 'recognise that effect is never in isolation and that interventions go on within, not outside, the processes they seek to shape' (Shove & Walker, 2010, p. 1278).

Fourth, as noted in the introduction, climate change presents a problem of logics, norms and values (Loorbach, 2010). It is thus a question of how human beings know and understand the world and how they translate their varying epistemologies into action via discourse. This is an institutional question, addressed through the institutional workshopping of rules, practices and stories (Lowndes & Roberts, 2013) and the clash and compromise of logics (Thornton et al., 2012).

2.3.1 Carbon lock-in

The persistence of the wicked problem of climate change has been framed as 'carbon lock-in' (Unruh, 2000). Atmospheric carbon dioxide has become the predominant signifier of climate change, and carbon management or control (Bulkeley & Betsill, 2013; While et al., 2010) the primary means through which climate change is being addressed in the early 21st century. Unruh's thesis is that the 'locked-in' dependence of contemporary society on CO2-producing fossil fuels is not only a consequence of industrial progress, but the result of social and technological interdependency. It is bounded by the past, and constrains the future. Unruh describes this (p. 825) as a 'techno-institutional complex'. For him, markets and industrial innovation develop through the combination of new technologies and institutional arrangements (professional and regulatory networks and structures) that favour some technologies and practices and disfavour others. Citing the development of the internal combustion engine as an example, he comments:

> [I]n 1885, it was considered the least promising option, being the most noxious, noisy, complicated and dangerous alternative. However, the very cheap cost of gasoline, which at the time was a hazardous by-product from the production of kerosene, clearly played a role.

Once technologies become accepted or common they become institutionalised through the development of infrastructure (such as roads and petrol stations), professional bodies, networks of expertise and industry lobby groups, and ultimately through market regulation and legislation. Unruh cites worldwide government subsidies for fossil fuel industries as an example of such institutionalisation. Societies thus become locked in to practices that they know they have to change. This stasis is 'not conceptualized as a permanent condition, but instead a persistent state that creates systemic market and policy barriers to alternatives' (p. 818).

The idea of lock-in captures the wickedness of an issue where risks are, to a large degree, understood but responses consistently prove inadequate. It is a key concept in theories of sociotechnical transition, which seek to explore the means and mechanisms by which society can shift from one sociotechnical paradigm to another (Smith, Voß, & Grin, 2010). It brings together the material embeddedness of technologies, their rootedness in social practices, and - vitally for this inquiry - the way they are socially entrenched through institutions. I consider institutions and institutional theory in more detail in Chapter 3.

2.4 The research setting: 'anchor institutions'

2.4.1 Context and characteristics

My inquiry focuses on a particular type of institution, and zooms in on particular examples of this type of institution. The reasons for choosing this focus of inquiry are discussed more fully in Chapter 5. At this stage I simply introduce the concept of the 'anchor institution' to show where and how my inquiry is situated.

'Anchor institution' is a term that has been in circulation for less than two decades. I explain here how anchor institutions have been defined, how the concept has developed and diffused, and how it fits within my research both as an example of how institutions are constructed and reconstructed, and as a window into processes of low carbon transitions. There is a fuller empirical

analysis and critique to be done of the 'anchor' concept, but that is beyond the scope of this inquiry.

The earliest definition of an anchor institution can be found in a 2001 paper from the Aspen Institute, a US-based philanthropic foundation (Fulbright-Anderson, Auspos & Anderson, 2001). The authors refer to 'institutions that have a significant infrastructure investment in a specific community and are therefore unlikely to move out of that community' as 'anchor institutions', citing colleges, universities, medical centres and public utilities as examples. An earlier paper for the Washington, D. C.-based Brookings Institution (Harkavy and Zuckerman, 1999) refers to 'eds and meds' - universities and hospitals - as 'cities' hidden assets', institutions whose success is coupled with the prosperity of their urban surroundings. 'They are essentially immobile institutions and their identity is tied to the city and community,' the authors argue (p. 3). In other words, they are both anchored - they remain in place - and anchoring, in that they form economic and social hubs for their host cities.

Taylor and Luter (2013) characterise anchor institutions as having four key characteristics: spatial immobility, corporate status, size (they are large employers and contributors to the local economy) and an 'anchor mission'. They are immobile because they are institutionalised into a particular location through invested capital, purpose, and relationships with customers or employees (Webber & Karlström, 2007). They are corporate in their institutional form (for example, as an educational or medical foundation or public agency). Their size matters, as they may be leading employers, purchasers of goods and services, or developers of real estate in their location.

The anchor institution literature is almost wholly concerned with localised examples of institutions - particular universities, hospitals or businesses - rather than the institutional fields they represent (higher education, healthcare and the market). In this thesis I use the idea of anchor institutions as localised, place-specific examples of institutions that, both in their general form and in their local manifestations, are a *sine qua non* to meaningful transition: a shift to a post-carbon economy-and-society (Urry, 2011) cannot take place without their active involvement.

2.4.2 A developing concept

The development of the anchor institution concept has two distinct strands. One taps into a tradition of community development, articulated by the Aspen Institute and more recently by the Democracy Collaborative at the University of Maryland (Alperovitz & Howard, 2005; Axelroth & Dubb, 2010), rooted in historic notions of a civic mission (especially for higher education institutions) and in more contemporary views of participatory democracy.

The second strand emphasises economic development, rooted in notions of competitive advantage (Porter & Kramer, 2011; Katz & Wagner, 2014). Urban neighbourhoods are improved by creating economic opportunities, particularly through institutions' procurement policies, property development and business support. Much of the literature extends Porter's theories of competitive advantage (Porter, 2008) from firms to institutions, and thence, as a consequence of anchor institutions' spatial immobility, to cities and locations. Educational institutions are 'sizeable businesses anchored in their current locations' whose economic potential needs to be unleashed (ICIC & CEOs for Cities, 2002).

The idea of anchor institutions first finds its way into UK literature in the Work Foundation's report (Work Foundation, 2010) for the Northern Way, an initiative of three of England's former regional development agencies. Relying heavily on the US literature, the Work Foundation draws similar conclusions: that anchor institutions represent a form of 'sticky capital' that can be applied to local economic development and regeneration. The Work Foundation adds museums, sports teams and private sector employers to the familiar 'eds and meds'.

As in the US, the British literature on anchor institutions builds on a strong backstory of civic engagement by higher education institutions. Robinson and Adams (2008) see universities as lead players in pursuing regeneration and promoting sustainable communities. Goddard (2009) and Goddard and Vallance (2011, 2013) beat the drum for the 'civic university', arguing for a new expression of the social objectives of the 'redbrick' universities established in England in the late nineteenth and early twentieth centuries.

The ‘anchor’ description is normative: it is a shorthand for institutions that not only have certain shared characteristics but act in particular ways. The role is a purposive one, to boost a local economy, revitalise a neighbourhood or encourage community participation. That normativity, and the institutional repositioning that accompanies it, is reflected in the expanding range of institutions that have been described or branded as ‘anchors’. These include religious congregations (Wedam, 2003); major businesses (Emery, Wall, & Macke, 2004); and arts, culture and sports organisations (Birch, 2009).

Institutional change is implicit in the adoption of the anchor language. Axelroth and Dubb (2010, p. 169) propose that an anchor institution mission ‘should involve the conscious application of the long-term, place-based economic power of the institution, in combination with its human and intellectual resources, to better the long-term welfare of the community in which it resides’. That is a mission that goes above and beyond a more narrowly conceived institutional function such as providing and regulating education, healthcare or local government services.

Interviewed for this research, Professor Ira Harkavy, chair of the Anchor Institutions Task Force, expanded on the notion of the anchor institution as a purposive as well as a descriptive construct:

> I would say there is a factual statement of what an anchor would be, which would be durable institution in a locality, rooted in place with some degree of permanence, and some degree, which it gets harder to figure, of significance. But that is not how, certainly, we’ve been conceptualising it. […] [We] have consciously given an even stronger tone by emphasising not just intentionality for the anchors, but actually encouraging them to act in ways that advance democracy, democratic practice and collaboration, social justice and equity, and place-based orientation.
>
> (I. Harkavy, interview, 4 May 2016.)

Implicit in this commentary is an acknowledgement of the plasticity of institutions (Lok & De Rond, 2013) and their openness to reinterpretation. In order to achieve desired economic or social changes, the institution must imagine and present itself in different ways. This is done through language and the adoption of new logics, values or goals. Taylor and Luter (p. 17) comment:

> To meet the challenges ahead, anchor institutions must morph into socially responsible civic institutions that are driven by a moral

> imperative. For this to happen, anchors must transform their cultures and make institutional changes that reflect social responsibility and a willingness to serve a larger purpose.

Such a reorientation takes us into the territory of transitions. Taylor and Luter's call is for institutions to be epistemologically remodelled to meet the challenges of a changed environment. Such a call echoes the ethical couching of the calls for reorientation in the face of climate change cited in the introduction to this study.

2.4.3 A window on transition

While the literature cited above demonstrates that the concept of an anchor institution is both fuzzy and contestable, institutions that fit the basic characteristics of anchors can provide a window on processes of low carbon transitions by virtue of their size, spatial immobility and economic impact in an urban context. In the context of a UK-based study, there are three key reasons for using organisations that share anchor institution characteristics as sites of inquiry.

First, anchor institutions are an overwhelmingly urban phenomenon. They are rooted in and connected to particular urban settlements. Cities are not only sites of economic activity and social contests (Brenner, Marcuse & Meyer, 2009; Holston, 2009; Storper & Scott, 2016) but also exemplify the challenge of transitions from a fossil-fuel based economy (Jonas et al., 2011; Bulkeley & Betsill, 2013; Moloney & Horne, 2015); they are 'a critical arena' for the governance of climate change (Betsill & Bulkeley, 2007). Anchor institutions' purchasing power enables them to specify goods and services that are less environmentally damaging; their position as major employers enables them to influence their employees' modes of travel; their investment in buildings and infrastructure enables them to embed low carbon approaches in real estate and energy systems. In the US literature Syracuse University, New York, has been acclaimed as an anchor institution that has reinvented itself and reconnected with its surroundings through a focus on green technologies (Axelroth & Dubb, 2010; CEOs for Cities, 2010; Cantor, Englot, & Higgins, 2013).

Second, anchor institutions sit at the intersection of policy-based, professional, and place-based networks. As such, they are likely to have institutional and economic interests in what kind of low carbon futures are articulated at national, transnational and local scales. The combination of an institutional form and a physical location provides them with influence over aspects of everyday life that function at multiple scales, through the interplay between national policies, professional expertise and local circumstances (Goddard & Vallance, 2013). They play an intermediary role in policy and governance and can be sites of policy transfer (Dolowitz & Marsh, 2000). The involvement of such institutions is required in order to embed changed policies and practices in daily life - for example, through hospitals' promotion of healthier forms of energy consumption (Cohen, 2014) or through the application of academic research in environmental improvements and carbon reduction (Goddard & Vallance, 2013).

Third, anchor institutions are durable (Gaffikin & Perry, 2012). Institutions are long-lived compared with commercial firms or individuals; they outlast the vicissitudes of policy initiatives and government plans (Peters, 1999; Meyer & Höllerer, 2014). Their institutional form persists over decades and sometimes centuries. As a result they can be expected to play long-term roles in processes of transition, both adapting to external influences and shaping transitions through their own institutional agency. Their actions 'enhance predictability, establish order, and … promote cooperation' (Anguelovski & Carmin, 2011).

2.5 Local, connected, durable

In summary, this study is situated at the intersection of the wicked problem of climate change, the institutional character of society, and the durable place-based institutions that are likely to guide trajectories of transition because of what they control and influence. In the context of the global challenge of climate change, I have proposed that anchor institutions provide a suitable location for an examination of transition processes, both because of their reach into and across society at multiple scales, and because they exemplify the constructed and malleable nature of institutions, which can enable and

constrain action through the ways in which they are conceived and understood across spatial and temporal scales.

Whether or not such institutions are conceived of as 'anchors' by their inhabitants and stakeholders, they share the characteristics of locality, connectedness and durability that define anchor institutions. They are also sites of the tensions and contradictions characteristic of institutions (Meyer & Rowan, 1991; Seo & Creed, 2002). Through and around these tensions and contradictions it is possible to observe processes of change.

A focus on anchor institutions that have adopted a public stance as leaders or innovators on environmental issues offers an opportunity to produce findings with the potential to inform wider academic inquiry, public policy and institutional practice. By selecting 'strategic' case studies (Flyvbjerg, 2006) it can be predicted that the findings are also likely to be true of similar institutions that seek to implement low-carbon policies and programmes. I explain my research design and methods more fully in Chapter 5. First, however, I must delve deeper into the theoretical background and examine in more detail how institutional theory (Chapter 3) and an interpretive methodology (Chapter 4) can frame and illuminate this inquiry.

Chapter 3: A theoretical framework

3.1 An institutional challenge

This thesis is about reading the future: the question of what kind of low carbon imaginaries are being forged, where, and with what effects. The first chapter explained why low carbon or sustainability transitions matter, what broad goals their advocates have in mind, and how 'transition' has been theorised in recent scholarship. I touched on the centrality of institutions in concepts of transition, and located the inquiry within the particular niche of 'anchor institutions'.

This chapter explains how institutional theory offers an appropriate theoretical lens for an investigation of low carbon futures. If responding to climate change and reducing global CO2 emissions are both more urgent and more difficult than have previously been assumed, the need to understand both the intractability of the institutions that frame human society and the scope for institutional change becomes more pressing. So it is necessary first of all to get to grips with the ontology of institutions: what sort of reality is institutional reality?

After a note about my research journey and starting position, I consider these ontological questions about institutions. What Unruh (2000) describes as carbon lock-in can be viewed as institutionally constructed (Chapter 2, section 3.1). In other words, the material reality that human and non-human species inhabit is significantly formed through the influence and actions of socially constructed entities that come into being through human speech acts (Searle, 2005) and proceed to structure human and non-human society politically, socially, normatively and economically (Giddens, 1984; Sewell, 1992). The possible futures available to human societies, if society is constructed through speech as well as practices (Reckwitz, 2002), are enabled or constrained by the ways in which institutional actors articulate and imagine such futures.

I move on to discuss the contribution of institutional theory in greater detail, and the institutional logics perspective in particular (Friedland & Alford, 1991;

Thornton et al., 2012). Given the multitude of 'new institutionalisms' (Peters, 1999; Lowndes & Roberts, 2013) I explain where my research sits within the spectrum of institutional approaches and the focus of my attention in this inquiry. I introduce two levels on which institutions can be studied: the macro level of institutional logics, and the actor-focused level of 'institutional work' (Lawrence & Suddaby, 2006; Lawrence, Suddaby & Leca, 2009) which focuses on the ways in which such logics are adopted and adapted in practice through the creation, maintenance and disruption of institutions.

Finally, I briefly consider some alternative theoretical perspectives, and explain my reasons for setting them aside in this instance.

3.2 Researching institutions

3.2.1 Starting the research journey

My standpoint at the outset of this research was what might be termed green pragmatism: a view that while radical shifts in economic and social values are required to retain a healthy natural environment and material wellbeing for future generations, such shifts are necessarily incremental and dependent on political processes. Following Jackson (2009) I identified neoliberal capitalism and its associated values and practices as the prime obstacles to change within the current UK and Western context.

My standpoint is not a traditional Marxist one of class struggle, though I recognise the deep connections between social inequalities and environmental degradation (Davoudi & Brooks, 2014); rather I take the view that most, if not all, human societies are complicit or actively engaged in environmental degradation, and that consequently, new understandings need to be forged of the relationship between humankind and its planetary environment. Such an approach is closer to the views of Schumacher (2011) and Porritt (1984), although I am sceptical of the more extreme ecocentrism of, for example, Ehrlich and Ehrlich (1972) or Lovelock (2000). Recognition of climate change as

a 'wicked problem' rules out reliance on simple solutions, whether theoretical or practical.

In terms of this study, the journey begins with an interest in how organisations conceptualise a low carbon future. If the fundamental challenge is to avoid potential ecological and social catastrophe and construct alternative ways of living (Jackson, 2009; Urry, 2011) then a series of questions arise: what kind of future is considered environmentally sustainable, how far do 'low carbon' imaginaries address the need to balance human welfare with environmental limits, who could or should seek to bring into being such imaginaries, and where and how might this be done? This has led me to cities as sites of carbon generation through the built environment, economic activity and personal consumption (HM Treasury, 2006; Hodson & Marvin, 2013), and sites of carbon governance through administration and regulation (Bulkeley et al., 2010; While et al., 2010; Coenen et al., 2012); to institutions as carriers of norms and cultures (March & Olsen, 1989; Thornton et al., 2012) and as shapers of practices (Thornton et al., 2012; Lowndes & Roberts, 2013); and to a focus on the 'cultural, institutional, and relational grounding of future projections' (Mische, 2009, p. 702).

The process of reflecting on theoretical and empirical literature, combined with the early scoping of the case studies that I introduce in Chapter 5, has involved an evolution of disciplinary emphasis. Other possible modes of inquiry were considered and rejected along the way (See section 3.5, below).

While I always intended to draw on different disciplinary traditions in order to examine the problem in the round, in keeping with the interdisciplinary emphasis in transition research (Loorbach, 2010; Wolfram & Frantzeskaki, 2016), my early focus on 'anchor institutions' was rooted in a bias towards urban geography and a concern in much of the UK-based transitions literature with issues of governance in general and urban governance in particular (Marvin & Guy, 1997; Jonas et al., 2011; Bulkeley & Betsill, 2013). However, my interest in the role and remit of organisations led me towards the rich literature on institutions both in political science (March & Olsen, 1989; North, 1990) and in sociology covered by the umbrella term 'new institutionalism' (Powell & DiMaggio, 1991; Lowndes, 2001; Schmidt, 2008). These institutional studies

draw on research traditions from North America and Europe, and highlight the roles of processes rather than places or political structures.

In recent years institutional scholars have begun to turn their attention to 'sustainability transitions' (Garud & Gehman, 2012; Lefsrud & Meyer, 2012) while a focus on governance has led some sustainability scholars to turn towards institutions (Geels, 2004; Krueger & Gibbs, 2010; Markard, Raven, & Truffer, 2012; Avelino & Grin, 2017), especially through the lens of the 'regime' concept deployed within the multi-level perspective (Geels, 2002). Institutional and urban studies have produced theoretical and empirical work on how transitions might take place and on what institutions and organisations have done. But there has been a dearth of material on how actors and institutions in practice envisage the futures towards which they are ostensibly oriented. Ann Mische's work (2009, 2014) is a notable exception. 'Low carbon' targets tend to be operationalised relatively crudely in terms of carbon reduction plans or technological changes which 'have not challenged the prevailing orthodoxy of urban policy' (Bulkeley et al., 2010, p. 46) while the normative and cultural implications of carbon reduction have taken the form of big-picture prescriptions rather than empirical analysis (Jackson, 2009; Urry, 2011; Lewis & Conaty, 2012).

From early in my inquiry I have been interested in how actors and the institutions in which they are embedded have narrated ideas and aspirations for a sustainable future. This interest builds on the work of Czarniawska (1997, 2004) on the importance of narratives within organisations, and Throgmorton's work (2003) on planning as a narrative process. In institutional studies, Lowndes and Roberts (2013) also highlight the role of narratives in constraining change. The focus of attention here is on constructions and meanings rather than materials and quantities - not because materiality and carbon reduction are unimportant, but because there has been relatively little empirical research into the generation of meanings associated with low carbon futures.

3.2.2 The role of institutions

Grafstein (1988) emphasises the 'double life' of institutions: they constrain human activity, but they are themselves human creations. They exert a structuring force on society (March & Olsen, 1989). In this respect an institution is not the same as an organisation, although institutions tend to be manifest in organisational forms. An organisation is a formal collective of actors - a commercial firm, a football team, a religious congregation, a branch of government. An organisation may be short-lived, but an institution is concerned with the *longue durée* (Giddens, 1984, p. 200). Organisations and institutions may both impose rules, but only an institution can determine what it is that is being ruled. Meyer and Höllerer (2014) describe organisations as 'a general institutionalised category', while institutions are concerned with 'more durable typifications and patterns'. Lowndes and Roberts (2013, p. 50) argue that in institutions, 'regulative, normative, and discursive elements work together to shape behaviour'. Entry and exit costs for an organisation can be low, but for an institution they may be astronomical; hence former British prime minister Gordon Brown's inadvertent conflation of rescuing the banking system and 'saving the world' in 2008 (*Hansard*, 10 Dec 2008, col. 527).

An institution sets the rules within which organisations function. In creating an institution, humans endow a bundle of corporate entities and regulated practices with a particular meaning and status (Searle, 2005). The institution of higher education, for instance, is both an assemblage of individual organisations and a set of practices that plays a part in the structure and organisation of society. This inquiry is concerned with individual organisations as instances within particular institutional fields (Thornton et al., 2012, p. 13), and both with what institutions do (their functions) and what they are (their ontology).

Much institutional scholarship has focused on the function of institutions. Institutions are frequently defined by their activities. For political scientists such as Rhodes (1997, p. 3) institutions are concerned with 'the rules, procedures and formal organisations of government'. North (1990, p. 3) defines institutions as 'the rules of the game in a society or, more formally … the humanly devised constraints that shape human interaction'. March and Olsen

(1989), drawing on sociological and organisational studies perspectives on institutions, describe them in terms of 'standard operating procedures' in society, but add (p. 47) that institutions not only have a regulatory function, but help to construct social meaning:

> [I]nstitutions create their own environments by the way they interpret and act in a confusing world. It is not simply that the world is incompletely or inaccurately perceived, but also that actions taken as a result of beliefs about an environment can, in fact, construct the environment.

Whether as generic entities or in their local manifestations, then, institutions regulate society and provide a means through which society is understood - they fulfil sensemaking and sensegiving roles (Gioia & Chittipeddi, 1991; Weick, 1995; Fiss & Zajac, 2006). Although these may be expressed in specific domains of interest or activity (government, the economy, education, and so on) they are also overarching. Berger and Luckmann (1966) describe the formation of institutions as 'a reciprocal typification of habitualised actions'. For Meyer and Rowan (1991) 'institutionalisation involves the processes by which social processes, obligations, or actualities come to take on a rule-like status in social thought and action'. Friedland and Alford (1991) conceptualise institutions as 'both supraorganisational patterns of activity through which humans conduct their material life in time and space, and symbolic systems through which they categorise that activity and infuse it with meaning'. These patterns and systems become associated with particular logics and norms through which actors make sense of the world.

3.2.3 What is an institution?

While scholars have paid detailed attention to what institutions do and how they do it, less scrutiny has been devoted in recent literature to the question of what institutions are. Yet, to the best of current knowledge, humankind is the only species that forms institutions and uses them to define, describe and regulate social reality. For that reason alone their ontology merits attention. In the context of a changing climate induced largely through human activities, institutions' role in both perpetuating and mitigating climate change, and in adapting to the futures thereby created, demands serious examination. Hence

my interest in how institutional actors construct and reconstruct low carbon imaginaries, and how in doing so, they shape the futures they imagine.

Institutions can be described in terms of patterns and routines of human behaviour. But they are much more than that: Friedland and Alford (1991), among others, make clear that they are constructed patterns. They are socially devised entities that have the capacity to mould both material and social reality. They do this through what Searle (2005) describes as the assignment of a status function.

Searle argues that institutions are 'observer relative' phenomena: they cannot exist without the conscious intentionality and perceptive faculties of human beings. He describes three notions that are needed to explain social and institutional reality: collective intentionality, the assignment of a function, and status functions. While other species demonstrate collective intentionality and the assignment of functions (for instance, in the use of tools), humans exhibit highly sophisticated patterns of assigning and perpetuating status functions. Searle describes such functions (p. 7) thus:

> [T]he object or person to whom the function is assigned cannot perform the function just in virtue of its physical structure, but rather can perform the function only in virtue of the fact that there is a collective assignment of a certain status, and the object or person performs its function only in virtue of collective acceptance by the community that the object or person has the requisite status.

Such assignments, Searle states, 'typically take the form X counts as Y'. The 'X counts as Y in C' (C being context) rule not only regulates an institution, but constitutes it: without it the institution would not exist. A university, for example, only signifies education to the extent that (and as long as) collectively, humans assign such a status to a particular bundle of specifically qualified individuals, purposively designed buildings, and regulated practices. Searle goes as far as to argue that rules of assignment are 'the glue that holds human societies together'. They generate power: an institution is empowered, through the collective assignment of its status, to act in ways that individuals or un-instituted groups cannot - for example, by writing and enforcing laws, by validating forms of knowledge, or by raising taxes. So power, and power relations, are not external to institutional reality, but are to a significant extent a product of it. As Friedland

and colleagues express it, '… powers and interests are often constructed through the very institutional objects through which power and interest are deployed' (Friedland, Mohr, Roose, & Gardinali, 2014, p. 337). I will return to the discussion of power below (sections 3.3.4 and 3.5).

Searle makes two further points that are important for this inquiry. First, he notes that status functions are created and represented through language. They are speech acts. For a researcher, this has important implications: institutions are not disembodied structures that are 'out there' as a 'default explanation' or causal factor (Latour, 2005), but are both malleable and durable in the same way that language is malleable and durable. The way an institution is continuously spoken or inscribed into being - the power that Bourdieu (1999) describes as the power of naming - helps to explain the potential and the limits of what it is able to do. Barley and Tolbert (1997) say that 'institutions are to social action what grammars are to speech'. So when researchers consider the role of institutions in addressing environmental challenges, they need to understand what capacities and incapacities are generated by the language that circumscribes them.

Second, Searle observes (p. 22) that 'institutional facts only exist from the point of view of the participants' and cannot therefore be reduced to patterns of behaviour. Institutions are constituted both collectively and temporally, forming durable structures, but are susceptible to alteration through the interpretations generated by individual actors. They are both a product of human action and a constraint on it (Giddens, 1984). Structure and agency are exercised through the continuous interplay of collective and individual understanding and interpretation, enacted through everyday 'scripts' rehearsed by actors (Barley & Tolbert, 1997). Berger and Luckmann (1966, p. 96) argue that 'the institutional order is real only so far as it is realised in performed roles'. The word 'only' may be excessive, but performances, and the effects of those performances on material reality, are central.

These performances can be read and interpreted in a comparable way to the reading and interpretation of texts, an issue I will explore further throughout this thesis. Czarniawska (2004) draws on the hermeneutic tradition to claim (p. 4) that:

> Meaningful action shares the constitutive features of the text; it becomes objectified by inscription, which frees it from its agent; it has relevance beyond its immediate context; and it can be read like an 'open work'. The theory of literary interpretation can thus be extended to the field of social sciences.

Returning to Searle's formula, I suggest an epistemology of institutions presents us not only with the ontological claim that 'X counts as Y in C' but also that 'X counts as Z in Cx' where Cx is an altered context; or, more typically, that 'X counts as (Y+Z) in Cx' where the role of the institution is reinterpreted to the extent that an additional or, in exceptional circumstances, a replacement status function may be assigned. Alvesson and Sköldberg (2009) argue that such institutional change takes place as a result both of institutions' reification - their embodiment in physical constructions and human enactment - and their legitimisation within systems of symbolic meaning.

An institution may start as one thing and become something else, or something more, through the use of rhetorical practices that legitimise new interpretations: Suddaby and Greenwood's study of North American accountancy practices (2005) shows how firms shifted from being independent bodies governed by an audit culture concerned with ethics and standards to becoming embedded in multi-disciplinary practices driven by market logics and values of entrepreneurship. DeJordy et al. (2014) show how a religious university in the United States resolved strategic conflicts through the adoption of a 'superordinate logic' expressing new institutional values and practices. Changes in institutional function may be a result of 'displacement', where old rules are replaced with new ones; 'layering', where new rules are added; 'drift', where changes in the wider environment make old functions obsolete; or 'conversion' where old rules are interpreted in new ways (Thelen, 2009; Lockwood et al., 2017).

When an institution adopts a position as an agent of change, and as an agent of a change that is not implicit in its institutional history and function, I argue that this is a case of X counting as Y+Z. My research involves three institutional examples: a university in Manchester that has adopted the slogan 'let's make a sustainable planet'; a housing organisation in Sunderland that has claimed to be 'a planet smart company working to reduce our impact on the planet'; and a

local authority, Nottingham City Council, which argues that it is creating the UK's 'most energy self-sufficient city'. Each of these declarations of position, I argue, confers an institutional status other than or additional to that which was previously assigned. I explore this in more detail in Chapter 5, where I introduce each case study and explain why they were chosen.

3.2.4 A constructivist institutionalism

Before delving into the detail of institutional theory, it may be helpful to sketch out how a constructivist ontology and interpretive epistemology of institutions frames and bounds my inquiry, and why I consider it an appropriate way of addressing a 'wicked problem'.

First, it precludes a study of institutions as if they are natural phenomena, independent of the observer and investigable as if they conform to external laws or patterns. To declare institutions to be social constructions inevitably places a fuzziness around their reality, because what has been constructed can be, at least in theory, infinitely deconstructed and reconstructed. Second, a constructivist ontology validates an interpretive method (Hay, 2011), which focuses on the different understandings and meanings in play in any situation and the ways in which such understandings generate and affect action. This is not to deny material or empirical reality. As Searle argues, there are both observer-dependent phenomena and observer-independent phenomena. Such an approach has been formulated by Hammersley (1992) as 'subtle realism' which stresses that while there are real phenomena, 'all knowledge is based on assumptions and purposes and is a human construction'; and by Boltanski and Thévenot (2006) as 'dynamic realism' that aims 'to bring the work of construction to light yet without reducing reality to a purely labile and local agreement about meaning' (p. 17). My understanding of constructivism is that there is a continuous interplay between constructed reality and material reality; institutions are powerful examples of how the constructed can shape the material.

Such an approach sits between the reduction of institutional dynamics to the games played between interest-following rational actors (North, 1990) and a

radically relational or 'flat' ontology, in which institutions emerge primarily as an expression of the unfolding interrelationships and networks of actors in time and space (Emirbayer, 1997). Purely rational-actor and more extreme relational approaches both tend to downplay the collective norms, logics and cultures that are characteristic of institutions and institutional action. From an institutionalist perspective, values are not simply 'by-products of actors' engagement with one another in ambiguous and challenging circumstances' (Emirbayer, 1997, p. 309), but can be the means through which actors choose to frame, interpret, and justify their mutual engagements (Boltanski & Thévenot, 2006).

Such a perspective creates space for contest. For Hay (2016) a constructivist institutionalism foregrounds processes of change. While there can be no expectation of equilibrium because institutions are always being reconstructed and reinterpreted, there is scope for the political in influencing how that process happens. Hay comments (p. 533):

> To argue that something is socially constructed is, in the end and above all, to argue that it can (and perhaps should) be different from how it is and/or how it is perceived to be. It is, in short, to argue for politics and to politicise the social.

Hay outlines six features of a constructivist institutionalism, which are worth quoting in full because they have a bearing on this research. These characteristics are (p. 526):

> (1) A focus on the processes of institutionalisation, de-institutionalisation and re-institutionalisation rather than on institutions per se;
>
> (2) An understanding of actors' engagement with institutions as mediated ideationally (with institutionally situated actors orienting themselves towards their institutional environment through a series of subjective and inter-subjective understandings, cognitions and normative dispositions);
>
> (3) A characteristic focus on institutional change as politically contingent;
>
> (4) An understanding of actors' interests and normative orientations as socially constructed rather than materially given;
>
> (5) A rejection of any presupposition of institutional equilibrium and an acute sensitivity to the importance both of moments of crisis and their political constitution (though, probabilistically, these may be infrequent, they are likely to prove enduring in their significance);

(6) An inductive approach to process tracing calling for a political anthropology of institutionally situated action and change.

Hay's understanding of processes of institutional change and the importance of points of crisis is particularly pertinent in the context of 'wicked problems'. If responses to wicked issues are, in Rittel and Webber's formulation, contingent and iterative, a constructivist institutionalism allows a focus on adaptability and responsiveness to change at both structural and agentic levels. It enables the researcher to consider processes of understanding and interpretation as well as behaviour and action, and views the work of institutions as intrinsically political, adding a necessary appreciation of power and politics to understandings of transition (Geels, 2014).

3.3 Stasis and change: insights from institutional theory

Visions of the future, utopian or pragmatic, are central to notions of transition (Smith et al., 2005; Grin et al., 2010). But a focus on visions and imaginaries also needs to recognise the difficulties in bringing such imaginaries into being. Attention to institutions helps to explain why change is thornier than policymakers tend to suggest. By focusing on institutions one can understand change as a cultural phenomenon rather than as an outcome of policy interventions; it highlights the *longue durée* of sustainability rather than the instrumental activities of carbon control.

In this section I outline recent approaches to institutional theory and explain how they will be applied in the context of this research. I address the ways in which institutional scholars have addressed the challenges of change, outlining the concepts of path dependency and embedded agency, and explain how institutional theory is concerned with issues of power.

I then explore two aspects of institutional action that are particularly pertinent to this thesis. First, I note both the constraints and the productive possibilities raised by the existence of multiple or competing logics and their relevance to notions of transition; and I explain the alignments between the institutional logics perspective and convention theory (Boltanski & Thévenot, 2006). Second, I consider the need to take into account actors' roles in

constructing, interpreting and reinterpreting such logics in practice through the 'institutional work' of creating, maintaining, and disrupting institutions (Lawrence & Suddaby, 2006). This interest in actors' agency in applying logics to construct and reconstruct low carbon imaginaries will be a central focus of my empirical analysis in subsequent chapters.

3.3.1 Institutional theory: background and application

Institutional theory deals with alteration and stasis, bringing power and policy into the mix. It foregrounds issues of structure and agency that are subordinated to questions of complex systems and evolution in some of the transition literature.

The study of institutions is not a single perspective, but a melding of insights from political science, economics and sociology (Peters, 1999; Lowndes & Roberts, 2013). These three disciplines remain significant in explaining both the similarities and differences in institutional studies. Although they highlight differing insights into what an institution is - a political structure, a set of 'rules of the game' or a social structure represented in organisational form - they share a concern with how the collective organisation of society both constrains actors and, to a lesser extent, empowers them.

Historically, the study of institutions has been associated with the discipline of public administration – 'the rules, procedures and formal organisations of government' (Rhodes, 1997). Its focus has been the historical development of government structures and a normative concern for 'good government' (Selznick, 1996; Peters, 1999). Attention has been devoted to the regulative and ordering functions of institutions. By contrast, more recent studies, rooted in sociological scholarship, have followed Searle (1969) and Giddens (1984) in focusing on the constitutive nature of institutions, or the way in which they structure society. Such inquiries are concerned with 'the reproduction of institutionalised practices, that is, practices most deeply sedimented in time-space' (Giddens, 1984, p. 22). While the way society is regulated may change with modest difficulty, the way society is constituted is remarkably resistant to change.

Such insights, drawing strongly on organisation studies, have underpinned the ‘new institutionalism’ of the late 20th century. Revisiting Weber’s understanding of the ‘iron cage’ of the rationalist order, Powell and DiMaggio (1991) argue that within ‘organisational fields’ the actions of the state and professional bodies tend to make organisations increasingly similar. Through such processes of isomorphism ‘organisational actors making rational decisions construct around themselves an environment that constrains their ability to change further in later years’ (p. 65). This occurs through processes of coercion, mimesis, and the adoption of professional norms. Whereas the ‘old’ institutionalism was seen to focus on the formal exercise of power, typically within government (Kraatz, 2009; Selznick, 1996), the new institutionalism is also concerned with informal and cultural practices (Lowndes, 2001).

There is, however, no single ‘new institutional’ theory. Peters (1999) and Lowndes and Roberts (2013) identify three major strands of institutional theory - sociological (stressing values and meanings), historical (stressing the consequences of decisions and structures), and rational choice (focusing on actors’ pursuit of interests). A string of sub-strands has emerged over the years. Lowndes and Roberts identify nine overlapping types of new institutionalism (*ibid*, p. 31): normative, rational choice, historical, empirical (rooted in the comparative study of different institutions), international, sociological, network (focusing on interactions between individuals and groups); constructivist or discursive (focusing on frames of meaning); and feminist. At the same time they argue (p. 41) that institutional theory is entering a ‘third phase’ of convergence and consolidation in which scholars’ focus of attention is centred on ‘wicked issues’ of agency and power, time and space, studied through attention to rules, practices and narratives.

The ‘new’ institutionalism particularly emphasises persistence and stability, and the embeddedness of social structures (Powell & DiMaggio, 1991; John, 2003; Duit & Galaz, 2008). More recently, attention has shifted to processes of institutional change and how it comes about, spawning a growing body of work on the dynamics and conflicts within organisations (Friedland & Alford, 1991; Barley & Tolbert, 1997; Seo & Creed, 2002; Smets, Morris, & Greenwood, 2012). In this inquiry I draw mainly on the sociological and discursive strands

of institutionalism, with a particular focus on recent scholarship on institutional change.

3.3.2 Path dependency and concepts of change

An important contribution of historical institutionalism (Selznick, 1984; Lowndes & Roberts, 2013; Lockwood et al., 2017) is its emphasis on how yesterday's choices constrain today's action. Andrews-Speed (2016) identifies three characteristics of path dependency: change is not easily reversed; options become more limited at later stages of a development path; and most institutional change is incremental. The last of these is in conflict with earlier articulations of path dependency.

Krasner et al. (1984) and John (2003) argue that the consequence of path dependency is not continuity or even simply constrained choices, but the likelihood of 'punctuated equilibria'. Krasner et al. (p. 234) posit that '[i]nstitutional change is episodic and dramatic rather than continuous and incremental. Crises are of central importance'. Long periods of stability are interspersed with periods of rapid and disruptive change. These concepts have informed transition theories, which similarly tend to suggest states of broad continuity interrupted by radical shifts. Path dependency, as Voß et al. (2006, p. 13), note, 'imposes severe constraints on the transformations needed to achieve sustainability. Because certain social and technological functions must be maintained, revolutionary disruptions are to be avoided'. The transition challenge, in their formulation, is to achieve an equilibrium shift without provoking the crisis that Krasner and colleagues regard as a *sine qua non*.

Path dependency is a notion borrowed from rational-choice economics (North, 1990; Kay, 2005). Punctuated equilibria are borrowed from evolutionary biology (Krasner et al., 1984; John, 2003). Both come with a caveat: analogies are seldom directly transferable. To couple path dependency with theories of punctuated equilibria is to highlight that institutions are both predictable and unpredictable. Complex systems theory, which has also proved influential in the context of low carbon transitions (Duit & Galaz, 2008; Loorbach, 2010) helps to highlight how this paradox operates; Alberti (2016, p. 64) for instance, argues

that in the context of urban ecosystems, '[c]hange has multiple causes, can follow multiple pathways, and is highly dependent on historical context'.

Again, however, an institution is no more actually an ecosystem than it is a set of economic choices or a biological organism. The parallels are helpful, but not determinative. The concept of institutional logics (see below, section 3.5) provides an important counterweight and an alternative perspective, getting us closer to the characteristics of stability and change. Logics indicate why a particular path is chosen (Friedland & Alford, 1991). The existence of multiple logics - those embedded within an institution and those drawn upon by institutional actors or applied exogenously - can both help to explain what has been observed as path dependency and as punctuated equilibria, and be suggestive of how institutions might operate when under pressure to change.

3.3.3 The 'paradox of embedded agency'

Pressure to change, and the pressures of change, foreground the 'paradox of embedded agency' (Seo and Creed, 2002). This describes the tension, explored throughout the history of institutional scholarship, between structure and agency, ossification and revolution (Sewell, 1992; Barley & Tolbert, 1997). March and Olsen (1989) argue that actors adopt institutional rules as 'catechisms of expectations' and accommodate their preferences to institutional interpretations of the world. While institutions do change, 'the idea that they can be transformed intentionally to any arbitrary form is much more problematic' (p. 56). Change is more likely to come about, as the insights of institutional work (see below, section 3.6) suggest, through 'mundane adaptiveness' (*ibid*., p. 58). Writing from a rational-choice perspective and with a focus on the activities of commercial firms, North (1990, p. 83) observes:

> The agent of change is the individual entrepreneur responding to the incentives embodied in the institutional framework […] Change typically consists of marginal adjustments to the complex of rules, norms and enforcement that constitute the institutional framework.

March and Olsen's work, which sits within a sociological tradition of analysis, suggests that 'appropriateness' covers norms and senses of obligation that may not be consistent with individual preferences. The institutional logics

perspective and convention theory - which I discuss in more detail in section 3.5 - both recognise that actors may have to resolve their own incompatible logics as well as navigating the dissonant logics of the institutions in which they find themselves. Battilana and D'Aunno (2009), echoing Emirbayer and Mische (1998), highlight the temporal nature of embedded agency: there is a historical orientation, expressed in the repetition of institutional practices; a present experience, expressed in judgements made about current circumstances; and a projective element, focused on possible futures. Conflicts give rise to a heightened consciousness that may lead to changes in practice.

For Seo and Creed the dilemmas of incompatible expectations and experience are addressed through praxis, which they define (p. 223) as 'political action embedded in a historical system of interconnected yet incompatible institutional arrangements'. Seo and Creed view action as incorporating three components: actors' self-awareness that their needs and interests are unmet; their mobilisation as a consequence; and multilateral or collective efforts 'to reconstruct the existing social arrangements and themselves' (p. 230). But actors are only able to exploit institutional contradictions within the context of existing institutional logics (p. 237):

> [A] fundamental feature of praxis is the selective adoption and deployment of available institutional logics that legitimize and mobilize political action against incommensurate institutional logics.

This corresponds to an 'interpretivist turn' in political science (Hay, 2011). The approach to interpretive institutionalism developed by Bevir and Rhodes (1999; 2005) and adopted by Krueger and Gibbs (2010) and Krueger, Schulz and Gibbs (2017) focuses on policy 'dilemmas' as generators of new institutional meanings. Hay (2011) builds on Bevir and Rhodes, presenting a model of interpretive institutionalism in which 'situated actors' either reproduce or transform institutional and ideational contexts through their practice in response to dilemmas. I adopt a less 'decentred' approach to interpretive institutionalism than Bevir and Rhodes, which I outline below.

An understanding of the paradox of embedded agency is central to an analysis of the role of institutions in low carbon transitions. Unruh (2000) views institutions, functioning as components of 'techno-institutional systems', as key

factors in the persistence of carbon lock-in. Institutional change is of interest not only because of the intra-organisational dynamics of change, which have attracted extensive attention (e.g., Barley & Tolbert, 1997), but because of the wider influence such changes might exert. Conversely, institutional resistance to change is of interest because it helps to show the constraints on processes of transition. This resistance is conceptualised as 'path dependency' in historical institutionalism.

'Purposive transitions' (Smith et al., 2005) require a combination of divergent activity by actors within their institutional contexts, as well as external pressures that push institutions towards new trajectories. These are counteracted by the rules, norms and logics embedded within institutions. Geels (2004) considers institutions to be sites of 'dynamic interplay between actors and structures'. What kind of transitions emerge will, I suggest, depend (at least in part) on the degree to which actors can bend existing institutional logics to new ends, replace unsupportive logics with new ones, and legitimise new values and courses of action, including changes in investment decisions, spending priorities and preferred technologies.

3.3.4 Making sense of power

A discussion of embedded agency requires an understanding of power. Power matters, and not only because transition theories have been critiqued for their lack of attention to power and politics (Chapter 2, section 2.3). The powers of institutions, and the powers exercised within institutions, are central to institutional perspectives.

However, just as an ontology of institutions recognises a mutually-influencing duality of agency and structure and of the material and discursive, so it rejects the notion of domination as a primary explanatory concept. If institutions are the means by which humans organise the social world, then power enters the arena not as an *a priori* entity but as an outcome of institutional reality. Domination may be seen as a matter of who controls the institutions, through what means and on what terms (Meyer & Rowan, 1991). Mahoney and Thelen (2009, p. 8) describe institutions as 'distributional

instruments laden with power implications', but this tends to suggest a reification of power as a resource. Even Bourdieu's idea of symbolic capital (Bourdieu & Wacquant, 1992; Emirbayer & Johnson, 2008), which recognises how status and position provide the holder with additional resources, risks reducing power to a bankable asset rather than recognising that it is through capacities to enable or constrain action that power can be observed.

Allen's pragmatic analysis of power (2008) considers power as 'a relational effect of social interaction' (p. 1614); although resources and position influence power dynamics, they do not predetermine outcomes. Power is generated in practice, although practice may be embedded and routinised in the form of rules. Fligstein and McAdam (2012, p. 18) assert that power and preferences 'are always bound up with larger issues of meaning and identity'; in doing so they focus attention on how actors act within what they term 'strategic action fields' rather than on the unequal structuring of such fields.

Giddens describes power as 'the capacity to achieve outcomes' (Giddens, 1984, p. 257), especially through influence over rules and resources. Informed by Giddens' and Allen's analyses, I follow Friedland and Alford (1991, p. 246) in recognising that power 'as concept and praxis is culturally and institutionally contingent'. Power may be exercised through processes of 'sensegiving' by institutions (Gioia & Chittipeddi, 1991), accompanied by 'rule making' by organisations, and 'rule taking' or 'rule breaking' by actors (Lowndes & Roberts, 2013). 'Regulation, practice and storytelling' (Lowndes & Roberts, 2013, p. 77) are ways of deploying or limiting power in institutional settings. Rule taking, bending and breaking are characteristics of embedded agency and of institutional work.

3.3.5 Orienting values, multiple logics

Since the 1990s there has been a growing scholarly interest in the underpinning logics embedded within institutions. McPherson and Sauder (2013, p. 167) define institutional logics as 'macro-level belief systems that shape cognitions and influence decision-making processes in organisational fields'. Institutional logics help us understand how action is enabled or constrained by

social structures. The concept of institutional logics can be traced back to Max Weber's notion of 'value spheres', or belief systems that, once adopted, drive actors to act in particular ways (Bruun, 2008) – a debt acknowledged in recent institutionalist literature (Friedland, 2013; Meyer & Höllerer, 2014).

Institutional logics are implicit in the notion that institutions have a status function: the institution of the judiciary, for example, implies a norm about the rule of law, a social contract of rights and responsibilities. Packed into each institution is an armoury of implied or explicit values, purposes and frames of reference. These frameworks both structure and are structured by the wider social world. Friedland and Alford (1991) argue that society should be thought of as 'an interinstitutional system'. Institutions, they argue (p. 232), are 'both supraorganisational patterns of activity through which humans conduct their material life in time and space, and symbolic systems through which they categorise that activity and infuse it with meaning'.

This leads the authors to identify five 'core institutions' of the capitalist west: the capitalist market, the bureaucratic state, democracy, the nuclear family, and the Christian religion. While the debt to Weber is apparent, the iron cage becomes more flexible because these core institutions 'are potentially contradictory and hence make multiple logics available to individuals and organisations'. Far from being a dead hand, bureaucracy becomes a dynamic process of contradiction and change. Society's core institutions provide 'transrational orders' (p. 235) or logics to which actors can appeal and which structure both their material practices and their symbolic systems of value. These institutional logics 'are symbolically grounded, organisationally structured, politically defended, and technically and materially constrained' (p. 248).

Friedland and Alford's contribution shifts the focus from the processes of isomorphism identified by DiMaggio and Powell to processes of, and the potential for, divergent change. By highlighting the function of institutional logics they offer a theory of agency as well as structure (p. 254):

> Without actors, without subjectivity, there is no way to account for change. And without multiple institutional logics available to provide alternative meanings, subjects are unlikely to find a basis for resistance.

More recently, the 'institutional logics perspective' (Thornton et al., 2012, p. 2), has been advanced as 'a metatheoretical framework for analysing the interrelationships among institutions, individuals, and organisations in social systems'. Thornton and colleagues identify seven ideal types of 'institutional order': the family, community, religion, the state, the market, the profession and the corporation. Each provides different root metaphors for living (for example, the 'common boundary' of a community); relies on different sources of legitimacy, authority and identity; offers different bases for norms (for instance, membership of a religious congregation); has different strategic orientations; exercises different mechanisms of control; and offers different perspectives on the economy.

In some institutions competing logics exist at a fundamental level because institutions are 'built directly on the fault lines that separate different segments of society' (Kraatz, 2009, p. 72). In such instances 'organisations still have a need to create the appearance of self-consistency, integration, coherence, and reliability'. Conflict and tension are inherent, with unpredictable outcomes, but also allow new forms of resolution. Goddard and Vallance (2011), for example, present the institution of the university as the one 'most capable of linking the requirements of industry, technology and market forces with the demands of citizenship' (p. 4). While logics are embedded in institutions at a macro level, they are also adopted and deployed by individual actors at a micro level (Zilber, 2002; Mahoney & Thelen, 2009; McPherson & Sauder, 2013). By investigating the dynamics of institutional logics one might gain insights into the processes of challenge, change and the resolution of differences that are interwoven with concepts of transition.

Contemporaneously with Friedland and Alford, the economist Laurent Thévenot and sociologist Luc Boltanski were outlining their own 'convention theory', describing how multiple and competing 'orders of worth' drive actors' decisions, are deployed to justify actions, and lead to compromises that enable disputes and differences to be settled. Published in French in 1991 and in English in 2006, *On Justification* (Boltanski & Thévenot, 2006) sets out six 'polities' or 'orders of worth' by means of which individuals and collectives seek the common good. For Boltanski and Thévenot these polities, comparable

to Friedland and Alford's 'core institutions', are the 'inspired world', governed by religious revelation or creative genius; the domestic world, governed by family values; the world of fame, or reputation; the civic world; the market world; and the industrial world, which values efficiency and productivity. More recently, convention theorists have posited the existence of a 'green order of worth' (Thévenot, 2002; Blok, 2013). Table 3.1 compares institutional and convention theorists' approaches to these institutional orders. The table highlights the parallel heuristic approaches arising from different strands of scholarship, rather than suggesting a predictive or prescriptive framework. I return to and expand this comparison in Chapter 9, section 2.

TABLE 3.1. COMPARISON OF INSTITUTIONAL ORDERS

<table>
<tr><th colspan="11">Institutional orders and 'orders of worth' in institutional scholarship and convention theory</th></tr>
<tr><td>Institutional orders
(Friedland & Alford, 1991)</td><td colspan="3">Capitalist market</td><td colspan="3">Bureaucratic state</td><td colspan="2">Democracy</td><td>Nuclear family</td><td>Christian religion</td></tr>
<tr><td>Institutional orders
(Thornton, Ocasio & Lounsbury, 2012, p.73)</td><td>Market</td><td>Corporation</td><td colspan="3">Profession</td><td colspan="2">State</td><td>Community</td><td>Family</td><td>Religion</td></tr>
<tr><td>'Six worlds' - orders of worth (Boltanski & Thévenot, 2006, pp 159-212)</td><td>Market</td><td>Industrial</td><td colspan="2">Fame</td><td colspan="4">Civic</td><td>Domestic</td><td>Inspired</td></tr>
</table>

Sources: Friedland & Alford, 1991; Thornton et al., 2012; Boltanski & Thévenot, 2006.

Boltanski and Thévenot draw on a tradition of French pragmatic sociology exemplified by Bourdieu's logics of practice (1977) and are generally more concerned with how individual actors resolve dilemmas than with collectives, but they explore their theory by referring to organisational literature to demonstrate how different orders of worth play out in practice. Wilkinson (1997) situates the genesis of convention theory within the concern for the 'rules of the game' prevalent in rational-choice economics. The focus is on the rules, norms and conventions to which actors refer in making choices and rationalising action. Wilkinson emphasises the interpretive approach characteristic of convention theory (*ibid*, p. 318), the understanding of rules as intersubjective 'mechanisms of clarification' in decision-making, and a focus on institutions as upholders of the norms and collective actions that govern the social construction of economic activity - in short, what is held to be of value.

Boltanski and Thévenot's identification of 'orders of worth' reinforces Friedland and Alford's insights into contradiction and the effects of multiple logics, and complements the emphasis in sociological institutionalism on norms, values and meanings. Boltanski and Thévenot focus on how actors use

multiple 'measures of worth' in negotiating complex situations. The institutional logics perspective has similar concerns, but starts with society rather than the actor. In Friedland's framing (2013, p. 37):

> Institutional logics posit a social world that is a world of purposes and the powers they found before it is a world of powers and the purposes that legitimate them. It is a world of complementary and contradictory orders of value production in determinate social locations before it is a world of transposable conventions.

Convention studies and institutional scholarship examine the same phenomenon, but as it were through different ends of the telescope. In both approaches 'actors are assumed to be able to cross and draw upon multiple orders of worth and institutional orders' (Thornton et al., 2012, pp. 178-9). An agenda for research, Thornton and colleagues note, would be to analyse 'the conditions under which actors can rhetorically link worlds and how that might relate to the creation of new logics and the alteration of extant ones'. By linking and altering logics, actors might turn Searle's 'X counts as Y in C' formula into 'X counts as Y+Z'. As the winds of climate change blow through the iron cage, new logics may become available to institutional actors. As Thornton and colleagues put it (p. 83):

> Given the availability of multiple logics, individuals have the potential for agency in choosing which of the multiple logics they rely on for social action and interaction.

Hay (2016) argues that institutionally situated actors orient themselves towards their institutional environment 'through a series of subjective and inter-subjective understandings, cognitions and normative dispositions'. Such processes can be seen through the lenses of sensemaking (by actors) and sensegiving (by organisations) (Gioia & Chittipeddi, 1991; Weick, 1995); as justification of action (Boltanski & Thévenot, 2006); or as reflection-in-action (Schön, 1983). There are parallels with the 'interpretive institutionalism' developed by Bevir and Rhodes (2005) and deployed empirically by Krueger and Gibbs (2010) and Gibbs and Krueger (2012). Here institutions are analysed in terms of prevailing beliefs, institutional traditions, and the dilemmas posed by policy conundrums. Here too the focus is on 'how actors construct meaning' (Krueger & Gibbs, 2010, p. 824).

When choosing possible futures, logics and orienting values expressed through projective thinking about 'imagined future possibilities' take on a heightened importance and can have critical outcomes (Mische, 2014). My particular focus in this thesis is to examine how the deployment of logics affects institutions' visions for environmentally sustainable futures. As a locationally and organisationally situated empirical inquiry, however, it also stresses the role of actors in constructing and interpreting institutional logics, an issue addressed by scholars of 'institutional work'.

3.3.6 Institutional work, situated practices

Institutions and their activities are not simply driven by macro-level logics. An understanding of institutional activity needs to take into account actors' roles in constructing, interpreting and reinterpreting such logics in practice. This 'institutional work' concerns 'the purposive action of individuals and organisations aimed at creating, maintaining and disrupting institutions' (Lawrence & Suddaby, 2006).

Smets et al. (2012, p. 877) observe that 'field-level institutional change may emerge from the mundane activities of practitioners struggling to accomplish their work' in a reciprocal interplay of micro-level processes and overarching logics. Like social practice theories (Reckwitz, 2002), a focus on institutional work turns the spotlight onto the way the social world is constructed through habitualised, repetitive practices and how such practices develop and become embedded. Lawrence and Suddaby highlight three foci for the study of institutional work: the 'awareness, skill and reflexivity' of individual and collective actors; an understanding of institutions as constituted in actors' 'more or less conscious action', and a concept of action as practice – even action to change an institutional order takes place within 'sets of institutionalised rules'. Like Bourdieu, they focus on the 'feel for the game' of social actors working within fluid and complex fields (Jenkins, 2002).

Scholars of institutional work seek to present a nuanced formulation of concepts of structure and agency, seeking to avoid 'depicting actors either as "cultural dopes" trapped by institutional arrangements, or as hypermuscular

institutional entrepreneurs' (Lawrence et al., 2009, p. 2). Studies of institutional work emphasise the variety of interests and agendas at work and the ability of actors (and groups of actors) to draw on multiple resources to initiate and justify action. But rather than zooming out to a landscape view, institutional work scholars emphasise the 'richness of local processes' (Greenwood, Díaz, Li, & Lorente, 2010). Institutional work perspectives recognise that practice consists of navigating 'muddles, misunderstandings, false starts and loose ends' (Blackler & Regan, 2006, p. 1845).

The notions of institutional logics and institutional work imply that structures are populated by active agents who apply the logics and perform the work. There is a constant interplay between logic and practice. A wealth of scholarship within institutional theory focuses on the agency of institutional workers (both individual and collective), much of it implicitly or explicitly acknowledging the institutional constraints that bound it. For rational-choice scholars such as North (1990), institutions 'reduce the uncertainties involved in human interaction' (p. 25) but they are not necessarily effective means of doing so. Ostrom (1986) similarly views institutions as configurations of rules that govern how actors in a game are permitted to act. But within these constraints, individual agency is the dynamic through which decisions are taken, resources acquired and positions strengthened or undermined.

Actors shape institutions not only by selectively following rules, but also through talk and persuasion. There is a discursive tradition in institutional scholarship (Schmidt, 2008; 2010) which harks back to Arendt (1958), who conceives of the *vita activa* as the agency of individuals who by being part of the body politic accept the primacy of words and persuasion in decision-making: 'finding the right words at the right moment, quite apart from the information or communication they may convey, is action' (p. 26). Much of this is done through institutional narratives and the construction of institutional memory - work that serves 'to reproduce the institution, reproduce or challenge its power structures, induct new members, create the identity of the institution and its members, adapt to change, and deal with contested or contradictory versions of the past' (Linde, 2001, p. 519).

While institutional work is concerned with contradiction and its management as a source of change (Hargrave & Van de Ven, 2009), institutional work studies also attend to the way institutions are stabilised and maintained and change is avoided (Lawrence, Leca, & Zilber, 2013). This may be done through processes of storytelling to reinforce 'institutional meta-narratives' (Zilber, 2009) or through actors' adoption of multiple logics at different times to accommodate themselves to each other in an 'ongoing, politicised activity of response and counter-response' (Jarzabkowski, Matthiesen, & Van de Ven, 2009). Coule and Patmore (2013) highlight the practice of 'normative, discursive work' in maintaining and transforming institutions, and observe that this enables 'less powerful actors' to 'frame and serve their interests' (p. 980).

Barley and Tolbert (1997) argue that institutional change can be observed through changes in the routine 'scripts' deployed within institutional actors' conversational interactions. Routine scripts, however, suggest an almost subconscious activity. Lawrence and Suddaby's definition of institutional work (2006) highlights actors' 'purposive action'. Institutional work is both a response to dilemmas and a posing of them in order to manage and navigate complexity. In this respect it echoes Weick's description of sensemaking (1995, p. 2) as a response to 'a surprise, a discrepant set of cues, something that does not fit'.

By deploying multiple or competing logics actors may resolve or manage dilemma and challenge. Zilber's analysis (2002) of institutional change at an Israeli rape crisis centre details the ways in which different sets of actors draw on competing logics - in this case, a feminist logic and one of therapeutic assistance - and in so doing change the character and direction of the centre and the services offered. Zilber describes an interplay of actors, actions and meanings, in which new meanings are 'infused' into existing practices through interpretation. Institutional meanings become 'political resources' in struggles over institutional direction. Such meanings may be expressed through organisational narratives, which in turn 'constrain and enable social action' (Godart & White, 2010).

Institutional work need not involve the replacement of one dominant logic by another. An 'uneasy truce' may persist over an extended period, as Reay and

Hinings' study of healthcare in Alberta, Canada (Reay & Hinings, 2009) shows. Faced with a conflict between 'business-like' models of healthcare and the traditional deference to clinicians' professional expertise, physicians and managers found ways to navigate or circumvent conflict. Mechanisms included differentiation, in which medical decisions were earmarked for physicians' approval; informal participation by physicians in management decisions; joint work in opposition to government; and joint innovation in 'experimental sites' (a finding that has parallels with the notion of the 'sociotechnical niche' in transition studies). Goodrick and Reay (2016) suggest a spectrum of techniques for managing complexity, from compartmentalisation to 'hybridisation' of logics. Actors could adopt a range of strategies, including reinterpreting practices; taking advantage of existing synergies between logics; and finding innovative ways to combine logics.

Smets, Jarzabkowski, Burke, and Spee (2015) find similar 'balancing mechanisms' to manage competing logics in their study of the Lloyds of London reinsurance market. Conflicts between the 'community logic' of the Lloyds fraternity and the 'market logic' of individual firms could be handled through a process of segmentation (boxing off different areas of work); bridging (using knowledge from one field to inform the other); and demarcation (devising rules for applying different logics in different contexts). Through such processes multiple logics can persist alongside each other and 'institutional complexity can itself become institutionalised and routinely enacted within everyday practice' (p. 932).

In areas of large-scale policy reform, as Reay and Hinings' study found, institutional work can prolong the influence of prior logics in the face of purposive attempts to introduce new logics. Coule and Bennett (2016) highlight the case of welfare reform in the UK, where even though governments are able to change the rules of the game they cannot monopolise the symbolic resources used by institutional actors to preserve and promote their own systems of meaning. Recent studies have shown how actors can engage in the 'repair' of institutions faced with crisis or rupture, both at an organisational scale (Lok & De Rond, 2013) and across an institutional field such as Britain's National Health Service (Herepath & Kitchener, 2016).

Lok & De Rond's study emphasises the 'plasticity' of institutions, their ability to cope with disruption and dissonance. While my own study is not one of institutional repair in the face of crisis, it does concern the way actors handle and interpret institutional plasticity. Mahoney and Thelen (2009, p. 23) identify four categories of agents engaged in processes of gradual institutional change: insurrectionaries, symbionts, subversives and opportunists. They can be identified by examining whether they seek to preserve institutional rules, and whether they personally abide by institutional rules. The space in which change occurs, they argue, is in 'the "gaps" or "soft spots" between the rule and its interpretation or the rule and its enforcement'.

Reay, Golden-Biddle and Germann (2006) show that gradual change can take place through 'small wins' and 'microprocesses' of institutional work that prove the value within an organisation of new roles. Institutions may morph through a 'mix and match' approach that leads to the emergence of hybrid institutional logics (Battilana & Dorado, 2010). Smets et al. (2012) develop a model to describe how such changes may translate across different levels of activity. The everyday experiences of novel institutional complexity, urgency, and consequence can activate mechanisms of change that span individual, organisational, and field levels (p. 891). Quoting March (1981), they argue that change occurs because 'most of the time most people in an organization do what they are supposed to do; that is, they are intelligently attentive to their environments and their jobs'.

Rein and Schön (1993, p. 157) observe that 'individuals may use their discretionary freedom to act as deviants and violate institutional norms'. Such individuals may act as 'institutional entrepreneurs' (Leblebici, Salancik, Copay, & King, 1991; Fligstein, 1997; Lawrence et al., 2009). Fligstein (1997, p. 398) defines institutional entrepreneurs as actors with social skills, which he defines as 'the ability to motivate cooperation in other actors by providing those actors with common meanings and identities in which actions can be undertaken and justified'.

Institutional entrepreneurs both articulate and sell a vision of change, based 'on institutional logics which, they anticipate, will resonate with the values and interests of potential allies' (Battilana, Leca & Boxenbaum, 2009, p. 82). The more radical the change, the more it must be characterised as aligned with the

institution’s existing goals and purposes - in other words, the less obtrusive it must appear.

As MacIntyre (2007, p. 181) notes in a different context, changed practices produce changed institutions, and *vice versa*: ‘no practice can survive for any length of time unsustained by institutions’. Five minutes after the revolution, the revolutionary becomes an administrator (Kraatz, 2009). For innovative agency to take effect, it must become institutionalised - and thus constrained as well as enabled.

3.4 Roads not travelled

Rhodes (1997, p. 80) argues that ‘no theory is ever true, it is only more or less instructive’. The more theoretical perspectives a researcher can bring to bear, the more can be learned. But theory, like the universe, is constantly expanding.

The approach outlined in this and the previous chapter builds on Geels (2010), who presents the multilevel perspective on transitions as a ‘crossover approach’ that builds on the ‘dynamic interplay’ between ontological perspectives. It attempts to make the complex comprehensible without downplaying complexity. There are other approaches, however, that also offer instructive potential but which I have had to set aside in this inquiry for reasons of space, time and clarity. I outline three of the most important below, each of which opens up expanses of theoretical interest, and explain my decision to resist their attractions.

Since the last decades of the twentieth century, the constructivist concern with language and narrative in social theory (Maines, 1993) has been somewhat overshadowed by the ‘material turn’, a focus on the role of nonhuman actants that has grown in popularity with the work of Bruno Latour and colleagues (see, e.g., Latour, 1999) and the development of actor-network theory. At the same time there has been an emphasis on situated social practices as a primary lens for viewing the social world, drawing on the practice theories of Pierre Bourdieu (Bourdieu, 1977) and illustrated by the work of researchers such as

Elizabeth Shove (Shove, 2010). Third, there is a cluster of theoretical perspectives that view the relations between actors and institutions in terms of the power relations and political struggles between the state, the market and the people.

Actor-network theory (ANT) focuses on how reality is created and configured by shifting assemblages of different 'actants', human and non-human (Callon, 1984; Latour, 2005). An example is Bruno Latour's study of Louis Pasteur's experiments with lactic acid. Latour argues (1999) that the yeast at work in the acid is invisible until Pasteur's trials 'turn it into an actant'. Reality is constituted by the material and human working symbiotically (p. 124):

> In the course of the experiment Pasteur and the ferment mutually exchange and enhance their properties, Pasteur helping the ferment show its mettle, the ferment 'helping' Pasteur win one of his many medals.

For Latour (2005, p. 75) '[t[here exists no relation whatsoever between "the material" and "the social world", because it is this very division which is a complete artifact'. The 'flat' ontology of actor-network theory focuses on assemblages of actants and rejects hierarchies or levels of action; an institution, viewed through this lens, is simply the sum of its parts. Boelens (2010, p. 37) writes that

> A crucial element of such notions is that there exists no absolute time-space – just as there is neither absolute nature nor absolute society – but only specific time-space configurations, which are conditioned by motives and relations in networks. The attribution of any significance to scale or any idea of micro- or macro-issues is in fact superseded.

Boelens describes ANT in terms of a contrast with the 'visionary but prescriptive' outlook of modernism. The notion that transitions can be managed sets alarm bells ringing for ANT scholars. For Rydin (2012) ANT seems 'ideally suited to understand a world in which technological systems and environmental change are major preoccupations' in that it gathers technological, social, economic and political actors under its wings. By focusing on what Latour calls the assemblage of myriad actions and decisions by a multiplicity of actors and examining how they interact, ANT can help in 'making complexity legible' (Rydin, 2012, p. 27).

Actor-network theory is primarily a theory of connections and of what happens as a result of those connections, which ultimately makes up the 'collective' referred to by sociologists as society (Latour, 2005). Its symmetrical treatment of actants assumes a comparability between the human and material, and an immediacy of action, that challenges theories of institutions as both durable and structuring. As an example, Rydin's study (2012) of planning documents such as the London Plan and energy-performance models as actants in planning practice emphasises how documentary material can take on an object-like character. However, it tends to overlook the constructed and interpreted features of such materials, which contain embedded histories and discourses (they cannot otherwise come into existence) and are themselves read and interpreted in the course of practice.

ANT is attractive in its emphasis on contingency, multiplicity and unpredictability - all of which challenge notions of purposive transitions. Norms and values, however, are generally seen as contingent rather than structuring, a view at odds with institutional scholarship and which downplays the longitudinal effects of normative worldviews. For my study, ANT offers too limited a view of both human agency and the durability of institutional structures.

Social practice theory is concerned with the 'endogenous and emergent dynamics' that configure everyday lives (Shove, 2010). Reckwitz (2002) sees the antecedents of practice theory in the social theories of Bourdieu, Giddens and Foucault, as well as in Bruno Latour's work. Reckwitz labels practice theories as a form of cultural theory, as opposed to the purpose-based economic theories of rational choice or the norm-based sociology of Durkheim and his successors.

Practice theories focus on 'the implicit, tacit or unconscious layer of knowledge which enables a symbolic organization of reality' (p. 246). Practices are everyday actions and ways of being that are 'carried' by individuals or collectives of actors; a practice (p. 250) is 'a routinized way in which bodies are moved, objects are handled, subjects are treated, things are described and the world is understood'. Shove (2014) shows how a focus on everyday practices such as 'standby consumption' (the practice of leaving appliances on standby) has militated against policy-driven encouragement to reduce energy use (and

thus carbon emissions). Hargreaves (2011) describes practices as conveying meaning - in other words, they are interpretive - but 'meaning is seen as residing within the practice rather than in individuals' heads'.

Practice theory is an important counterweight to theoretical approaches that stress intentionality and planning and privilege the world of policy. Like theories of institutional work, social practice theory stresses the importance of the mundane in shaping society (Lawrence et al., 2013). But the teleological and projective aspects of planning matter (Throgmorton, 2003; Goldstein et al., 2015). An exclusive focus on social practices without tackling their interplay with institutional structures would privilege the present to the detriment of understandings of how both the persistence of the past and visions of the future impact on human development.

A third important set of perspectives, touched on in the discussion of critiques of transition theory in Chapter 1 (section 2.1) and in the discussion of power and embedded agency above (Chapter 2, section 3.3), concern the impact of power relations and **struggles for political dominance** between the governing and the governed over the emergence and outcomes of transition processes. I refer here to the wealth of political science and related scholarship that has given rise to theories of the role of the state (Lindblom, 1977; Meadowcroft, 2005); the regulationist approach to capital accumulation (Jessop, 1995; Jessop, Brenner, & Jones, 2008; Gibbs, 2006); urban regime theory (Stone, 1993; Jonas, Gibbs, & While, 2011); and theories of urban governance, particularly in the context of low carbon transitions (Jessop, 1995; Bulkeley & Betsill, 2013; While & Whitehead, 2013).

Any analysis of low carbon transitions that does not take into account how power is manifested and deployed to the advantage of some and the disadvantage of others risks falling into the trap of what Swyngedouw (2010) describes as 'post-politics', leading to a technical analysis that remains power-blind. However, this is not the only way of examining the issue and while I recognise the importance of these perspectives, they are secondary to my analysis. While this thesis could have been presented as an analysis of carbon control (While et al., 2010; Hodson & Marvin, 2012) or even as an inquiry into

‘governance failure’ (Jessop, 2000), I see greater scope for contributing to knowledge via the theoretical focus outlined earlier in this chapter.

The focus on embedded agency recognises the impositions of power, but highlights the opportunities and resources available to individual as well as institutional actors. As Giddens argues (1984, p. 16), ‘all forms of dependence offer some resources whereby those who are subordinate can influence the activities of their superiors’. Ricoeur’s insights into the act of reading, echoing De Certeau (1984), suggest that individual actors are able to choose which narratives they will attend to and how they will read and reconstruct them in their own practices. Reversing Marx’s axiom (Marx, 1845), in order to change the world it may first be necessary to reinterpret it.

Research itself, of course, is a matter of interpretation (Giddens, 1984). In the next chapter I discuss why I have adopted an interpretive methodology in this inquiry, and how I intend to use it to frame my empirical findings.

Chapter 4: Text and action: an interpretive approach

This chapter considers meanings as both the subject and method of study, and draws on the hermeneutics of Paul Ricoeur as its guiding philosophical approach.

Meanings, as discussed in the previous chapter, are at the heart of institutional change (Zilber, 2002). And interpretations, as Hay (2011) remarks, are 'not only the subject but also the medium of political analysis'. Judgements are not only observed, but are exercised by the researcher in the course of study. Interpretation, Alvesson & Sköldberg argue (p. 272), 'implies that there are no self-evident, simple or unambiguous rules or procedures, and that crucial ingredients are the researcher's judgement, intuition, and ability to "see and point something out"'

While noting Rorty's caveat (1980) that 'words are not worlds' I also recall his assertion that 'representation does not reflect; it creates' (quoted in Czarniawska, 2004, p. 118). As Baert (2003) observes, discourse and interpretation do not provide a privileged window on objective reality, to 'represent the outer world as it really is' (p. 100). Rather, the value of hermeneutics is to present new possibilities (*ibid*., p. 101): 'Not only does it illuminate what was previously unquestioned or taken for granted, it also allows people to envisage alternative future scenarios.'

So I begin by showing the relationship between language and action from the hermeneutic perspective. I then examine three ways in which interpretive processes are the subject of my analysis as well as its method. First, they are deployed to construct institutional stories and identities; second, they are used to formulate visions of low carbon futures and mobilise support for such visions; and third, interpretations can be used to contest as well as construct change. Finally, I return to interpretation as research methodology. I discuss the particular perspective of Paul Ricoeur in more detail and explain how I intend to apply Ricoeur's hermeneutics within this study.

4.1 Hermeneutics and action

Bulkeley (2014) poses 'the question of how, where, and by whom new ideas and narratives come to be introduced into the policy domain'. Following Czarniawska (1997, 2004) and Hay (2011) I argue that institutions and organisations may be read and interpreted as texts, and that the ongoing process of reception and reinterpretation has the potential to alter the power and function of an institution. This approach aligns with the interpretive dimension of transition scholarship (Geels, 2010; Avelino & Grin, 2017), which stresses what 'can be' rather than what 'ought to be' (Avelino & Grin, 2017, p. 23). In energy transition contexts, discourse is central to processes of learning and adaptation (Andrews-Speed, 2016).

This interpretive exchange between understanding and action could be described as occurring at the interface between the world of the text - the institution as inscribed in legislation or policy - and what Ricoeur (1991) calls the world of the reader - the individual or group whose acts of interpretation determine the agency of the text. Language, in this context, is not disembodied and disconnected from practice but a foundation for social action and a prime medium through which actors can 'increase the range of human possibilities' (Baert, 2003, p. 102).

To fully understand the workings of material actants or forces in and around human society, be they CO2 emissions or the energy sources that generate them, one must examine how society organises or patterns itself: what sociotechnical configurations require these material resources and how have they chosen to use them? Underpinning these patterns is the exchange of human ideas and intentions through language. Without text (or speech) no context can be spoken about. Searle (2005) discusses institutions as speech acts. Rorty (1989) declares that '[t]he world does not speak. Only we do'. For the literary theorist Terry Eagleton (2008), 'language is a field of social forces which shape us to our roots'. Bevir and Rhodes (2005, p. 174) argue that 'we cannot properly understand actions except by recovering the beliefs that animate them'. Ricoeur (1988, p. 221) describes language as 'the great institution, the institution of institutions, that has preceded each and every one of us'.

Just as Giddens (1984) describes a duality of agency and structure, a hermeneutic approach poses a mutually constructing duality of discourse and action. By invoking an institutional order it is reproduced (*ibid*., p. 331). Hajer (1993), for example, discusses the problem of acid rain in British government policy in the late twentieth century. He notes (p. 43):

> Whether or not a situation is perceived as a political problem depends on the narrative in which it is discussed. To be sure, large groups of dead trees as such are not a social construct; the point is how one makes sense of dead trees. […] Language is recognised as a medium, a system of signification through which actors not simply describe but create the world.

If particular 'discourse coalitions' using similar narratives are successful, Hajer argues, they will solidify into institutions. Discourse and action are inseparable. The interpretation of discourse affects which forms of action are validated and which are ruled out. Ricoeur (1988, p. 179) states that

> Reading appears by turns as an interruption in the course of action and as a new impetus to action. These two perspectives on reading result directly from its functions of confrontation and connection between the imaginary world of the text and the actual world of readers.

The world of the text 'necessarily collides with the real world in order to "remake" it, either by confirming it or by denying it', Ricoeur observes (2008). Similarly, MacIntyre (2007, p. 216) argues that 'I can only ask the question, "What am I to do?" if I can answer the prior question, "Of what story or stories do I find myself a part?"'.

The social world is interpreted through language crafted into narratives and stories, and the editing and reading of these stories inform action. As individuals and the institutions of which they are a part become committed to action, they construct new layers of meanings and stories around the moves they have chosen to make. March and Olsen (1989, p. 40) note that '[i]ndividuals organise arguments and information to create and sustain a belief in the wisdom of the action chosen, thus in the enthusiasm required to implement it'. These discourses proceed to fashion the world in which they operate (p. 47).

Action in an institutional environment takes place through inscription (de Certeau, 1984; Czarniawska, 2004). Memos are written, emails sent, notes taken,

reports drafted and commented on, policies drawn up and approved, meetings minuted, press releases issued, Facebook statuses updated and tweets sent. All this activity is part of the hermeneutic circle of interpretation and reinterpretation, often in the form of minute textual adjustments.

4.2 Mutable meanings, shifting identities

4.2.1 Institutional stories

When examining the role of institutions in low carbon transitions, the links between meaning and action, between intention and achievement, take on heightened importance. Research must therefore consider how institutions and the actors within them frame, narrate and advance differing concepts of the future in order to enrol and mobilise internal and external stakeholders (Alvesson, 2002; Czarniawska, 2004; van Dijk, 2011). Understanding the generation of meaning and the sensemaking that takes place within organisations becomes integral to any analysis of their actions and strategies (Weick, Sutcliffe & Obstfeld, 2005). A conflict of meanings can lead to 'dilemmas' (Bevir & Rhodes, 2005; Gibbs & Krueger, 2012, p. 370) that force actors to re-examine their beliefs and practices.

Organisations exhibit a corporate quest for sensemaking through narratives of their past, present and future (Weick, Sutcliffe & Obstfeld, 2005; Fiss & Zajac, 2006) and at the same time individuals within organisations tell stories of their own roles and of the organisation they work for (Boje, 1991, 2008; Gabriel, 2000). Narrative can be seen as an overarching framework that generates coherence and logic, and as the meaning-making emanating from multiple competing versions of events (MacIntyre, 2007; Creswell, 2013). Narrative can describe how individuals and organisations 'story' themselves (Ricoeur, 1991; Alvesson and Sköldberg, 2009).

In the context of climate change, such sensemaking takes on additional urgency, and becomes more hotly contested. Swyngedouw, for example, takes issue with metanarratives of apocalyptic climate change that are deployed, in

his view, to bolster the capitalist economic and political order (Swyngedouw, 2010, 2013). Gunderson (2014) draws on Habermas, and more recently Brulle (1993), to argue for a new environmental metanarrative based on the democratisation of environmental discourse. Stern (H.M. Treasury, 2006), by contrast, constructs a narrative of climate change as 'the greatest and widest-ranging market failure ever seen'. Raco (2005) points out the 'hybridity of approaches and rationalities' at play in discourses of sustainable development, while Bulkeley (2014, p. 958) describes how different coalitions of interests seek to 'constitute storylines that link the science, economies, values, and politics of climate change into coherent narratives through which the problem comes to be understood and acted upon'.

Such stories are not simply officially sanctioned versions of events or public relations messages. Indeed Boje suggests (2008, p. 7) that within organisations there is a perpetual tension between 'narrative order and story disorder' - the official versions of events, and the multifarious stories recounted within different parts of the organisation that moderate and modify approved accounts. In Boje's view, the creation of meaning is not fixed or linear but emergent and subject to unexpected alterations. This echoes postmodern approaches to literary theory (Barthes, 1978) that demolish notions of authorial intent and instead highlight fissures and discontinuities in the supposed unity of the text. Ricoeur, by contrast, stresses the primacy of concordance over discordance, and a quest for coherent meanings from messy circumstances (Ricoeur, 1988).

4.2.2 Interpreting the future

While traditional hermeneutics - for example, in theology or literature - focuses on the interpretation of canonical texts, Ricoeur's approach is to unlock the possibilities that the text permits, and through that offer a critique of the present. He writes (1973, pp. 175-6):

> [W]hat is sought is no longer an intention hidden behind the text, but a world unfolded in front of it. The power of the text to open a dimension of reality implies in principle a recourse against any given reality and thereby a possibility of a critique of the real. […] [T]he mode of being of

> the world opened up by the text is the mode of the possible, or better, of the power-to-be: therein resides the subversive force of the imaginary.

Interpretation, then, has the potential to be not only action-oriented but future-focused. Narratives are crafted that offer different versions of the future for consideration and adoption and in doing so reinterpret and change the course of the present. An attention to their development and diffusion helps to explain how possible futures might arise and gain legitimacy. Similarly, a focus on sequences rather than causes is central to the multi-level perspective on low carbon transitions, which is described as a process theory rather than a variance theory: the focus is on concatenations of events and conditions for action rather than on attempting to isolate causes (Grin et al., 2010).

Smith, Voß and Grin (2010) commend the multi-level perspective because it 'provides a language for organising a diverse array of considerations into narrative accounts of transitions'. Grin et al. (2010) note the importance of 'narrative explanations' of transitions, describing not only the sequences of events but highlighting interpretations of how and why events happen as they do. The process theory approach, which shares many characteristics of narrative analysis, 'requires the tracing of events, twists and turns' and looks for versatility in explanations rather than universally applicable laws.

While process theories typically examine what has happened, they also draw attention to what might happen, without attempting to establish predictive laws. Sparrowe (2005) states that '[b]y representing the future in the present, narrative can portray what is a contingent choice today in the form of a consequence one must live with tomorrow'. Projecting the story into the future enables options to be weighed up and choices to be made. Boyce (1996, p. 14) describes human life as a choice between a set of possible stories:

> The narrative paradigm views story as a fundamental form in which people express values and reasons, and subsequently make decisions about action. It focuses on the message of a story and evaluates the reliability, trustworthiness, and desirability of the message.

Future-oriented hermeneutics are thus concerned not only with interpreting text and context, but with weighing up and selecting goals and purposes, or following a 'narrative quest' (Czarniawska, 2004; MacIntyre, 2007). Bevir and Rhodes (2005) describe the conjectures of political science as 'provisional

narratives about possible futures'. Scenarios can be constructed to enable actors to weigh up alternative stories of the future, becoming 'authors' of different possibilities (Frittaion, Duinker, & Grant, 2010); they can also be used more instrumentally to enrol actors into particular scripts. Throgmorton (2003) describes planning as 'persuasive storytelling'. As Goldstein, Wessells, Lejano and Butler (2015) put it: 'Change the story and you change the city.'

The notion of low carbon transitions is loaded with narratives that have the potential to mobilise support for particular courses of action. Smith and colleagues (2005) construct an evolutionary romance (in the literary sense) in which a change of sociotechnical regime is the result of a quest for an optimal configuration. For Grin et al. (2010) one of the primary building blocks for transition management is the formulation and proclamation of a vision for change. The vision is fundamental to the quest: 'the transition process is … a goal-seeking process, where the transition visions and images, as well as the underlying goals, change over time' (p. 159). The 'cycle of transition management' takes a narrative or processual form, involving structuring or describing the problem, developing an agenda and outlining 'transition paths', experimenting and mobilising networks, and monitoring, learning lessons and re-articulating the vision. The sequence is not only chronological but also explanatory and mobilising; it seeks to bring a narrative of the future into being.

4.2.3 Interpretation and contestation

A future-oriented hermeneutic opens up possibilities of purposive change. The act of reading becomes an act of re-reading and rewriting. Eagleton (2008), quoting Gadamer, argues that understanding is always a case of '"understanding otherwise", realising new potential in the text, making a difference to it' (pp. 61-2). Eagleton's position echoes De Certeau's notion of reading as poaching, trespassing on territory marked out by others. Reading, De Certeau states, 'frees itself from the soil that determined it' (1984, p. 176).

In social science, Czarniawska (2004, p. 9) argues, 'a researcher has a right, but also a professional duty, to do a "novel reading" […] an interpretation by a

person who is not socialised into the same system of meaning as the narrator but is familiar enough with it to recognise it as such'. Novel readings are not only done by social researchers. They form part of the toolkit of everyday praxis. Ricoeur's elaboration of Aristotle's notion of emplotment explains how narrative is employed in everyday life as a sensemaking tool: a 'reader' not only makes sense of the text before them, but reconfigures the text and, by extension, their own life through the process of reading. The reading of a text (or of a situation) positions the subjective reader as the central character, or hero, of the plot in which they find themselves.

Wood (1991, p. 5) states that for Ricoeur, narrative does not resolve aporias, but makes them productive – 'which suggests that a formal or logical solution to our problems […] may not be required, even if it were possible'. By opening up new possibilities, the narrative interpretation of events enables changes to take place, but does not seek to predict what those changes might entail or how they might come about. The text confronts the reader, and the reader responds through an act of reconfiguration. This is comparable to what Argyris and Schön (1978) call double-loop learning, a shift from processes of continuous improvement to a more fundamental questioning of values and assumptions.

Paschen and Ison (2014) argue that participatory approaches to the generation of narratives can assist the process of adapting to climate change. A community in a town prone to flooding, for example, constructs and passes on stories of how it copes with disaster and deals with risk, and builds its understanding of future needs on these narrative foundations.

Interpretation can also be a process of challenging and contesting dominant storylines, articulating alternative priorities and futures through 'hermeneutic troublemaking' (Caputo, 1986). By creating space for diverging stories of identity, different types of explanation and varying visions of the future, narrative becomes a means of contesting both how things are and how they might be. Polletta (1998, p. 419) declares that 'insurgents have always known that stories of exodus and redemption, of chosen people and returning prophets, are powerfully motivating of collective action'.

Counter-narrative performs an important role not only in challenging dominant constructions of reality but in holding elites and authorities to account. Different 'frames' or worldviews are expressed through narrative accounts (Goffman, 1974; Polletta, 1998; Fiss & Zajac, 2006; Crawford, 2015). Hajer's study of acid rain (1993) shows how discourses of contestation may be reframed to legitimise changes in public policy. He notes the construction by the House of Commons environment select committee in 1984 of acid rain as a threat to historic buildings and to broadleaf woodland in the UK. Actions held to be against British economic interests when the main beneficiaries appeared to be other European countries became legitimised when reframed as the protection of British heritage. As Rein and Schön express it, 'problem-setting stories, frequently based on generative metaphors, link causal accounts of policy problems to particular proposals for action and facilitate the normative leap from "is" to "ought"' (Rein & Schön, 1993).

4.3 Applying Ricoeur's hermeneutics in this study

Ricoeur's hermeneutic cycle is an elegant formula that masks a maze of complexity. Scholars have sought to get to grips with it in different ways and the application of hermeneutics beyond the realms of the literary - an application prefigured in Ricoeur's own analysis - is considered problematic by some. Hayden White, for example (1980) insists on a cleavage between life and narrative: even if we give life meaning by telling stories, we do not actually live stories. For Ricoeur, however, narrative and life are intertwined. As MacIntyre (2007, p. 197) puts it: 'Stories are lived before they are told - except in the case of fiction'.

To avoid misunderstanding, my use of Ricoeur's formula should be seen as a modified application of his approach in order to address a set of conditions that have important parallels but are not the same as Ricoeur's objects of inquiry. I am not simply transplanting his theory into my study. In a Ricoeurian spirit I intend to re-read his hermeneutics in order to address a new challenge.

Ricoeur's philosophical leitmotif is a concern with the interplay of experience and expectations, which he describes as 'the aporia of temporality'

(1988, p. 14). His output, ranging from the 1950s until shortly before his death in 2005, is encyclopaedic and I will not attempt an overview here. Rather, I will focus on his hermeneutic cycle in order to contextualise my modification of his approach.

Ricoeur's fullest elaboration of his hermeneutics is set out in *Time and Narrative* (1988), a three-volume consideration of history, philosophy and literature founded on a phenomenology of reading, the intersection of the world of the text and the world of the reader (*Time and Narrative vol. III*, chapter 7). His interpretive philosophy extends beyond literary analysis. Ricoeur's concern is the continuous relationship between text and action, expectation and experience, in the context of temporality. The social is ever-present in the intersubjective construction of narratives that bring sense to individual and collective experiences.

Central to Ricoeur's analysis of this dialogue between expectation and experience is the notion of *mimesis*, borrowed from Aristotle's *Poetics* (McLeish, 1998). Mimesis is more than the representation or copying of life in narrative: it extends to its re-presentation as sensemaking. Ricoeur sets out three stages of mimesis, a cycle translated in English as 'prefiguration', 'configuration', and 'refiguration'. Vanhoozer (1991) relates this back to Heidegger's notion of *Dasein*, being-in-the-world, stressing that Ricoeur's philosophy is at root a philosophy of life's possibilities. Vanhoozer describes the first stage, or Mimesis 1, as corresponding to Heidegger's concept of pre-understanding, the world as it presents itself in the actions of the present; the second, Mimesis 2, as the projection of possibilities; and the third, Mimesis 3, as 'the appropriation of these possibilities "understandingly"'. Vanhoozer continues (p. 51):

> The world of the text is a way of being-in-the-world which fictionally works out various possibilities projected in a fictional situation. Stories, then, far from being unreal and illusory are actually the means of an ontological exploration of our relationship to beings and to Being.

It is through this sense of stories (texts, accounts, narratives, and - by extension - institutions themselves) as generating possibilities of being in the world that I wish to operationalise Ricoeur's mimetic theory in this study. In doing so I recognise that I am using a particular section of his philosophical map, while acknowledging that it forms part of a larger atlas that must remain

unexplored. However, it is a core aspect of Ricoeur's thinking and one echoed in the interpretive institutionalism of Bevir and Rhodes (2005) and Hay (2011), which focuses on the capacity of interpretation to generate and influence action.

Dowling (2011) describes Ricoeur's mimesis as an 'arc of operation', a continuous process involving three elements. At the heart of mimesis is *mythos*, Aristotle's concept of narrative emplotment. Its movement is forward or teleological: the discordant concordance of the plot drives towards 'an anticipated conclusion'. Its function is not merely to make sense of a given situation or problem, but rather to address the intersection of lived time - the situations in which actors may find themselves - and cosmic time, the unfolding story of human experience. Emplotment, for Dowling, like the Copernican revolution, allows a shift in the way of seeing reality. Goldthorpe (1991) similarly stresses the pivotal role of emplotment in the mimetic process. She describes it as operating in three ways (p. 86):

> It mediates between individual events and the story taken as a whole; it integrates heterogeneous elements such as agents, ends, means, interactions and circumstances; and it mediates by both reflecting and resolving, in its own temporal structures, the paradox of temporality.

Gyllenhammer (1998) emphasises that action is not only the end point of the hermeneutic cycle, but the beginning - the everyday practice that precedes the configuration of life by narrative. Narration 'creates out of the present an intelligible present by connecting it to its past and establishing a direction to be followed into the future' (p. 578). Gyllenhammer's insight is that the three mimetic elements coexist in constant dialogue and tension. While they can be viewed as beginnings, middles and ends, they are simultaneously all different forms of middle-state. The 'arc of operation' is constantly renewed.

The intersection between lived time and cosmic time comes to the fore in the problem of climate change. Humans whose 'horizons of expectation' (Ricoeur, 1988) become fuzzy beyond (and even within) their own lifetimes are confronted both with the consequences of their own pasts and presents, and the likely consequences for future generations. 'Wicked problems' are hydra-headed, always reappearing with a new face (Rittel & Webber, 1973). But there is both the possibility and the requirement for new forms of sensemaking, interpretations that enable life to be lived differently.

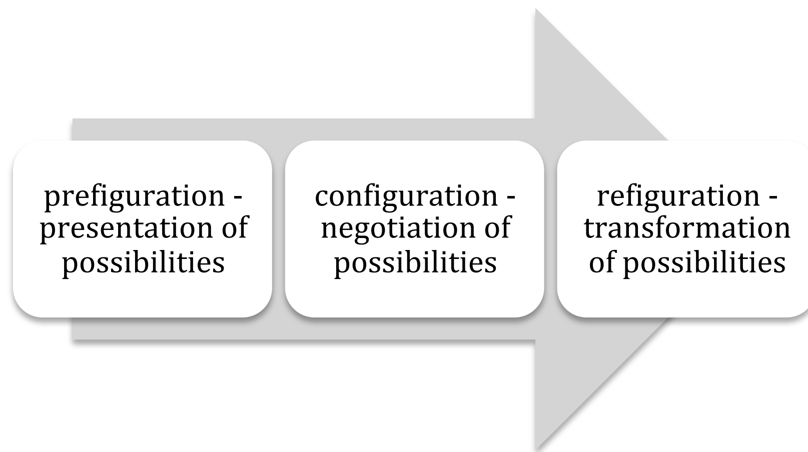
Ricoeur himself underlines the centrality of Mimesis 2, the process of configuration. He comments (1991, p. 26):

> My thesis here is that the process of composition, of configuration, is not completed in the text but in the reader and, under this condition, makes possible the reconfiguration of life by narrative. I should say, more precisely: the sense or the significance of a narrative stems from the intersection of the world of the text and the world of the reader. The act of reading thus becomes the critical moment of the entire analysis. On it rests the narrative's capacity to transfigure the experience of the reader. […] To speak of a world of the text is to stress the feature belonging to every literary work of opening before it a horizon of possible experience, a world in which it would be possible to live. A text is not something closed in upon itself, it is the projection of a new universe distinct from that in which we live.

The possibility of newness, as well as the threat of conclusions, is central to considerations of climate change and environmental action. Ricoeur's hermeneutics help us to understand change not simply as a crisis or punctuated equilibrium (Krasner et al., 1984) resulting in a switch from one mode to another, nor as the reassembling of collectives of actants (Latour, 2005) but as a continuous cycle of challenge and response. The 'fiction' of the text has the power to critique, to 'redescribe reality' (Ricoeur, 2008). It provides the channel through which change can be both imagined and implemented.

My adaptation of Ricoeur's cycle echoes, but does not directly follow, the three stages of mimesis (presented diagramatically in Figure 4.1). It highlights the interconnection of the three stages, viewing them as a creative resource through which one can better understand the interplay of logics and interpretations in sociotechnical transitions. I hope by using this lens to clarify the processes through which transition is articulated, resisted, and re-presented as a possibility.

FIGURE 4.1. RICOEUR'S MIMETIC PROCESS, ADAPTED



Source: Adapted from Ricoeur (1988) and Vanhoozer (1991)

I begin with the world of the text rather than the 'pre-understanding' of daily action. My focus here is on vision. In this analysis the prefigurative stage is expressed in the initial articulation of visions of the future, the possibilities of a low carbon economy and society. I combine elements of both mimesis 1 and mimesis 2 from Ricoeur's elaboration. 'Vision' - a staple of transition management (Smith et al., 2005; Scrase & Smith, 2009) - refers to the articulation and hope of transition that sets the scene for my inquiry, the point *in medias res* from which I begin. It is the foreseen future expressed in institutional documents, plans and programmes, and in the hopes of actors. It is the expression of an intended destination, but it also contains the sense of a taken-for-granted trajectory, a low carbon future that does not problematise the function of the institution or the role of the actors within it. Stage 1 is the presentation of the possible.

If the parallel of prefiguration is vision, the collateral of configuration is occlusion. Occlusion is the disturbance worked by and within the institution as its core logics are reasserted in practical and political decisions. Configuration in my study relates to discordance, and the attempt to retrieve concordance from discordance. This is the world of the reader, problematised by the world of the text - Mimesis 2 in Ricoeur's formula. Here the institution-as-text - the institution inscribed in rules, norms and logics - brings the discordance of

environmental action to light. Actors must make sense of the dissonance that results, emplotting their roles and telling appropriate stories. The future is no longer taken for granted but contested and modified through actors' narratives and accounts. Stage 2, then, is the negotiation of the possible.

The third phase shifts back from text to action. Stage 3 is the transformation of the possible. The visual parallel is insight, a new understanding of a way forward. As an adaptation of Ricoeur's refiguration or Mimesis 3, it involves the generation of new imaginaries or ways of acting. It refers to the stage at which the actor (and potentially, the institution) finds a resolution, albeit provisional, to discordance and takes a renewed vision into the world. Such new imaginaries can take the form of reworked ambitions or of critiques that challenge and move the institution towards new ways of thinking.

In the prefigurative stage the awareness of the impacts of institutional logics (Friedland & Alford, 1991; Thornton et al., 2012) is low. It is assumed change can be achieved without fundamentally disturbing the institutional order. In the configurative stage awareness of institutional logics is high. The tension between an institution's core logics and the logic of transition is heightened. In the refigurative stage, there is an accommodation - if temporary - between divergent logics in order to move forward with action. In that accommodation the core institutional logic becomes open to modification and reinterpretation, reflecting insights from the literature on institutional work (Reay & Hinings, 2009; Smets et al., 2015).

In the next chapter I move from theory towards the field of inquiry, outlining my research methods, detailing the questions that frame my inquiry, and introducing the organisations on which the inquiry will focus.

Chapter 5: Situating the inquiry: research design and methods

5.1 The research moment

I opened this thesis with a reflection on the present moment as one of crisis. Crisis, in Ricoeur's terms, involves not only a sense of the immediate but an awareness of time stretching backwards and forwards. A research project focusing on the future must not only investigate the dilemmas of the moment, but maintain a constant awareness of its own situation in that moment, bracketed by the unresearched expanses before and beyond.

There is an obvious paradox in seeking to investigate change in the relatively short span of a doctoral research study. There is a temptation to focus on actions and achievements: what policies have been adopted, what buildings have been constructed or demolished, how much carbon has been saved? These elements matter, as the actor-network theorists remind us: the material and the social are interconstructed. But they shed little light on the future of the institutions that construct buildings and generate carbon. So I needed to approach my research in a way that engaged more deeply with questions of time.

Fernand Braudel's notion of levels of time (1995 [1949]) - the *longue durée* of civilisations and epochs, the *moyenne durée* of centuries and social history, and the *courte durée* or micro-history of events - underpins the landscape, regime and niche levels of the multi-level perspective on transitions (Raven et al., 2012). It also informs Ricoeur's view of history and interpretation in which understanding is achieved through a constant dialectic between past and future, experience and expectation, 'animated by a will for encounter as much as by a will for explanation' (Ricoeur, 1965, p. 29). Clemente, Durand and Roulet (2017) show how a similar historical understanding can be applied to the development of institutional logics.

Giddens (1984, p. 362) describes his structuration theory, which has influenced transition theorists and institutional scholars, as an elaboration of Braudel's 'dialogue between structure and conjuncture'. By stepping back from organisations' immediate quest for 'good enough' responses to climate change I hope to highlight the historical interplay between structure and agency, between actors and institutions, that can shape not only the immediate future but ultimately the *longue durée.*

Investigating possible futures is fraught with the obvious difficulty that they are only possibilities (Blass, 2003). But future projections are 'real in their consequences' (Mische, 2009) even if the consequences are unintended. So from a sociological standpoint 'we can focus attention on the cultural, institutional, and relational grounding of future projections' (*ibid*., p. 702). Researchers can pay attention to the way potential futures are incubated in the crises and dilemmas of the present (Bevir & Rhodes, 2005). Research in such context is both a process of 'trying to gain a better understanding of the complexities of human experience' (Marshall & Rossman, 1999) and a quest to discover 'how social experience is created and given meaning' (Denzin & Lincoln, 2013).

Chapters 2, 3 and 4 addressed the theoretical and methodological underpinnings of the overarching research question posed at the start of this thesis: **How are low carbon imaginaries constructed and reconstructed in urban institutions in the UK, and how do such interpretations enable or curtail possible futures?** In this chapter I begin by unpacking the second and third research questions outlined in Chapter 1: **How do actors' engagements with institutional logics affect the interpretation of low carbon futures?** And **how does actors' participation in epistemic communities shape the construction of low carbon futures?** I then sketch out the methods of study I have chosen. Next, I situate the research, explaining the process of case study selection, introducing each case study organisation and explaining their appropriateness. Finally, I describe and reflect on my experience of conducting the research.

5.2 Recursive logics and epistemic communities

5.2.1 Two linked questions

Research is seldom a smooth linear path from theory to method, to fieldwork, to analysis and thence to conclusions. It 'is often confusing, messy, intensely frustrating, and fundamentally nonlinear' (Marshall & Rossman, 1999); it is concerned with 'the conflictual outpourings, the complex backgrounds of human concern' (Stake, 1995). It is frequently iterative, moving back and forth between theory and findings.

In my case this involved developing three questions. The central question concerns the construction and reconstruction of low carbon imaginaries. The second concerns actors' engagements with institutional logics. The third seeks to avoid black-boxing institutions by examining the effects of knowledge communities beyond organisational boundaries. These questions were developed iteratively over the course of literature reviews and early fieldwork, and have been used to frame both my approach to exploring case studies and my analysis of the data collected.

While I have adopted a constructivist ontology and interpretive epistemology (Chapters 3 and 4), I have also used a process of retroduction more commonly associated with a critical realist perspective (Baert, 2003; Pawson & Tilley, 1997) - or what Flyvbjerg (2004, p. 284) describes as phronesis or 'practical judgement and common sense' - using my research data to help me reframe the questions I am asking and my approach to analysis.

The second of the three research questions seeks to get under the skin of actors' engagements with institutional logics when there is an institutional commitment to change. It concerns what I have termed 'boomerang logics' - a shorthand for the suggestion that institutional logics are embedded and recursive, and resistant to actors' efforts to reinterpret or re-inscribe institutions (Bevir & Rhodes, 2005; Zilber, 2009). I suggest that **actors' ability to bring about institutional change is limited by their acceptance of prevailing institutional logics**. The ambition for change, however, reveals the nature of the dynamics at work, providing knowledge that can inform future efforts.

The third question focuses on actors' participation in epistemic communities. Change in institutional logics, I suggest, is neither endogenous nor fully exogenous, but depends on a credible interchange between influential figures with comparable professional groundings both inside and outside the institution. Such peer groups legitimise forms of knowledge and persuade others of its validity (Haas, 1992).

5.2.2 Creative contradiction and multiple logics

The notion of boomerang logics arises from the tension between the constraining forces of path dependency (Krasner et al., 1984; John, 2003) and the disruptive push of contradiction. Seo and Creed (2002), discussing the notion of embedded agency, suggest that it is the dialectic of institutional contradictions that leads to change. This builds on Friedland and Alford's view (1991) of society as a 'contradictory interinstitutional system'. This offers individuals scope for agency in choosing between multiple logics (Thornton et al., 2012, p. 83).

Building on these scholars' work, I suggest that the institutions covered in this research, both at field and organisational level, are governed by overarching logics that direct what is regarded as appropriate and desirable. These overarching logics, in practice, compete with exogenous or insurgent logics (Leblebici et al., 1991; Suddaby & Greenwood, 2005) that challenge embedded notions of purpose and direction. This in turn affects locally situated logics of appropriateness (March & Olsen, 1989). A university, for example, has an overarching logic of teaching and learning, often embedded over centuries. That logic could be expressed as one of public service, or a civic order of worth, in Boltanski and Thévenot's parlance (2006). It may be challenged by a focus on employability, which emphasises the preparation of students for competition in economic markets. The logic of the market seeks to divert the logic of learning to new ends. It may also be challenged by an environmental logic that seeks to harness the logic of learning to goals of sustainability.

An interpretive focus can help us untangle what may be going on in these complex fields, examining how actors construct ideas of the future and analysing their discourse for evidence of underlying logics, expressed through

their reading of institutional contexts and their efforts to revise institutional understandings of the world. This complements the emphasis on disruption and contradiction within the multi-level perspective on transitions, where regimes are destabilised through a combination of innovation in protected niches and shifts at a landscape level (Geels, 2004; 2010; 2014). An institutional account of a low carbon future may be challenged and rewritten through the 'reading' of practitioners.

5.2.3 Implications for transitions

The theoretical perspectives used in this study recognise the duality of structure and agency. Change is possible, but constrained, and that constraint takes both a diachronic and a synchronic form, affecting future trajectories. The diachronic constraints might be expressed as path dependency; synchronic constraints might be observed as power relations (Giddens, 1984; Bourdieu & Wacquant, 1992) competing logics (Thornton et al., 2012), or conflicting interpretations (Boje, 1991; Czarniawska, 2004).

The notion of institutional logics covers both the diachronic and the synchronic. Particular logics are embedded within an institution and govern how that institution has historically conceptualised its mission and purpose, duties and responsibilities. Synchronically, they are expressed through legal documents that bind what the institution can and cannot do; management hierarchies that have been developed to pursue historic or policy goals; and organisational narratives and myths (Meyer & Rowan, 1991) enacted through everyday practice.

Such logics are not totalising: institutions are porous, permeable by new logics. An environmental logic, which highlights the value of the natural world and posits new organisational responsibilities as a result, might act as an insurgent, challenging existing orders of worth and seeking to bend embedded logics to new ends. Much of the literature on organisational change examines such conflicts (Friedland & Alford, 1991; Lawrence & Suddaby, 2006; Martí & Mair, 2009; Thornton et al., 2012). As Lawrence and Suddaby (2006, p. 248) put it, it is 'the intersection and contestation of multiple logics within nested fields

that provide actors the resources to engage in activities of contestation and reconceptualisation'.

But new logics start from a position of weakness and their establishment may be a stuttering process: hence the suggestion that actors' ability to bring about institutional change is limited by their acceptance of prevailing logics. It is suggested that any modified logic will be closer to the embedded logic than to the insurgent one - the boomerang will return, though to a subtly changed environment. If this is the case, one would expect the pursuit of 'sustainability' in the case study institutions to be more halting and contested than the institutions' own rhetoric would suggest. I develop this argument further in Chapter 9 (section 4) to propose a new model for understanding transition at an institutional scale, and in Chapter 10 I show how such a model could be operationalised in practice.

5.2.4 The role of epistemic communities

The concept of boomerang or recursive logics is concerned with the internal dynamics of an institution. But institutions exist within interinstitutional systems permeated by knowledge networks (Friedland & Alford, 1991). So my third question addresses **how actors' participation in epistemic communities can shape the construction of low carbon futures**.

This question is informed by the notion of 'proximity' in economic geography. Boschma (2005) describes five dimensions of proximity: cognitive, organisational, social, institutional and geographical. What is at issue for Boschma is the ease with which innovations, ideas, norms and cultures flow and coalesce in particular settings.

Coenen et al. (2012, p. 976), applying the idea of proximity to sustainability transitions, consider cities and regions as 'major nodes in wider networks of actors that may simultaneously develop their local resources and access and influence resources at different spatial scales'. Similarly, Raven et al. (2012, p. 69), in presenting a 'second generation, multi-scalar MLP' (multi-level perspective),

use the notion of proximity to spatialise the concept of transition. Echoing Boschma, they outline the features of different forms of proximity:

> Cognitive proximity refers to the shared knowledge base between actors. Organisational proximity refers to a similar organisational background of actors. Social proximity refers to levels of trust, friendship, kinship and experiences between actors. Finally, institutional proximity refers to the extent at which actors have similar broader cultural backgrounds such as societal norms and values.

But to understand what is happening *institutionally* in a place, research must focus on how understandings and norms are channelled. Geographical proximity may be a destination rather than a launchpad. The concept of epistemic communities (Haas, 1992) helps to illuminate these cognitive, organisational and institutional proximities. Haas describes epistemic communities as 'networks of knowledge-based experts' who help to frame policy environments by 'articulating the cause-and-effect relationships of complex problems' (p. 2). Through such communities the 'codified knowledge' of academia or professional learning diffuses into the 'personal knowledge' or 'tacit knowledge' of practice (Eraut, 2000).

Haas explains what distinguishes epistemic communities from other networks, groupings or coalitions in Table 5.1, below. For Haas, epistemic communities are characterised by shared causal beliefs - understandings of why things happen - and shared principled beliefs, or values. These principled beliefs may be compared with Boltanski and Thévenot's concept (2006) of orders of worth: members of an epistemic community inhabit a shared world. Epistemic communities are also characterised by a consensus over knowledge, and shared interests or goals. They have a common project, based on a common understanding of the issue they are addressing and what, in broad terms, should be done.

TABLE 5.1. DISTINGUISHING EPISTEMIC COMMUNITIES FROM OTHER GROUPS

Principled beliefs \ Causal beliefs	Shared	Unshared
Shared	Epistemic communities	Interest groups and social movements
Unshared	Disciplines and professions	Legislators, bureaucratic agencies, and bureaucratic coalitions

Interests \ Knowledge base	Consensual	Disputed or absent
Shared	Epistemic communities	Interest groups, social movements, and bureaucratic coalitions
Unshared	Disciplines and professions	Legislators and bureaucratic agencies

Source: Haas (1992), p. 18.

While this thesis is not a study of networks, there are parallels with the concept of 'policy networks' (Rhodes, 1997) that enable change by introducing and validating new knowledge within institutions, but which can also combine to conceal information and prevent change (Duit & Galaz, 2008). Practices may also be changed through an intersubjective process of 'reframing' problems (Rein & Schön, 1996).

Epistemic communities are fluid and permeable, by people as well as by ideas. Smets et al. (2012, p. 896) describe how this can extend to individual organisations through 'cosmopolitanism' - the deliberate recruitment of staff with divergent ideas or different approaches to practice. A similar process has been observed by Coule and Patmore (2013, p. 993) in their study of innovation in non-profit organisations: by incorporating the knowledge of 'outsiders', actors could disrupt and delegitimise 'taken-for-granted patterns of organising'.

If the academic insights into epistemic communities and policy networks are accurate, researchers may be more likely to find clues about the operation of transition processes through attention to cognitive, organisational and institutional proximities than through a focus on geographical location. Where transitions are enacted will influence how they are enacted through each location's unique clustering of institutions, resources and politics. But by examining epistemic networks a researcher may be more likely to discover how different accounts of low carbon futures arise, and why proposed transitions have been formulated and advanced in particular ways. My own suggestion, which I will interrogate through my research findings, is that transitions cannot happen without such epistemic communities.

5.2.5 Exploring the questions

To explore the research questions further, it is important to establish a sense of the dynamics and scale of the changes occurring within the case study institutions as a consequence of their positioning as leaders on environmental sustainability. This is not simply a question of whether or not they are meeting specific carbon reduction targets. I am concerned here with the changed understandings of each institution's purposes and objectives: both whether this happens, as evidenced by shifts in the logics relied on by institutional actors, and how it happens, as evidenced by the epistemic communities referenced by actors.

If core institutional logics are recursive, a researcher might expect to find that visions of change are adapted and reinterpreted conservatively, in practice if not in public positioning. And if supportive epistemic communities are a necessary condition for transition, a researcher might expect actors to reference the role of knowledge networks and peer learning in shaping their understandings. If this is the case, then the third phase of the hermeneutic cycle outlined in Chapter 4 (section 3) might come into play: the prefiguration of vision and configuration through conflict with embedded logics could be followed by a move towards refiguration - a new phase of action and understanding - driven, at least in part, by exogenous knowledge networks.

5.3 Methods of inquiry

Having contextualised my research questions in previous chapters, this section introduces my methods of inquiry. I explain why I have chosen a case study approach, and discuss my use of documentary analysis, semi-structured interviews and focus group discussions. I conclude with some comments on ethical issues raised by my research.

The methods described here are typical tools of qualitative research, and were chosen as appropriate for a relatively short multi-case study, and as tools with which participants could be expected to be familiar. A more narrative approach - using career histories, for example (Emirbayer & Mische, 1998; Wiseman and Whiteford, 2007) - might have yielded richer insights into the beliefs and decisions of individuals, but at the possible expense of an understanding of dynamics at an institutional scale. Similarly, participant observation, as favoured by Zilber (2017), has the potential to offer deep insights into the intersubjective constructions of meanings, but unless embedded in an analysis of the wider context lacks the capacity to account for the institutionalisation of meanings.

5.3.1 Why case studies?

The question facing a researcher is how the chosen approach 'will complement and supplement current knowledge' (Marshall & Rossman, 1999). The aspects of a possible future that are open to scrutiny are plans and strategies, intentions and expressions: in a nutshell, discourse (Fairclough, 1992). The concept of transition is mediated through envisioning, goal-setting and the mobilisation of networks at a variety of scales (Smith et al., 2005; Loorbach, 2010; Grin et al., 2010; Boyd & Juhola, 2015). 'Stories told in plans' shape diverse rationalities of decision-making (van Dijk, 2011). And as Baert (2003) argues, through studying the social world it is possible 'to envisage alternative future scenarios'.

These characteristics of future-building leave the traditional research question of 'causation' hanging (Blass, 2003). One cannot state that a vision of

the future is causing that future to come into being because, however well-informed, it remains a projection. What a research project can explore is how such visioning forms and informs the quest for a low carbon future. Such research demands the flexibility 'to account for new and unexpected empirical materials' and an openness to competing interpretations (Denzin & Lincoln, 2013). It seeks patterns, themes and possibilities rather than causal mechanisms (Stake, 1995; Marshall & Rossman, 1999).

Such patterns, themes and possibilities are to be found in situated knowledge and practices (Haraway, 1988; Barley & Tolbert, 1997). The question then is to identify the appropriate scale of inquiry, given the time and resources available. A trade-off must be made between breadth and depth (George & Bennett, 2005). With small numbers of examples, the researcher's task is to provide depth rather than breadth. Case studies can provide such 'concrete, context-dependent knowledge' (Flyvbjerg, 2006). Such data might be used to falsify a particular theory (*ibid*., p. 231), to explore an under-researched phenomenon (Stake, 1995) or, from a more positivist standpoint, to identify causal connections (Yin, 2009). My focus is on the second of these applications.

Rowley (2002) notes that case studies are context-rich and permeated by external factors, and the prospects for building theory from a small number of cases are limited. Researchers must heed the warnings, too, of reliance on 'fuzzy concepts' generalised from particular case studies or applied without rigour (Markusen, 1999) - although as Peck (2003) has countered, it can be a 'fuzzy old world'. For Stake (1995), the process of 'looking at the world', in all its context (and one might add, fuzziness), is at the heart of a successful case study. The real business of a case study 'is particularisation, not generalisation' (p. 8); it involves 'searching for happenings' rather than seeking out causes (p. 37). Close observation and the gathering of extensive data are at the centre of this approach, rather than a logic of theory formulation and testing.

A salient question, then, is how a limited number of organisations that have promoted environmental goals and visions locally and across their institutional fields might be used as an 'instrumental case study' (Stake, 1995) to illuminate the process of low carbon transitions. A strategically chosen case may prove 'paradigmatic' in providing examples of processes or principles that further

research may subsequently generalise or modify (Flyvbjerg, 2006, p. 223). It is a step on a path of discovery. A good case study can help to establish the paradigm, creating frames of reference that further research can test and develop.

By identifying and examining the interpretive cycle of prefiguration, configuration and refiguration (Ricoeur, 1988) within the selected cases, I hope to show how institutions position themselves and seek to resolve conflicting logics internally and externally; how institutional logics are challenged, reasserted and potentially modified; and how competing interpretations inform institutions' work on low carbon transitions. Such data can produce fruitful lines of inquiry for future studies.

5.3.2 Approach to data collection

In approaching a research topic, a researcher needs to consider how their own understanding might be influenced by their background and culture (Stake, 1995; Harvey, 2011). I have inhabited a similar world to many of the individuals I interviewed, a culture of public sector (or quasi-public sector) professionals, many of whom are decision-makers or middle managers.

This creates both the advantage of a shared set of concepts and reference points but also disadvantages, not least the risk of failing to challenge or question taken-for-granted ways of thinking about the world and 'official' accounts (Cochrane, 1998; Mikecz, 2012). In posing questions about how low carbon transitions are constructed and understood, the issue of 'silences' remains pertinent: where are the gaps in the narratives and the unheard voices? (Chaffee, 2010).

Conversely, there is also a risk of being over-critical. An appropriate level of 'critical subjectivity' or self-examination is therefore important (Reason & Bradbury, 2008; Orlans, 2014). Each researcher brings their own baggage into the interview room. Mine consists of a background in journalism and a range of previously expressed opinions about public policy. In triangulating and analysing data I have been conscious of the need to acknowledge and minimise such influences (Haraway, 1998).

I have sought therefore to include a range of relevant voices and perspectives in my research, using three complementary methods: documentary analysis, qualitative interviews with a range of internal and external stakeholders, and focus group discussions. In doing so I hope to minimise any unintentional complicity between interviewer and interviewee, or between the researcher and the organisation being researched.

5.3.3 Documentary analysis

My starting point with each organisation was to examine documentary evidence of its position and plans for transition. In doing so I sought to highlight both how they conceptualised change and how they hoped to achieve it. The first involved analysing discourse; the second involved seeking to identify organisations' rationales for change, explicit or implicit.

Flyvbjerg (2004) is not alone in referencing Foucault's assertion that 'discourse is not life; regular, daily practice is life'. I regard the distinction as artificial. Fairclough (1992) argues that 'discourse constructs and is constructed through practice'; it is the means by which institutions and individuals assert what Bourdieu calls the 'power of naming' (Bourdieu, 1999), and discourses are themselves modified by and adjusted to actors' experiences. Discourse and practice are intertwined and mutually constitutive. Fairclough asserts (p. 4) that '[a]ny discursive "event" is seen as being simultaneously a piece of text, an instance of discursive practice, and an instance of social practice'. In contemporary culture this is more the case than ever. Institutions construct their identities and articulate their goals and missions through typography, YouTube videos, Facebook status updates and tweets, as well as through policies, mission statements and objectives (Auer, 2011); such discourses are both coordinative, aligning the roles and goals of policy actors, and communicative, conveying messages to the public (Schmidt, 2008).

Analysing discourse can help to show how 'coherence' is constructed, exposing the processes and power plays behind taken-for-granted routines and norms (Fairclough, 1992). In the context of low carbon transitions, such analysis can illuminate the ontologies, epistemologies and politics advanced by different

institutions and the internal meaning-making processes that lie behind them. Geels (2014, p. 27) views 'discursive strategies' as important aspects of organisations' resistance to low carbon transitions. Claims of truth and expertise are at the heart of climate change controversies (Lefsrud & Meyer, 2012). 'Discourse coalitions' bring about changes in institutional practices (Hajer, 1993).

Discourse analysis helps explain the durable stories of institutions, showing how 'institutional memory' is created and contested (Linde, 2001) and revealing 'silences' or what is not permitted to be said (Chaffee, 2010). Analysis of 'what is saliently unsaid, what could be said but is not' (Linde, 2001, p. 528) can help to reveal which discourses have become hegemonic (Fairclough, 1992).

Identifying rationales for change

Theories of change are the stock-in-trade of scholarly disciplines such as economics, politics and sociology. In their discussion of different forms of sociotechnical transition, Berkhout et al. (2003) distinguish between four categories: 'purposive transitions' caused deliberately by external actors; 'endogenous renewal' fostered as a matter of policy by regime members; 're-orientation of trajectories' arising spontaneously from a regime's internal dynamics and relationships; and 'emergent transformations', which are understood as unintended consequences of changes external to a regime. Each category is supported by a theory of how and why it works (see Chapter 2, Figure 2.2).

Theories of change (sometimes capitalised as Theories of Change) are also a particular method of planning and evaluating action (Weiss, 1995; Fulbright-Anderson, Auspos, & Anderson, 2001). A theory of change in this context aims to set out in advance what outcomes can be expected from particular interventions, and then tests these expectations as an initiative proceeds, checking experience against plans and milestones. In this research, I am seeking to identify not only how organisations expect change to happen but how they link intentions and actions. I refer to these conceptualisations as rationales for change. They encompass some of the planning elements of Weiss's theories of

change, in addition to conceptualisations of change, but without the sense that they are explicit tools for policy formation and evaluation.

When an organisation sets out on a process of environmental transition, one might expect a rationale for change to be at least implicit in the way it articulates its position and aspirations. So as well as identifying how change is conceptualised, I have used documentary analysis to attempt to identify the rationale for change in the cases I am investigating.

5.3.4 Semi-structured interviews

The interview is a fundamental building block of social research and its advantages and disadvantages have been well rehearsed (May, 2001). The semi-structured interview uses a framework of questions (which may be shared in advance with prospective interviewees) but does not confine itself to those questions; rather, the questions are a springboard from which issues can be explored in more detail. The framework provides a degree of consistency between interviews, but without restricting discussion to areas already considered by the researcher.

Much has been written about the power relationships between well-educated interviewers and interviewees who may be vulnerable or disadvantaged (Denzin & Lincoln, 2013). In the case of research involving institutions and those who represent or lead them, however, the risk is that power relationships may be reversed, the researcher becoming little more than a mouthpiece for those being interviewed (Cochrane, 1998). Elite interviewees can feel exposed and threatened by critical interviews, and have much to lose (Mickecz, 2012).

In such circumstances the triangulation of data through the use of multiple sources can help to prevent the research becoming skewed by elite interviewees' own agendas. While my research was constrained by gatekeepers' willingness to provide access to interviewees, and their views on who would be suitable interview subjects, I sought to counterbalance this through interviews with external stakeholders, all but one of whom I approached directly. The assurance of anonymity also helped to reassure interviewees that they would

not be disadvantaged by their frankness. I reflect on my experience of conducting research interviews for this study below (section 5.5) and the topic guide for my interviews is included as Appendix A.

5.3.5 Focus group discussions

Focus group discussions have become an established research method, adopted with enthusiasm by the marketing industry and political parties (Kidd & Parshall, 2000). My aim was to use focus group discussions as a triangulatory research method rather than as a primary source of data. In each location I brought together a small number of participants for a focused discussion on key themes emerging from previously conducted interviews. These discussions concentrated on the dynamics and limits of institutional change (the topic guide is attached as Appendix B). The discussions were all held in early December 2016.

Kidd and Parshall (2000) see focus groups as a means of eliciting 'evidence of ambivalence, inconsistency, conformance, or thinking out loud among informants'. However, a focus group is not a proxy for the fine grain of interaction in the workplace, where organisational cultures and countercultures are created and mediated (Gabriel, 2000). Participant observation methods may be more effective in highlighting the nuances and conflicts of day-to-day practice, but such an approach demands levels of access and volumes of time, both for observation and analysis (Alvesson & Sköldberg, 2009), that were not practical within the parameters of this project.

5.3.6 Ethical issues

In devising this research I considered potential benefits and risks, and in particular the provision of information to participants and the protection of confidentiality (Social Research Association 2003; World Conference on Research Integrity 2010).

To minimise possible reputational damage as a consequence of speaking to me, participants were given the opportunity to provide feedback and clarification on the content of their own interviews, as well as being assured of

their right to provide information confidentially. All direct quotations have been anonymised and interviewees referred to by generic roles (see Table 5.2). However, anonymising the names of the case study institutions would have meant removing all identifying material, including data of central importance to the research (only one English city, for example, had set up an energy retailing company with a specific objective of reducing fuel poverty at the time of the research). For that reason I agreed with each gatekeeper that the case study institutions would be named.

Participants were sent an information sheet and consent form in advance (Appendices C and D), while focus group participants were briefed in advance by email and at the beginning of each discussion. Permission was sought for all recording of interviews and focus group discussions. No children or vulnerable adults were involved in the study.

5.4 Selecting the case studies

If strategically chosen case studies can be paradigmatic, what kind of paradigm might the studies chosen for this research exemplify? My search was for case studies that show a goal of environmental transition, revealed in institutional literature and policy; a process of transition, revealed in actions and investments; and interpretations of transition, revealed in the articulations, understandings and compromises of practice within institutions.

The paradigm of transition matters because processes of environmental change, and the multiple potential political, economic, ecological and social crises associated with such changes, are set to frame academic and political discourses for decades to come (Urry, 2011; Steffen et al., 2015). Grin et al. (2010, pp. 99-100) argue that investigations of transitions 'require a research method that is rich in context and tracks complex developments over time'. Case studies enable researchers to move 'from a shapeless data spaghetti toward some kind of theoretical understanding that does not betray the richness, dynamism, and complexity of the data but is understandable and potentially useful to others' (Langley, 1999, p. 694).

5.4.1 Choosing the case studies

I have limited this inquiry to the UK for practical reasons of time, expense and access. My reasons for focusing on urban 'anchor institutions' are threefold (see Chapter 1). First, the early 21st century has seen an intellectual and policy focus on the economic, social and environmental functions of cities, in the context of rapid urbanisation worldwide (While & Whitehead, 2013; Alberti, 2016). Cities are not only the sites of economic activity and social contest (Isin & Turner, 2007; Storper & Scott, 2016) and home to the institutions required for effective governance (Bulkeley et al., 2010; Coenen et al., 2012); they are also prime sites of potential sociotechnical change because of the carbon generation associated with urban life and infrastructure (Rip & Kemp, 1998; Hodson & Marvin, 2013; Hodson, Marvin, & Bulkeley, 2013).

Second, in the context of the rise of neoliberalism and continuing economic austerity in the UK and Europe, there has been a shift away from state policy and funding as major levers of urban change. The 'differentiated polity' or hollowed-out state (Rhodes, 1997) works via networks of interests and coalitions, many of them embodied within urban locations (Hodson & Marvin, 2012). Government policies are not simply transferred wholesale from the centre, but are frequently pursued at arm's length and modified through the medium of unelected and/or locally based institutions (Rydin, 2010). The role of non-state and private sector organisations is becoming more prominent, sparking increased interest in the potential roles of institutions in urban planning, governance, and economic growth (Harkavy, 2009; Goddard & Vallance, 2011); and local government, like non-state institutions, has moved from a concern with organisational structures and processes of 'government' through elected members to a focus on regulation and negotiation with a range of interests (Jessop, 1995; Lowndes, 2001; Gibbs et al., 2002).

Third, such institutions' scale, economic impact and networks of influence suggest that the ways in which they conceptualise environmental transitions are likely to have wider influence on policy and practice: they are important nodes in urban 'social-ecological-technological systems' (Wolfram & Frantzeskaki, 2016).

Theories of transition suggest that articulations of the future, often expressed as visions or goals, should be in place as part of the transition process

(Smith et al., 2005; Grin et al., 2010). So I took the existence of an identifiable formulation of an environmentally sustainable or low carbon future as an initial criterion in deciding where to situate my research. Given the exploratory nature of my research I was concerned not to attempt to draw conclusions from a single case study. By choosing three cases in different locations I could draw commonalities and differences from different data sources; I also took care to triangulate my research through a range of data sources in each case (Stake, 1995, pp. 112-4; Flyvbjerg, 2006).

At the same time the research has to be manageable. To whittle down potential contenders to a sufficiently small group to examine within the confines of doctoral research, I used two further selection criteria. My second criterion was that the institutions concerned should have the potential to fulfil the 'anchoring' role described in the literature on anchor institutions, by virtue of their sectors, size and spatial impact. Additionally, they should be accessible from Sheffield, in order to make the fieldwork practicable in terms of time and cost. I ruled out research in Sheffield, where I have lived and worked for 15 years, as I did not want to be influenced by existing knowledge of the city and relationships with people whose work I might be researching.

Third, I looked for organisations that operated at an identifiable urban scale, in order to provide a basis for examining their wider network effects. As well as fulfilling the 'anchor' criteria of stability, scale and influence, they should have identifiable relationships with other institutions in their locality and beyond. In this thesis I pay particular attention to the role of epistemic communities as key nodes within the knowledge networks influencing transitions.

Using these criteria I identified 18 potential case studies in the north and midlands of England. This was done initially through a trawl of existing literature, including Hodson and Marvin's study (2013), *Low Carbon Nation?* I also searched for references in both academic and 'grey' literature to the use of the 'anchor institution' term, particularly with reference to environmental sustainability - although this yielded few results. Recommendations from my supervisory team and other colleagues at Sheffield Hallam University were also helpful, and potential case studies were discussed with them before settling on my final choices. Results of the initial trawl are set out in table 5.2 below.

TABLE 5.2. CASE STUDY SELECTION: FIRST ROUND

Type of institution	Location	Evidence of suitability
Housing	Sunderland (Gentoo)	Recommendation from SHU; organisational literature; professional journal (*Inside Housing*)
	Manchester (Adactus Housing)	Organisational literature
	Stockport (Stockport Homes)	Organisational literature
	Newcastle (Your Homes Newcastle)	Organisational literature; peer recognition (Sustainable Homes website)
	Nottingham (Nottingham City Homes)	Organisational literature; peer recognition (awards); member of low carbon partnerships
Local government	Nottingham City Council	Recommendation from SHU; organisational literature; peer recognition (awards); member of low carbon partnerships
	Oxford City Council	Organisational literature; peer recognition (Carbon Trust)
	Manchester City Council	Organisational literature; academic study (Hodson & Marvin, 2013); member of low carbon partnerships
	Sunderland City Council	Organisational literature; member of low carbon partnerships
Healthcare	Nottingham University Hospitals	Organisational literature; member of low carbon partnerships
	Sunderland City Hospitals	Organisational literature; member of low carbon partnerships
	Newcastle (Freeman Hospital)	Organisational literature; member of low carbon partnerships
	Wolverhampton (Royal Wolverhampton Hospital)	Organisational literature
Higher education	Manchester Metropolitan University	Organisational literature; member of low carbon partnerships; peer recognition (awards)
	University of Newcastle	Organisational literature; academic studies (Goddard & Vallance, 2013; Audley & Genus, 2015)
	University of Sunderland	Organisational literature; member of low carbon partnerships
	University of Nottingham	Organisational literature; member of low carbon partnerships
	Nottingham Trent University	Organisational literature; member of low carbon partnerships; peer recognition (awards)

My selection criteria followed a cascading list of questions, beginning with the three essential criteria outlined above:

- based on organisational literature, is there an identifiable narrative of a low carbon future?

- does the organisation have the potential to act as an 'anchor institution' as defined by Taylor & Luter (2013) and is it part of a wider institutional field (Thornton et al., 2012)?
- does the organisation operate at an urban scale in the UK, with relationships with other institutions in its locality and beyond? (This question seeks to identify the capacity to play a part in wider transition processes).

A list of secondary criteria was used to further fine-tune the selection:

- has the organisation already taken action in pursuit of its low carbon vision?
- is the organisation involved in low carbon networks or activities beyond its own boundaries?
- does the organisation present itself as having a civic role beyond its own institutional interests?
- does the organisation view itself as an anchor institution?

It was evident from my initial trawl that there appeared to be clusters of institutional activity in several locations, including Manchester, Newcastle-upon-Tyne, Sunderland and Nottingham. I decided to examine three of these locations, focusing on one organisation in each case as a window on wider transition processes. I ruled out organisations that had already been examined in academic literature (Manchester City Council and the University of Newcastle) in order to avoid duplicating previous research. I then made inquiries with Gentoo Housing in Sunderland; Manchester Metropolitan University; and Nottingham University Hospitals NHS Trust.

While initial inquiries with Nottingham University Hospitals NHS Trust met with a positive response, I was then allocated a 'gatekeeper' who failed to respond to repeated inquiries. Rather than start again I chose to look at Nottingham through the lens of a different organisation, the city council. Local government in the UK is both an arm of the state in terms of democratic representation and a locally accountable provider of services; it is the second

role that is of main interest in this study and is closest to notions of anchor institutions (Taylor & Luter, 2013). While local authorities are considered as anchor institutions in some of the UK literature (Devins et al., 2017) the categorisation blurs the boundaries between the state and 'anchors' as conceived in the United States. In Marshall and Rossman's terms (1999) this is part of the 'messy' character of research.

The chosen case studies met the first six selection criteria, but did not use the 'anchor' terminology to describe their civic function even though they play the role of anchor institutions. I introduce each organisation below, explaining its suitability for exploring the research questions. This section also provides an initial consideration of each organisation's institutional logics and position among wider knowledge networks; more detailed analysis follows in chapters 6-8.

The particular circumstances of Gentoo Housing should also be mentioned here. Between my initial inquiries and the beginning of my fieldwork, Gentoo entered a state of crisis, following the UK Government's decision to change the national rules on housing finance in Chancellor George Osborne's budget of July 2015 and the unconnected, but parallel, downscaling of feed-in tariffs for solar energy generation imposed in early 2016.

These decisions prompted a major restructuring in 2015/16, catalysed by the concerns of the housing regulator, the Homes and Communities Agency. As a result 330 jobs were lost and the group's environment team was eventually disbanded. I return to the effects of this crisis in presenting my data, but two points should be noted here: first, that staff at Gentoo were happy to keep assisting with my research despite the major difficulties they were facing; and second, that during this crisis Gentoo continued to present itself as an environmental leader.

5.4.2 Gentoo, Sunderland

The former shipbuilding city of Sunderland, with a population of 277,000, is on the edge of northeast England, a region described by Elcock (2014) as 'distant, different and dependent'. It is a peripheral location that has been

subject to repeated economic and governance interventions by central government. At the start of my research, the local authority area ranked 13th worst in terms of employment deprivation (Department for Communities and Local Government, 2015). Around 24 per cent of children live in poverty (Public Health England, 2016a).

Gentoo is a housing group that grew out of the former housing department of Sunderland City Council. In 2001 the council's 36,000 homes were transferred to the Sunderland Housing Group. At the time it was the largest transfer of council housing to a new landlord. In 2007 the group was rebranded as Gentoo, a name chosen, according to the sector magazine *Inside Housing*, to reflect its locational 'neutrality' and ambitions for expansion. The magazine's report (*Inside Housing*, 15 June 2007) continued:

> Gentoo is the name of a species of penguin. The group said the name was not chosen for that reason but fitted well because the Gentoo is fast and dynamic.

Since that time its ethos and style have been fashioned to be visibly distinct from its local authority parent. From the name to its penguin logo and distinct orange and black livery, to its insistence on referring to itself as a business and residents of its properties as customers, it has sought to take on the attributes of a young and successful private company. Table 5.3, below, summarises the key logics in play; these are discussed in more detail below.

TABLE 5.3. PREVAILING LOGICS: GENTOO

Prevailing and alternative logic(s)	**Key beliefs about desired ends**	**Associated practices**	**Illustrative evidence**
Prevailing logic: civic and social welfare	Focus on tenant welfare protects core housing assets and creates resilient communities	Provision of homes at affordable rents; investment in energy efficiency measures; financial advice for tenants	'We believe that by putting people first we can build great homes and create strong communities.' (Gentoo mission statement) '...we've given the HCA [Homes and Communities Agency] an undertaking that we will be the best social housing provider that we can by protecting our assets...' (Gentoo executive, quoted in Chapter 7, section 2.1)
Subsidiary or alternative logic: the market	Quest for competitive advantage in housing sector	Description of Gentoo as a company, residents as customers; focus on innovation	'Innovation is central to the future of Gentoo. With such rapid development of products and approaches in the Green agenda, we cannot wait for opportunities to come to us.' (Gentoo Group, 2013, p. 11)
Insurgent (environmental) logic	'One Planet Living', achieved through alignment of housing and environmental activities	Energy efficiency retrofits on 3,000 homes; 6,000 solar PV installations; Boiler on Prescription project	'If we only have one planet, what gives us the right to consume the resources of more than one?' (Gentoo Group, 2014, p. 4) 'This isn't just about helping the environment, this is about the added benefits; it's about warmer homes, healthier people, less CO2…' (Gentoo Group, 2013, p. 8)

Gentoo, which now has a stock of 29,000 homes, presents itself as a cross between an exciting start-up company and a values-driven NGO. Much of that presentation has emphasised the organisation's environmental values and vision, which I consider in detail in Chapter 6 (section 2). Its 'Gentoo Green' division was set up in 2007 to lead the organisation's work on environmental sustainability, and at the outset of my research Gentoo Green employed a team of 20, down from a peak of 26.

The group's environmental strategy declares (Gentoo Group, 2012a, p. 1):

> Gentoo is a 'People, Planet and Property business' and our goal is to improve the Art of Living beyond our imagination. This means we strive to make a positive difference to society and the environment through all we do. As a result, environmental considerations and sustainability are at the heart of our business.

The organisation's 'Planet Smart' policies are based on a philosophy of living within planetary resources known as One Planet Living (Dobson, 2007). Gentoo's 2012 annual report (Gentoo Group, 2012b) claims: 'The triple bottom line of People, Planet and Profit ensures that the reduction of carbon emissions, the maintenance of scarce energy resources and the driving down of human impact on the environment are at the very core of our business'.

As well as seeking to make its own operations carbon neutral, Gentoo has embarked on a series of measures to test the efficacy of environmental improvements to its housing stock and has advocated for action on environmental sustainability across the housing sector. It has retrofitted more than 3,000 homes with new boilers, double glazing and wall insulation; installed photovoltaic panels on 6,000 homes; and experimented with Passivhaus insulation systems on one new development. Its Boiler on Prescription research project established that providing energy-efficient boilers could save residents 14 per cent on fuel bills and reduce the need for doctors' appointments by 60 per cent among residents living in newly-improved homes (Burns & Coxon, 2016). The group has also invested in electric vehicles to reduce its transport-related carbon emissions, and sought to spread the message of environmental responsibility by supporting community food growing projects and working with local schools.

At one level, Gentoo's environmental vision and approach fits an emerging narrative across northeast England of a 'low carbon industrial phoenix' (Hodson & Marvin, 2013), with the region repositioning itself as a centre of technical expertise in order to generate investment and jobs. In Sunderland, much of this activity has centred on the Nissan car plant, which is manufacturing the Leaf electric car. Sunderland City Council strongly promoted the idea of a low carbon economy in its economic masterplan (Sunderland City Council, n.d. (a)) and hosts a city-wide partnership backed by major public and private sector institutions (Sunderland City Council, n.d.(b)). These include the University of Sunderland and Sunderland City Hospitals Trust. Much of this activity predates the imposition of austerity programmes on local government in England in 2010 and has since been scaled back.

Gentoo's core institutional logic is found first of all in its history and primary activity as a provider of affordable housing. Despite its place-neutral branding, its municipal history is physically embedded in the homes it inherited and the challenges the housing stock presents, particularly in terms of energy efficiency. Cold, poorly insulated volume-built homes are characteristic of the 'decades of under-investment' suffered by English municipal housing in the twentieth century (Pawson, 2006). A logic of social welfare is paramount, first in the initial provision of housing at sub-market rents, and subsequently in the need to ensure the health and wellbeing of their occupants. Gentoo's website (Gentoo Group, n.d.) summarises its mission:

> We believe that by putting people first we can build great homes and create strong communities.

In an earlier iteration (Gentoo Group, 2014), the group used the phrase 'art of living' to encapsulate its activities:

> Our ambitious vision is about improving what we call 'the Art of Living' by enabling our customers and communities to fulfil their potential by living the life they aspire to live.

These logics of welfare and domestic security are reflected in Gentoo's environmental priorities, which are to improve the energy efficiency of existing homes, and in a concern to improve residents' personal health and wellbeing and make their money stretch further. The Boiler on Prescription project specifically aims to link the upgrading of domestic properties with health outcomes. This welfare logic is comparable with the 'community logic' identified by Thornton et al. (2012) and the notion of the 'civic polity' advanced by Boltanski and Thévenot (2006).

Alongside this, Gentoo's presentation and communication embodies the language of the market, another of the core institutions identified across the institutional logics literature. Gentoo is consistently referred to as a company and its residents as customers. It measures its performance on outputs and profitability, like a commercial company, even though it is actually a non-profit organisation and has recently become a charitable community benefit society (Gentoo Group, 2016).

Gentoo's environmental messaging, particularly at the beginning of my research, tells a broader story. It is based strongly on the idea that nobody should use more than their fair share of the earth's resources. This is a narrative that employs community values, but also has a distinct ecological logic - the Earth is of value in itself, not just for its resource potential - and a moral framing. The former chief executive, Peter Walls, (Gentoo Group, 2014, p. 4) argued:

> The one-planet argument is the one I use with people who I'm trying to influence, because it's not as technically confusing as a lot of the other environmental arguments. If we only have one planet, what gives us the right to consume the resources of more than one? I think that's quite a good moral and ethical position to have.

In terms of wider relationships, Gentoo is physically embedded in the city of Sunderland and despite its rebranding is still closely associated with the local authority geographically. The 2014 Art of Living report mentions the city council only twice, although it describes it as a 'key stakeholder'. It stresses partnerships with government departments such as DECC (the former Department of Energy and Climate Change) and academia. The 'anchor institution' concept, however, does not appear in any of the literature reviewed.

5.4.3 Nottingham City Council

Nottingham is one of the smallest English 'core cities', with a population of 314,000. It falls within the most deprived fifth of local authority areas in England and one third of its children live in low income families (Public Health England, 2016b). Nottingham experienced one of the largest increases in multiple deprivation in England between 2010 and 2015 (Department for Communities and Local Government, 2015) moving from 25th to eighth nationwide, based on the proportion of neighbourhoods ranked in the poorest 10 per cent. Its economic base has shifted sharply over recent decades, from manufacturing to services, and the city 'has assumed the role of the regional centre of business services, health and education' (Rossiter, 2016).

Nottingham City Council was one of the earliest local authorities to adopt a strong position on environmental action, launching the Nottingham Declaration

on Climate Change in 2000. By its tenth anniversary the declaration had won support from 392 local authorities across England (*Nottingham Post*, 29 October 2010). The declaration was replaced in 2012 by the Climate Local initiative, administered by the Local Government Association and focusing on carbon reduction and climate resilience. Table 5.4 summarises the different logics observed at Nottingham City Council.

TABLE 5.4. PREVAILING LOGICS: NOTTINGHAM CITY COUNCIL

Prevailing and alternative logic(s)	Key beliefs about desired ends	Associated practices	Illustrative evidence
Prevailing logic: civic and social welfare	Overarching goal of poverty reduction, including addressing fuel poverty	4,000 homes retrofitted with insulation measures; establishment of Robin Hood Energy; improvements in public transport	Council Plan 2015-19 prioritises 'a city that is fair for everyone and where we all have an equal and positive chance to succeed' (Nottingham City Council, 2015)
Subsidiary or alternative logic: the market	Nottingham can be a centre for 'cleantech' businesses	Promotion of city as location for green businesses; commercial exploitation of heat network	City to be promoted as 'the first choice for sustainable energy related and green tech business, innovation and growth' (Nottingham City Council, 2010) 'We will reap the benefits as a city that has protected itself against rising energy prices and created jobs from a thriving, innovative green economy' (Nottingham City Council, 2011)
Insurgent (environmental) logic	'Britain's most energy self-sufficient city' - energy production and consumption as keys to environmental progress	Expansion of municipal heat network; programme of PV installations; promotion of electric vehicles including bus fleet; establishment of Robin Hood Energy	City council energy strategy 2010-2010 promises lower living costs, greater security of energy supply, improved wellbeing, resilience, and a vibrant local economy (Nottingham City Council, 2010). Achievement of 33% carbon emissions reduction on 2005 levels by 2016 (four years ahead of schedule)

Nottingham's environmental priorities have shifted over the last decade from a broad agenda of climate change mitigation and adaptation to a strong focus on energy production and consumption. This emphasis has intensified

since the beginning of the austerity programme of public funding cuts imposed by the Coalition government of 2010-2015. Much of this focus has revolved around Nottingham's municipally-owned district heat network, one of the oldest such networks in the UK and now the prime consumer of waste materials in the East Midlands, which are burned to produce steam which is pumped through a network of pipes to offices and homes around the city centre. The heat network burns 180,000 tonnes of waste that would otherwise go to landfill and offsets 27,000 tonnes of carbon dioxide annually (senior manager, Nottingham City Council, personal communication, 27 April 2016). Nottingham City Council's energy strategy for 2010-2020 sets out a vision of becoming the UK's 'most energy self-sufficient city' (Nottingham City Council, 2010).

Key areas of activity include the establishment of Robin Hood Energy, a not-for-profit energy retailer that aims to provide local residents with affordable gas and electricity; Enviroenergy, the arm's-length company responsible for the district heat network; a programme of home insulation, with 4,000 properties improved between 2011 and 2015, and installation of photovoltaic panels on council-owned homes; large-scale solar arrays on facilities such as leisure centres; and investment in ultra low-emission transport, including Britain's largest fleet of electric buses outside London.

There is a cluster of low carbon projects and partnerships in the city of Nottingham. Nottingham City Homes (an arm's length management organisation owned by the local authority) and Nottingham Trent University are part of a European partnership that won £5 million for low carbon innovation in early 2015 (Nottingham Trent University, 2015). Nottingham University Hospitals NHS Trust has sought to reduce carbon emissions by replacing Nottingham City Hospital's 40-year-old coal-fired boilers; sourcing hospital food from local suppliers; and supporting low-carbon transport initiatives. A 'Green Theme Partnership' brings together the council and external stakeholders, including Nottingham's two universities and major private businesses, on environmental issues.

In terms of institutional logics, municipal governments have an obvious civic or community logic. But this can be framed in different ways, reflecting

the different 'orders of worth' of political leaders or interest groups. Nottingham City Council has been controlled by the Labour Party for the last 25 years, winning 50 of 53 seats in the 2015 local elections. A logic of social welfare, with a focus on addressing the causes and alleviating the effects of poverty, is prominent in the authority's approach. The 'council plan' for 2015-19 (Nottingham City Council, 2015) stresses the authority's determination 'to create a city that is fair for everyone and where we all have an equal and positive chance to succeed'.

As at Gentoo, this logic of social welfare or community benefit is expressed in energy efficiency and fuel poverty programmes. The fourth of five key objectives in the council plan is to 'tackle fuel poverty by setting up a not-for-profit energy company to sell energy at the lowest possible price to Nottingham people' (p. 3). The name of the company, Robin Hood Energy, plays on the redistributive principle at the heart of the Robin Hood legend as well as its local connections.

The city's climate change strategy (Nottingham City Council, 2011) reinforces this logic by spelling out five sets of benefits from local action to address climate change. These are lower living costs through cheaper energy and more affordable travel; greater security of energy supply; improved health and wellbeing; resilience against extreme weather events; and a vibrant local economy.

The logic of the market is more muted in Nottingham City Council's literature than Gentoo's. However, a low carbon economy is advanced as good for business (Nottingham City Council, 2011) and the city's energy strategy reinforces the ecological modernisation narrative of environmental action as economic opportunity (Nottingham City Council, 2010):

> The city's unique strength in energy self-sufficiency will be used to promote Nottingham in the UK and Europe as the first choice for location of sustainable energy related and green tech business, innovation and growth.

The vision at the core of the city's climate change strategy (a strategy currently under review) has a more overt ecological logic than the council plan. It is a vision of affordable local energy, low carbon transport and reduced

congestion, locally produced food and 'a place to breathe', and jobs in a low carbon economy. It is presented as an opportunity, without any hint that it might involve difficult choices. In contrast to Gentoo, the 'limits to growth' idea is absent. Its foreword declares:

> We are in a unique position now to lead Nottingham into a great low carbon future, a city where we have embraced the opportunities in climate change within our communities. We will reap the benefits as a city that has protected itself against rising energy prices and created jobs from a thriving, innovative green economy.

As the local authority for the city of Nottingham, the urban scale is self-evidently important. The city council's action on climate change involves strong partnerships with local organisations, both through the strategic Green Theme Partnership and on specific projects. There is also strong evidence of wider networks. Much of the authority's local action depends on these networks: the InSmart smart city initiative, for example, is a European-funded project involving a partnership with three other cities - Evora in Portugal, Cesena in Italy, and Trikala in Greece. Nottingham's investment in electric vehicles has been part-funded through a £35 million partnership with three other cities financed by the Office for Low Emission Vehicles (OLEV), a central government initiative. These are networks of expertise, but with a strong practical and project-based focus. There is also evidence of knowledge exchange through peer groups such as APSE Energy, which brings together local authorities involved in energy initiatives, and the Core Cities Group, a policy network encompassing the eight largest English cities outside London.

5.4.4 Manchester Metropolitan University

Greater Manchester is at the heart of the 'northern powerhouse' concept advocated by UK governments since 2010, in which investment in physical infrastructure is coupled with the devolution of governance (Nurse, 2015). The city of Manchester has a population of 520,000, but is part of a much larger conurbation with a total population of 2.73 million and an economy producing gross value added (GVA) of £56 billion annually (New Economy, 2015). Yet it also has some of the country's worst rates of poverty: 32 per cent of children in the city of Manchester live in low-income families (Public Health England,

2016c) and the city ranks fifth-worst nationally in terms of multiple deprivation (Department for Communities and Local Government, 2015).

Manchester Metropolitan University (MMU) is one of two universities in the city, the other being the University of Manchester, a member of the elite Russell Group. MMU is one of the 'modern universities' or former polytechnics which gained university status in 1992. It grew out of two Victorian institutions, Manchester Mechanics' Institution and Manchester School of Design, and became a polytechnic in 1970. MMU currently has 36,000 students and 3,000 staff, based on three campuses - two in inner Manchester, at All Saints and Birley Fields to the south-west of the city centre, and one at Crewe in Cheshire. After my fieldwork was completed the university announced the Crewe campus would close in 2019.

In recent years MMU has made a concerted effort to improve its environmental credentials, topping the People and Planet campaign group's University League in 2013 and coming third in 2015 and 2016. Its slogan, visible around many university premises during the research fieldwork, is 'Let's make a sustainable planet' (Manchester Metropolitan University, n.d. (a)). It positions its environmental work both as management of the adverse impacts of economic growth, and as a key part of its academic offer on the basis that environmentally informed graduates will be more attractive to employers. The university's environmental work has been publicly backed by two vice-chancellors and is supported by a dedicated team of 15 staff, mainly based in the estates directorate. Its approach covers the university's built estate, energy consumption, travel, procurement and waste management. Its strategies are supported through an engagement programme that seeks to instil pro-environmental behaviours among staff and students. Table 5.5 shows the different logics observed at MMU, which are discussed in more detail below.

TABLE 5.5. PREVAILING LOGICS: MANCHESTER METROPOLITAN UNIVERSITY

Prevailing and alternative logic(s)	Key beliefs about desired ends	Associated practices	Illustrative evidence
Prevailing logic: education as a civic or community good	The university benefits the city of Manchester by educating students and engaging in civic networks	Support for local neighbourhood initiatives; emphasis on 'global citizenship' in curriculum; involvement in Manchester climate change partnership	Environmental action framed as civic action: 'we have a responsibility to ensure our activities do not create adverse environmental impacts and to maximise our positive impacts through our teaching and research' (Manchester Metropolitan University, 2014, p. 3)
Subsidiary or alternative logic: the market	Education as preparation for the world of employment	History of vocational education; emphasis on employability and work experience for students	Public positioning on MMU website as 'the University for world-class professionals with an emphasis on vocational education and employability' '[a]s the demand for students with sustainability and global citizenship skills increases, MMU has a responsibility to ensure graduates possess the attributes and skills to be competitive in the employment market' (*Environmental Sustainability Strategy 2014-2020*, n.d.)
Insurgent (environmental) logic	'Let's make a sustainable planet'	Carbon literacy programme; education for sustainable development; new buildings as showcases for environmental technologies; involvement in Environmental Association of Universities and Colleges	Framing of environmental knowledge and skills as 'a duty shared by every student and member of staff' (*Environmental Sustainability Strategy 2014-2020*, n.d.) First university to achieve ISO14001:2015 standard (2016); first in People and Planet Green League (2013); hosts World Symposium on Sustainable Development at Universities (2015)

While many of its buildings are old and energy-intensive, MMU has invested heavily in low carbon building technologies. The recently-opened Birley Fields campus has been designed as an 'exemplar of building intelligence for a green university' (Manchester Metropolitan University, n.d. (b)) with the aim of being 'zero carbon, zero waste, zero water' through the use of a district heat network and combined heat and power system. The university was also

among the first in the world to achieve the updated ISO 14001:2015 environmental management standard. However, the target of a 35 per cent reduction in carbon emissions between 2005/06 and July 2016 was likely to prove a 'significant challenge' (Manchester Metropolitan University, 2016). By 2017 a reduction of 23.5 per cent had been achieved (Manchester Metropolitan University, 2017).

The university's approach, particularly on education for sustainability, appears to complement and extend the 'low carbon economic boosterism' which Hodson and Marvin (2013) describe as characteristic of activities and partnerships in Greater Manchester, with an emphasis on behaviour change and personal responsibility as well as economic opportunities. As Hodson and Marvin note, Greater Manchester has sought to reposition itself as a centre of low carbon entrepreneurship. Current centres of activity include the Greater Manchester Low Carbon Hub (under the auspices of the Association of Greater Manchester Authorities) and Corridor Manchester, an 'innovation district' focused on Oxford Road and the two universities.

The embedded logic of an educational institution, very obviously, is one of learning - a civic or community mission. But learning for what purpose? Asking that question gets us closer to the core logic of an educational establishment. The origins of MMU are reflected in its contemporary positioning as 'the University for world-class professionals with an emphasis on vocational education and employability' (Manchester Metropolitan University, n.d.). A market logic and a community logic come together throughout the university's history. The idea of community has expanded beyond Manchester to encompass a worldwide student catchment and international research links, but the university remains proud of its location and involved with its immediate neighbourhoods.

The university's environmental sustainability policy (Manchester Metropolitan University, 2014) reflects both an international outlook and the connections with the economy of the city of Manchester. It sets out its position (p. 3):

> …Manchester Metropolitan University (MMU) is a significant contributor to the Greater Manchester economy. As such, we have a

> responsibility to ensure our activities do not create adverse environmental impacts and to maximise opportunities to enhance our positive impacts through our teaching and research.

The policy's commitments cover compliance with legislation and regulation; research and knowledge exchange focused on sustainability; embedding sustainability in the taught curricula; encouraging engagement with environmental issues among staff and students; carbon reduction; energy management; sustainable and ethical procurement; sustainable buildings; travel plan management; waste and water reduction; and biodiversity. This is a broad focus, closer to Gentoo's 'one planet' positioning than Nottingham City Council's concentration on energy. Implicit is an acknowledgement that carbon reduction cannot be divorced from other environmental concerns.

However, a market logic of growth remains in place. This is reflected at an institutional field level. Although 'sustainable development' has a place in the thinking of the education regulator, the Higher Education Funding Council for England (HEFCE), both in its overarching business plan (Higher Education Funding Council for England, 2015) and in specific policy documents (Higher Education Funding Council for England, 2014), it is a relatively low priority compared with the financial sustainability of institutions in a competitive market, and the quality of research and teaching.

The university has strong local partnerships: it has been involved in Manchester's climate change partnership, Manchester: A Certain Future, and has been a testbed for the pioneering 'carbon literacy' programme developed within the city. It is also a key partner in Corridor Manchester. As an educational institution, however, its outward focus is as prominent. Academic and professional networks play increasingly important roles in contemporary higher education, and MMU taps into international environmental expertise with links to the University of Hamburg, and professional environmental knowledge through membership of the Environmental Association of Universities and Colleges.

5.5 Into the field (and back)

5.5.1 Getting through the gate

The process from case study selection to fieldwork is seldom straightforward. The researcher might choose a case study, but the case study also has to choose the researcher: there is no overriding reason why busy professionals should take time out of their schedules to talk about their work. Yet they do, and the vast majority of those I encountered were happy to be involved and keen to share their insights. There is an implicit understanding that the research is of value, even if it does not make a material difference to the organisation being researched.

The role of the gatekeeper is key here (Kitzinger & Barbour, 1999; Mikecz, 2012). The gatekeeper acts as a conduit between the researcher and the researched, both opening up and limiting access. Gatekeepers must persuade their colleagues to take part, set up meetings, book rooms where necessary, and handle conflicts. I was careful to prepare the ground with a summary of the aims of the project and a formal letter inviting each organisation to participate, as well as an initial meeting in which I explained the research and sought to answer questions.

I was grateful throughout to the gatekeepers in the case study organisations. They were willing to give their time to hold exploratory meetings; they obtained necessary permissions from colleagues and line managers; and they were invariably courteous and professional. However, I was also conscious that to some extent they were vetting who I could interview. So I also interviewed external stakeholders, approaching them directly rather than via gatekeepers.

Before conducting any interviews, I had to make sure I had enough relevant documentary material to assess the scope of each organisation's vision for transition. While all the documentation I gathered was in the public domain, not all was easily accessible: organisations' websites are inconsistent in the documents they make available, so I also relied on gatekeepers to source and send me relevant information. They were generally helpful and efficient in this respect.

5.5.2 Selecting interviewees

Table 5.6 below shows the interviews conducted across the three locations. I sought to achieve a balance of interviewees at different levels of responsibility, from top managers to operational staff, ensuring a range of perspectives from different viewpoints and professional backgrounds. To preserve anonymity, I have grouped the interviews into broad categories based on their roles, from executive to operational. The 'professional' category includes specialist and experienced staff without management responsibilities. The 'other' interviewee (column 5) was Ira Harkavy, chair of the Anchor Institutions Task Force. Professor Harkavy is a well-known public figure in the United States and was being interviewed in this capacity, and agreed to be identified in this research.

TABLE 5.6. SELECTION OF INTERVIEW / FOCUS GROUP PARTICIPANTS

Case study	**MMU**	**Nottingham City Council**	**Gentoo**	**Other**
Executive (board level)	2	3	4 (includes one former director)	
Senior manager	2	5	6	
Professional	5	2	1	
Operational staff	2	2	3	
External stakeholder	4	4	4	1
Focus group participants	4	3	5	
Total interviews	**15 + FG**	**16 + FG**	**18 +FG**	**1**

In all but one instance, interviewees readily agreed to audio recording. In the interview that was not recorded, I took contemporaneous notes and sent them to the interviewee to be checked for accuracy. All recordings were transcribed verbatim and the transcripts sent to interviewees to check for errors; of the 50 interviewees, 38 approved the transcripts or provided amendments or responses to queries; 12 did not respond to an initial email, or to a reminder

sent a few weeks later. In five cases, interviewees asked for small sections of the transcript to be omitted for reasons of confidentiality.

5.5.3 Topic guides and ice-breakers

The interviews were wide-ranging and the transcripts total more than 360,000 words. Most lasted between 45 minutes and an hour and all but six were conducted face-to-face; the others were done by telephone. Interviews were conducted between November 2015 and October 2016, with a concentrated period of fieldwork between April and July 2016. Most took place in interviewees' workplaces, in offices, meeting rooms or on-site cafes.

Each interviewee was given a standard consent form and a project-specific topic guide (Appendix A) to prepare them for the conversation, as well as the introduction to the research originally sent to the gatekeepers. The topic guide was divided into six sections, under the headings of 'making sense' (covering conceptions of a low carbon future); taking action; forming associations and networks; challenges; resolutions (to challenges); and any other reflections.

In endeavouring to cover all the bases, I ended up with a topic guide that was too detailed to be fully covered in the time available for each interview. I soon discovered, too, that some questions tended to leave interviewees flummoxed. In an attempt to be creative and to stimulate discussion I had included the question, 'what metaphors or images come to mind when you think of your role here?' This prompted responses from the nonplussed to the objection: 'I don't think in images, I think in bullet points'. Similarly, some struggled to describe their 'organisational story' of environmental activity, preferring to answer with a list of actions and projects.

Conversely, an opening gambit designed as an ice-breaker proved surprisingly informative. As an opening pitch I asked interviewees how they came to be in their current role. This tended to elicit stories of widely divergent career paths, ranging from individuals who had consciously pursued an environmental career to some who had almost become accidental

environmentalists, arriving in their roles through redundancy or organisational restructuring.

For the most part I treated the topic guide as a source of consistency across the interviews, but broadened the conversation wherever I felt the interviewee had a lot to say or was particularly animated by the subject area; I also used it to try to keep interviewees - especially some of the more senior executives - focused on the subject of the research rather than their personal agendas. By maintaining a degree of elasticity, the exchanges took on a conversational and personal tone, rather than pushing interviewees to act as spokespersons for their organisation.

5.5.4 Waving, not drowning

Stories, Flyvbjerg comments (2004, p. 299), do not tell themselves - 'although it will often seem as if they do to the researcher who is deeply immersed in uncovering the events and other minutiae that make up a particular chronicle'. Gathering, and becoming immersed in, data is also a process of reflection and selection, making choices about where the story starts and what milestones can be identified along the way. A shortage of data is seldom the problem.

Elder-Vass (2015, p. 82) comments that 'Exposition is an activity distinct from investigation, and exposition never follows the same sequence or logic (or lack of logic) as the investigation it purports to describe'. So he recommends an iterative process of collection and analysis. This involves retroduction - going back to the data and asking what they mean, rather than beginning with theory and seeking data to support or falsify it.

Fieldwork and data analysis for me was a process of immersion and resurfacing, ensuring I had regular spaces to come up for air before diving in again. After each cluster of interviews I made a habit of going to a local cafe, allowing my thoughts on the interviews and encounters to settle before jotting down any particular reflections and key issues. Sitting still - or going for a walk, if I had spent a long time in the car or on trains - became a way of attempting to step back and reflect on the research data.

One aspect of immersion was to transcribe every interview myself, a laborious and time-consuming process but one that enabled me to listen carefully to what was being said, paying attention to tone of voice and animation. As well as allowing me to familiarise myself with the data at the earliest opportunity, it also enabled me to identify gaps and queries. Towards the end of a long summer of transcription I was in a position to test out some initial ideas and findings in a small focus group discussion at each case study location. For these discussions I produced a much shorter topic guide, covering questions of the drivers of change within each organisation; the extent of change; understandings of change; scales of change; and 'landscape effects' at national or global scales (see topic guide, Appendix B).

The focus group discussions were frank and reflexive, partly I suspect because of the small numbers of participants (three in Nottingham, four in Manchester and five in Sunderland). Participants engaged honestly and enthusiastically with the questions, and my main involvement as facilitator was to keep moving the conversation on to ensure we kept to time.

The focus group discussions could not be held until December 2016, and I could not wait this long to begin a full analysis of my data. So while the focus groups were important in testing elements of my thesis, I was already making judgements about key themes. Data analysis, in such a process, becomes a form of sensemaking, deciding which elements matter most in structuring the material and which should receive less attention (Eisenhardt, 1989; Langley, 1999).

Many qualitative researchers use specialist software such as NVivo to code research data. In approaching the data I was concerned, in the words of one NVivo trainer, not to 'cede the hermeneutic task to the computer' (personal communication, NVivo training workshop, 15 December 2014). In the event I settled on a largely manual approach, using the more intuitive (to me) Scrivener application to bring together large quantities of research data and apply an iterative coding process. The Scrivener software had the advantage of being accessible on an iPad and projects could easily be synchronised between different devices, allowing me to work in different locations and while travelling.

The coding process involved three stages (Appendix E). All interview and focus group data, as well as selections of institutional literature, were gathered into a single Scrivener project. They were thus searchable by word, phrase or label across the entirety of the data. First chunks of text were colour-coded according to the three stages of the hermeneutic cycle described in Chapter 4, and the research questions set out in Chapter 1 and at the start of this chapter. Text was colour-coded for visions of change (prefiguration); for constraints on change or ideas of discordance (configuration); and for modified interpretations where both the nature of a low-carbon future and the role of the institution were being adjusted and reformulated (refiguration). I also highlighted segments of text illustrating embedded logics, particularly where they had the possible effect of diverting change pathways, as well as discussions of networks and epistemic communities.

The second stage was to assemble the segments of highlighted text into separate sections of the project based on their broad themes and apply a more detailed coding schema. Finally, I re-read the non-coded sections of text to look for further areas of interest.

The rationale for basing coding on theory, rather than using a more open 'grounded theory' approach and building a theoretical perspective from the themes emerging from interviews (Glaser & Strauss, 1967; Locke, 2001), was that I was specifically interested in material relating to institutional change and low carbon transitions. By subsequently checking uncoded material I was able to ensure salient points were not missed, while the two stages of 'molar' and 'granular' coding (Kidd & Parshall, 2000) opened the broad theoretical categories to more nuanced analysis.

5.5.5 Knowing my limits

Unwieldy as a doctoral research project might appear at times, throughout this process I have been aware of limitations: limits to the number of interviews I could conduct, the volume of theoretical material I could read, the expanses of interesting and relevant literature set aside in order to stay focused and meet deadlines.

Conceptually, it is challenging to try to say something significant about an issue as vast as sociotechnical transition through small and time-constrained case studies. Ideally, longitudinal research should be done, deeply embedded in institutional contexts over an extended period (Hay, 2011; Zilber, 2017). I hope my research might eventually inform such studies. With that in mind, I have sought to use the time and space available in this inquiry to put forward a framework that might be tested and developed through further research. That has entailed a focus on particular areas of scholarship to the probable neglect of others, and the use of relatively conservative methods of inquiry rather than attempting to be innovative in terms of data gathering.

More pertinently to the findings of this inquiry, I did not have the opportunity to extend my research to an organisational field level. A useful follow-up to this study would be to examine how ideas of a low carbon future are spreading horizontally across institutional fields, as well as within organisations and localities. Higher education, given the strong profile of the Environmental Association of Universities and Colleges, would be a strong candidate for such a study.

Chapter 6: Presenting the possible

6.1 Emerging narratives and logics

In Chapter 4 (section 4.3) I explained my adaptation of Paul Ricoeur's hermeneutic cycle, referring to the stage of prefiguration as one of vision: the articulation and hope of transition. Coupling this with the institutional logics perspective, one can speak of a vision as a potentially insurgent logic (Suddaby & Greenwood, 2005), with the capacity to challenge or divert an institution's prevailing logics. From a transitions perspective, scholars speak of innovation arising from sociotechnical niches, protected spaces where new ideas and technologies are incubated (Geels, 2004).

In this chapter I present data from institutional documents and fieldwork to explore how visions of a low carbon future have been developed and presented. The starting point for investigating 'vision' in this inquiry is the organisational goal and trajectory, expressed primarily through its public documents. A document, however seldom it is referred to in practice, exists as a reference point and can exert a gravitational force, pulling an organisation back to its intended purpose. Ricoeur (1965) however, warns against attributing to documents a 'false objectivity'; as Rydin (2014) observes in her discussion of the London Plan, such documents in practice become 'profoundly provisional … an expression of a temporary vision'. So I examine documents as a way of tracing what kind of vision is being presented, and how comfortably it sits with existing logics; but with the caveat that the document is not the institution. It may, though, be a milestone on an institutional journey.

Next I turn to my interviews with actors to examine their own concepts of a low carbon future: what they imagine such a future to look like, and the understandings of change that underpin these imaginaries. In doing so I refer to Thornton, Ocasio, and Lounsbury's discussion of the development of institutional logics (2012). They argue (p. 152) that institutional logics are not 'transposed directly to institutional fields in whole cloth'. They emerge and are enacted through three forms of symbolic construction. Theories, they postulate,

make institutional logics coherent and facilitate the rapid adoption of complementary practices. Frames (Goffman, 1974) facilitate identification with an institution and mobilisation for action. Narratives link theories and frames with specific practices, binding together the symbolic and material.

Such processes are also likely to be at work when an institution's core logic is developing, changing or being challenged. The identification of theories, frames and narratives provides a useful heuristic device by which observers may read and interpret how actors and institutions interact and co-produce change. If there is a theory, it is most likely to appear within an organisation's documentation, which will have emerged through processes of discussion, editing and approval. Frames and narratives are deployed in practice by actors as well as appearing in institutional literature. In the second part of this chapter I focus on actors' frames and narratives to highlight the various ways in which visions of transition are understood in practice.

In order to put the emerging narratives and logics in the three case studies in context, I have included a timeline below (Table 6.1) noting some key developments at each organisation and in the wider world. This is not exhaustive, but intended as a helpful reference point in relation to the findings presented in this and the following two chapters.

TABLE 6.1. TIMELINE OF LANDMARK EVENTS IN EACH CASE STUDY ORGANISATION

Landmark events in case study organisations

Year	National or international context	Gentoo	Manchester Metropolitan University	Nottingham City Council
2000				Nottingham Declaration on climate change.
2001		Establishment of Sunderland Housing Group.		
2004		First environmental policy drafted.		
2005			First HEFCE policy on sustainable development in higher education. Manchester City	

			Council sets up environmental strategy team.	
2006	Stern Report on economics of climate change.		‘Manchester is my planet’ city-wide climate change campaign.	
2007		Sunderland Housing Group rebranded as Gentoo; Gentoo Green set up. Environmental strategy and action plan published. Gentoo wins UK Housing Award for sustainability.	Students lobby vice-chancellor on environmental issues. Head of environmental strategy appointed.	
2008	Climate Change Act sets greenhouse gas reduction targets of 80% on 1990 baseline by 2050. Department of Energy & Climate Change created.	Achieves ISO14001 accreditation.		
2009	UK Government Low Carbon Transition Plan. COP15 climate change conference in Copenhagen fails to agree emissions reduction plan.	‘Kettlegate’.	Strategic development framework for Birley Fields emphasises low carbon development.	
2010	Election of Coalition government; beginning of austerity programme.	Carbon footprint assessment completed.	27th place in People & Planet Green League.	Energy and waste strategies published; expansion of heat network begins.
2011	Coalition government publishes Low Carbon Plan. COP17 climate change conference, Durban, agrees to establish legally binding carbon reduction deal by 2015.	Acquires Romag solar panel manufacturer.		Climate change strategy published.

2012	Green Deal energy efficiency scheme launched.	New environmental strategy produced. PV installation programme starts. MBE for Gentoo Green director.	First Green Gown award. 10th place in People & Planet Green League. New Business School building opens.	Climate Local initiative launched by LGA, replacing Nottingham Declaration.
2013			First in People & Planet Green League. Eco-campus silver award. Business School wins Prime Minister's Award for Better Public Buildings.	Clifton estate solid wall insulation project begins.
2014			£140m new campus opened at Birley Fields. Hosts World Symposium on Sustainable Development at Universities.	
2015	Election of Conservative majority government. COP21 climate talks, Paris.	Major restructuring; 330 job losses announced. Chief executive replaced. 5000th solar installation completed.	Third place in People & Planet Green League. Receives NUS Responsible Futures accreditation. Malcolm Press appointed vice-chancellor.	£5m European research project on low carbon innovation begins. Robin Hood Energy launched. Tram extension opens, funded by workplace parking levy.
2016	Paris Agreement on climate change ratified by 55 signatories. Brexit vote. UK announces closure of coal-fired power stations by 2025. Closure of DECC.	Legal status changed to become community benefit society. Target of carbon neutrality by 2016 shelved. Boiler on Prescription report published.	First university to achieve ISO14001:2015 standard. Carbon reduction targets reviewed. Third in People & Planet league.	2020 carbon reduction target achieved 4 years early with 33% cut in emissions on 2005 levels. 4000th solar installation completed.
2017	First CO2 reading of more than 410ppm by Mauna Loa Observatory. Election of Conservative minority government. UK announces all new cars to be electric by 2040.		Closure of Crewe campus announced.	Nottingham Green Partnership celebrates 25 years.

6.2 Prefiguring change: public positioning

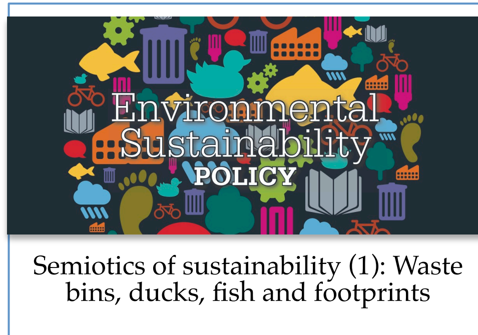
If a rationale for change is to be found in an institution's notions of environmental sustainability and transition, one would expect this to be reflected in its documentary materials - the institution's 'communicative discourse' with the public (Schmidt, 2008). Similarly, if a new logic is to be introduced (Thornton et al., 2012) one might seek evidence from documentary material connected to an organisation's vision and sense of direction.

To inform my inquiry at the outset and contextualise the findings from interviews and focus groups, I began with a trawl of literature from each organisation. This was supplemented with a range of documents supplied by 'gatekeepers' in each organisation and individual interviewees. In all, 46 documents were examined. A full list is included as Appendix F.

Rather than analysing all of them, after reading all the material I chose three documents each from Gentoo and MMU and four from Nottingham that provide an overview of each organisation's public articulation of its low carbon vision and policies. As well as being publicly available material, each document was selected because it provides insights into the strategic thinking and governing logics of the institutions studied. The four Nottingham documents are a suite of strategies produced in 2010 and 2011 that have guided the authority's thinking up until this research began; the Gentoo and MMU documents were produced in the years immediately preceding the research or shortly after it had started.

In selecting and analysing this material I was conscious of Ricoeur's observation (1988, p. 117) that archives or historical material form 'the documentary stock of an institution', an 'authorised deposit' that, regardless of its use in practice, makes a public statement of the institution's position. It fits within a tradition of analysis in political science that 'employs the tools of the lawyer and the historian' (Rhodes, 1997), but is informed by the understanding that documents may '*do* things as well as contain things' (Prior, 2008, p. 822, author's italics).

6.2.1 Manchester Metropolitan University



Semiotics of sustainability (1): Waste bins, ducks, fish and footprints

Semiotics of sustainability (2): Happy students in landscaped spaces

The three documents selected as indicative of the university's thinking are the *Environmental Strategy 2014-20*, the *Annual Environmental Sustainability Statement 2013-14*, and the *Annual Environmental Sustainability Statement 2014-15*. All three carry the slogan 'Let's make a sustainable planet' and a minimalist iconography on the front covers with outline images including low energy light bulbs, waste bins, bicycles, footprints, books, rainclouds, trees, gear wheels, industrial buildings, ducks and fish (illustrated above). Each icon references a particular performance indicator, on which progress is reported in each sustainability statement - the duck, for example, represents biodiversity, while the footprint symbolises energy management.

The first two documents maintain a similar style throughout, with infographics and tables in pastel shades conveying the university's achievements and intentions. The 2014-15 statement sees a change of style, with the introduction of colour photographs of staff and students at work on sustainability initiatives (including three pictures of tree-planting) as well as images of electric vehicles and energy-efficient buildings. The facts and figures are supplemented with case studies of activities and achievements, including the successful 'MetMUnch' food initiative and the international Triangulum 'smart cities' project.

The images in the 2014-15 statement include sleek modern buildings, groups of students from diverse backgrounds in happy conversation in landscaped green spaces, a pair of young men staring intently at an arrangement of electronic components, and a studious-looking woman wearing latex gloves examining the herb garden at the Birley campus. Taken together, such images

are indicative of progress and professionalism, as well as fun and inclusion: they are the sort of images one might find on a brochure advertising the university to undergraduates. On the basis of the images alone, one might conclude that sustainability is indistinguishable from the university's core activities, forming part of its semiotic brand equity (Oswald, 2012).

This is a message affirmed right at the start of the *Environmental Strategy 2014-20* (Manchester Metropolitan University, n.d. (d)). 'Manchester Metropolitan University (MMU) is the University for World-Class Professionals. Our Environmental Sustainability Strategy will enable us to become one of the most environmentally sustainable universities in the world,' it proclaims. Professionalism - the hallmark of student achievement - is equated with global leadership on sustainability, achieved by way of a strategic plan. The strategy continues:

> Environmental sustainability is placed alongside graduate employability as a key priority for MMU. Protecting the environment and ensuring our graduates have the necessary sustainability knowledge and skills is no longer optional - it is a duty shared by every student and member of staff.

The professional logic - the logic of learning and preparation for employment common across the higher education sector - is reinforced by an ethical appeal. Learning about sustainability is a 'duty'. Whether this is a duty to the planet (an ecological responsibility) or to human society (a civic responsibility) or to the institution itself is not spelled out. However, the strategy explains that '[a]s the demand for students with sustainability and global citizenship skills increases, MMU has a responsibility to ensure graduates possess the attributes and skills to be competitive in the employment market'. What is implicit here is a contractual duty between the university and its students: we teach you so you can compete in the marketplace. Behind this impetus for environmental sustainability is the logic of the market. Similarly (p. 11) the use of university premises as a 'living laboratory' for students not only improves the sustainability of the estate, but provides 'real-life experiences for students' - the sort they might put on a CV.

The Environmental Sustainability Statement 2013-14 begins by listing the university's environmental awards as indicators of progress and recognition. Peer recognition is presented as a prime signifier of success (understandably,

with six separate awards to celebrate). This messaging is reinforced with celebrity endorsements - visits from the entrepreneur Lily Cole and environmental elder statesman Jonathon Porritt are cited as indicators of the university's status. There are also impressive statistics to quote: a 22.8% reduction in scope 1 and 2 carbon emissions (i.e. those produced directly through university activities) since the baseline year of 2005/06; a 44% reduction in gas consumption; a recycling rate of 40.5%; and 36 tonnes of unwanted items collected from students and donated to the British Heart Foundation.

The following year's statement, while richer in images and case studies, is less gung-ho about the university's achievements, although there is still progress to report - 'gold' accreditation in the EcoCampus awards, and third place in the People and Planet Green League - and it signals that aligning environmental sustainability with successful growth is not unproblematic. Where the 2013-14 statement reported a 22.8% reduction in carbon emissions since 2005/06, that figure had fallen to 10.8% the following year (p. 18). The university, director of services Paul Kingsmore reports (p. 7), has 'highlighted a need to revisit some of our targets'. On net carbon emissions, the university went backwards in the year in which this study commenced. The shift from a style of report emphasising facts and figures (2013-14) to one in which images and case study narratives are more prominent (2014-15) helps to downplay the contrast between the two years.

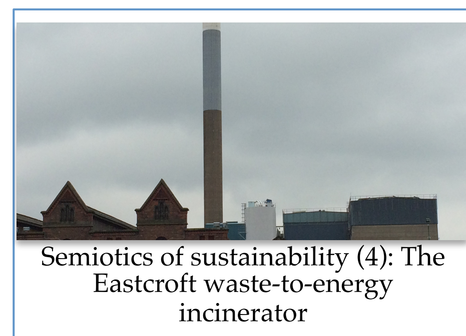
Taken together, these documents present MMU's vision of a low carbon future as serious and comprehensive. Progress is measured against twelve separate indicators, covering not only the physical fabric and material consumption of the university but also its intellectual and social impact. The approach is closely aligned with the university's function as a learning institution rather than being corralled within the estates department, and is justified as concomitant with the broader shift of higher education towards a market logic. While the Environmental Sustainability Strategy notes (p. 9) that 'the concept of sustainability is inclusive of a range of cultures, values, behaviours, processes and operations' there is an overarching assumption that continued growth and environmental responsibility can go hand in hand.

Despite the increase in carbon emissions between 2013-14 and 2014-15, the notion of limits to growth remains 'saliently unsaid' (Linde, 2001).

While teaching environmental sustainability is viewed as a core activity of the university in a way that extends its status function (few other universities present their business as being that of making 'a sustainable planet'), the significant changes in investment, consumption and intellectual activity implied in the sustainability strategy are simultaneously harnessed to (and constrained by) established logics of teaching and learning and, perhaps more importantly, by embracing the market logic of competitiveness and growth. The underpinning rationale is that by making sustainability a core aspect of teaching and learning, students will compete more successfully in the marketplace and the university will grow and succeed.

6.2.2 Nottingham City Council

Semiotics of sustainability (3): Icons of municipal authority



Semiotics of sustainability (4): The Eastcroft waste-to-energy incinerator

Nottingham City Council was an early adopter in terms of environmental positioning, its Nottingham Declaration (Nottingham City Council, 2000) setting the tone for local government in the UK for several years. The documents examined here form a suite of interconnected strategies published in 2010 and 2011: the *Nottingham Community Climate Change Strategy 2012-2020*; the *Carbon Management Plan 2011-2016*; the *Nottingham City Council Energy Strategy 2010-20*; and *A Waste-Less Nottingham* (the council's waste strategy for 2010-30). All four were published at a time when local authorities in England were preparing for a period of belt-tightening following the global financial crisis of 2007/08, but had yet to feel the full force of the austerity cuts imposed after the

2010 General Election. When this study began, the council was intending to review these strategies but had not yet started this process; no new strategies had been published by mid-2017. So while the documents are dated, they remain indicative of the council's public position.

Unlike MMU's documents, the design of Nottingham City Council's material follows a familiar pattern in local government: a picture or illustration on the front, a foreword by the councillor responsible for the relevant portfolio, and a substantial text interspersed with graphs, diagrams and photos. There is little branding or overt design input: the documents look and read like many other council strategies. While the audience for the Climate Change Strategy in particular is the general public, its 48 pages are not designed for the casual reader; as for the 96-page energy strategy and the 68-page waste strategy, these would appear to be aimed mainly at business partners and council officers.

The Climate Change Strategy builds on the other documents and draws them together under an overarching narrative. This is set out in the foreword by Cllr Alan Clark, portfolio holder for energy and sustainability (p. 4):

> We want to create a prosperous, leading, low carbon and resilient city, maximising the opportunities for green growth, whilst protecting our residents from the impacts of extreme weather. This document aims to inspire, and encourage behavioural change, providing locally focused actions which are relevant to our communities.
>
> Climate change is an opportunity to make small stepped changes to our lifestyles which reduce our carbon footprints and improve our quality of life. We can create secure energy for our city by using renewable sources to create energy, we can support our local economy by making sure the things we buy are locally produced, we can even help continue growth in our green economy by creating jobs for local people, manufacturing and installing products which help lower our consumption of energy.

The document sets out a vision (p. 7) of

> A city where you have access to secure, affordable local energy, where the buildings we use and live make the most of the natural environment, and are adaptable to our future climate.
>
> A city with little congestion and vehicle use, and excellent public transport, and where vehicles are fuelled by renewable energy.
>
> A city where you can buy local affordable food, where you have a place to breathe and enjoy the best of what nature provides.
>
> A city where you have a secure career at the forefront of low carbon technology, within a thriving green economy.

The strategy sums up the council's approach in one sentence on page 5: 'We are in a unique position now to lead Nottingham into a great low carbon future, a city where we have embraced the opportunities in climate change within our communities.' This 'heroic, progressive narrative' (Throgmorton, 2003) presents climate change as anything but a threat. It is a tale of a prosperous, healthy and resilient Nottingham. Low carbon industries could create between 9,000 and 12,000 new jobs (pp. 13-14). Such optimism is presented as being aligned with government policy (p. 20) as well as building on local achievement, particularly within the city's two universities.

At the same time, the strategy argues that the behaviour of local people will need to change to achieve the council's ambitions. The strategy presents an analysis of Nottingham's population by electoral ward, with residents labelled on a scale ranging from 'eco-evangelists' and 'convinced consumers' (matching the younger city centre population) to 'constrained by price' and 'wasteful and unconvinced' (mainly in outlying or poorer areas). The council promises to try to create 'green social norms' that will 'make energy saving fashionable' (pp. 28-29) - although there is no evidence from fieldwork that this has been attempted.

The energy, waste and carbon management strategies are more technical documents than the climate change strategy, and less concerned with the council's public positioning. Nevertheless they reinforce two prominent strands in the local authority's outlook: its positioning as a national leader on climate change, building on the Nottingham Declaration; and the presentation of climate change as an economic opportunity.

The waste strategy, for example, cites the Nottingham Declaration and states that the council should 'lead from the front' in improving environmental performance, particularly in terms of minimising waste at the point of production rather than simply focusing on recycling or re-use as fuel for the city's district heating network. The prime criterion for managing waste will be 'carbon performance' (p. 25), ostensibly based on a philosophy of One Planet Living (p. 26) - 'to consume at a rate at which we can all coexist and not deplete the Earth of resources at an unsustainable rate'. Apart from two mentions of One Planet Living in the waste strategy, its only other occurrence in any of the

city council documents examined is in the glossary of the Climate Change Strategy.

The energy strategy is couched primarily in terms of alignment with national government priorities. The strategy 'identifies the key technologies and programmes required to enable Nottingham to play its part in meeting the national and local targets on carbon reduction and low or zero carbon energy generation' (p. 2) and frames such alignment as local leadership (p. 4):

> Nottingham as a City is starting the low carbon transition from a leading position. If any city in the UK can meet its part of the Government's national targets, it is Nottingham, but there is still a very long way to go. Nottingham is however exceptionally well placed to remain the UK's most energy self-sufficient city.

The phrase 'most energy self-sufficient city' encompasses leadership (Nottingham is top of the league table), resilience (Nottingham is more able to withstand adversity) and an understanding of environmental transition as primarily a question of energy production and consumption. In turn this offers economic benefits in 'sustainable energy generation, fuel supply, low carbon infrastructure, technology supply chains and energy services' (p. 2). This echoes the ambition expressed in the carbon management plan of 'a low carbon prosperous city' (executive summary, p. 2).

Unlike the other documents, the energy strategy also presents the council's approach in terms of mitigating risk. It declares (p. 20):

> The window of opportunity to take effective action to avoid catastrophic climate change is rapidly closing. The consequences of inaction will endanger the livelihoods of current generations, and condemn generations to come to an uncertain future of widespread human adversity, ecological disasters and political, social and economic instability.

These warnings, however, do not lead to a call to limit growth or consumption. Rather they are used to support the technical solution offered locally, the district heating network fuelled by the waste-burning incinerator at Eastcroft near the city centre. Like the New Climate Economy project (Stern & Calderon, 2014) the energy strategy combines the optimism of economic opportunity with a foreboding of impending disaster if the opportunity to

change is not taken. A strategy predicated on burning waste is therefore presented as the greenest available solution (p. 42):

> While not the lowest carbon energy source, Energy from Waste, with combined heat and power (CHP) and district heating, does represent a very significant carbon saving versus natural gas and mains electricity supply. This will help to dramatically reduce the City's carbon emissions. Local energy generation will also increase the City's energy self-sufficiency. Over time it may also be possible to diversify the heat sources used in the enlarged district network to include more renewables.

Considered as a set, these strategies - even though they demonstrate differences in presentation and argument - place Nottingham, like Manchester Metropolitan University, firmly in the ecological modernisation camp. The future, despite environmental challenges, is one of technological and social progress. The strategies' logic is firmly aligned with the council's core logics of civic responsibility and social welfare, expressed in terms of economic opportunity and local leadership. The rationale for change is that by framing climate change as an opportunity, the city will benefit economically from transition and the local authority will reinforce its leadership position. But this is vulnerable to the risk-based arguments presented in both the energy and the waste strategies: what is 'saliently unsaid' is that if the current opportunity is not taken, something radically different will have to be done.

6.2.3 Gentoo Housing

Semiotics of sustainability (5): Saving the planet is fun at Gentoo

Semiotics of sustainability (6): A Gentoo-branded Leaf electric car

Three documents were examined as examples of Gentoo's vision and positioning. These were *Footsteps*, Gentoo's sustainability impact report for

2012/13; the *Art of Living Responsible Business Report 2014*; and the group's third *Planet Smart Journal*, produced in 2015. These reports cover the high tide of Gentoo Green activity, with the final document published after the replacement of the group's chief executive but prior to the main round of redundancies in 2015/16.

Unlike the Nottingham documents, Gentoo's material is strongly designed and branded in order to appeal to commercial clients and the public. Bright colours, infographics and lively photographs portray an organisation that is positive, confident and savvy about its market position. The underlying message, reinforced by pictures of awards events and community activities, is that environmental action is fun and fulfilling. It is storytelling with a happy ending (van Hulst, 2012). Gentoo and its staff are consistently described as passionate and innovative, underlined by the use of the 'Planet Smart' slogan and branding.

The *Footsteps* report sets out four 'key objectives' shortly after Planet Smart was launched as a strategy and brand for the group. These are for Gentoo itself to 'become more Planet Smart'; to exert strategic influence; to 'deliver an excellent customer experience'; and to deliver 'a viable low carbon business'. The report explains (p. 4):

> The first three objectives set out how [we] aimed to achieve our ultimate goal of making the world Planet Smart. The fourth objective sets out how Gentoo Green can become more commercial by increasing its revenues while still achieving our wider Planet Smart Objective.

From the start, Gentoo appears ambitious both in extending its approach to 'the world' and in presenting it as a commercial opportunity. It declares its positioning to be 'almost certainly unique in our sector' (p. 5) and promises to 'work with influential people who can make change happen' (p. 10). Environmental action is a moral responsibility, but also the action of a responsible landlord that looks after its residents (p. 8):

> We do this kind of work because we just believe it is the right thing to do. This isn't just about helping the environment, this is about the added benefits; it's about warmer homes, healthier people, less CO2, less energy used, less fuel poverty, a more sustainable asset management strategy and increased employment. It's all part of our objective to empower people and communities by investing in people, the planet and in property.

This sense of responsibility is combined with entrepreneurial values. Like a commercial company seeking investors, Gentoo presents itself as being at the cutting edge of new products and technologies (p. 11):

> Innovation is central to the future of Gentoo. With such rapid developments of products and approaches in the Green agenda, we cannot wait for opportunities to come to us. Research and Development (R&D) allows us to identify and develop potential new products and opportunities.

The *Art of Living Responsible Business Report* redoubles the rhetoric, presenting Gentoo's actions as leadership as well as civic responsibility. The language is inspirational and aspirational; the organisation's mission is to 'generate wealth by improving the lives of our customers and re-invest it through passionate people to create a climate for personal and collective opportunity' (p. 2). This leads to a set of values that are entirely abstract but couched in motivational language:

- Believe nothing is impossible
- Re-imagine the future
- We cultivate a learning curiosity
- Live authentic relationships
- Give us all you've got

In environmental terms, the underpinning philosophy is that of One Planet Living (Dobson, 2007): to use resources in line with the planet's capacity to regenerate. The 'one planet' philosophy is outlined explicitly in the 2014 report (p. 5). Gentoo includes future generations in its ambit of responsibility; they too need access to the resources available to people and organisations today. This is 'just the right thing to do' (p. 16). This leads to specific targets, such as carbon neutrality by 2016 (a target that was shelved after the organisation's financial crisis), meeting environmental performance criteria such as the BREEAM 'excellent' standard on new homes, and demonstrating the efficacy of the Boiler on Prescription scheme, which seeks to test the health impact of energy efficiency measures. It leads, too, to more general strategies such as seeking to influence government and to change public behaviour (for instance, through educational programmes in schools).

The *Planet Smart Journal*, produced as the group was beginning to reassess its strategies following intervention from the Homes and Communities Agency, shows no lessening of the 'one planet' message. The Planet Smart approach has

become 'culturally embedded' and Gentoo is now 'part of a growing movement of responsible businesses who are really looking at what they do with a view to reducing their environmental impact' (p. 3). In the light of the pressure to retrench that must have already been evident when this document was produced, the tone of the foreword by (the then) acting chief executive John Craggs seems almost defiant:

> Society's opinion is changing. Environmental issues and interest in them is growing in prominence. If a business is to act responsibly it must respond both to public demand and statutory requirements for environmental sustainability.

The underlying logics of Gentoo's literature are those of community and social welfare combined with market innovation. These find expression in an 'inspired' order of worth (Boltanski & Thévenot, 2006) that adopts the language of missionary zeal ('making the world Planet Smart'), ethics ('the right thing to do') and social movements ('the power of small actions'). The means have parallels with Nottingham, especially in terms of building design and energy efficiency, and with MMU in terms of education and inclusion. But there are more indications that Gentoo has begun to see its core function differently, not just as a provider of housing but as a catalyst for a sustainable society, supported by entrepreneurial investments and forms of community engagement that go well beyond the traditional remit of a social landlord. The underlying rationale is that in order to fulfil its responsibilities to its residents, Gentoo also needs to fulfil its responsibilities to the planet. By expanding its core logic it will protect its core functions.

6.2.4 Is an intention a rationale for change?

The presentation of institutional positions within public documents could be regarded as rationales for change: organisation X will do Y, and Z will happen as a consequence. Such rationales, however, have to be gleaned from the institutional literature because they have not been set out explicitly. Intentions and actions are emphasised; rationales and interpretations tend to be assumed. Even where progress is measured by a battery of indicators, as at MMU, the underpinning logic falls short of Connell and Klem's (2000) insistence that a

theory of change should be plausible, doable (that is, sufficiently resourced), testable, and meaningful (that is, the outcomes must matter to those involved).

The literature examined problematises environmental sustainability and sets out actions and targets, but with limited analysis of whether or why the actions will address the problem. It does, however, go some way towards meeting Thornton, Ocasio, & Lounsbury's suggestion (2012, p. 152) that theory should make institutional logics 'coherent'. MMU's documentation in particular offers a fairly consistent portrayal of a direction of travel and links its environmental strategy closely to its role as an educational institution. Gentoo's voices a clear environmental logic and seeks to link it with its priorities of 'people' and 'property'. Nottingham City Council's strategies are less coherent, focusing on the detail of service provision rather than on an overarching strategic purpose.

If institutions' public positioning is characterised by lacunae, actors' own understandings are even more so. Studies of institutional work (actors' efforts to maintain or disrupt institutions) suggest that actors are simultaneously engaged in processes of stabilising and changing institutions, and that in doing so they may call on multiple logics from different institutional fields (Hargrave & Van de Ven, 2009; Martí & Mair, 2009). In the next two sections I examine how actors begin to make sense of the new possibilities that low carbon transitions offer.

6.3 Making sense of possibility: logics and actions

If a future imaginary is a desired destination, it implies a question of how one can 'get there from here' (Connell & Klem, 2000). In seeking to elicit interviewees' understandings of the future, I was concerned to understand the journey they believed they were on as well as the destination to which they were heading.

Far from exhibiting a common understanding of transition, actors in the case study organisations understood and explained environmental projects and programmes on a scale ranging from continuity to a radical shift in direction. Through re-reading and coding transcripts of interviews and focus group

discussions I identified three broad framings of institutional direction and change. Frames, Goffman says, are 'schema of interpretation' that allow individuals 'to locate, perceive, identify and label' life events (Goffman, 1974, quoted in Thornton et al., 2012, p. 154); they are expressed through symbolic interaction and negotiation (Benford & Snow, 2000). Frames are deployed when actors seek to explain what they are doing - for example, in response to a researcher's inquiry.

6.3.1 Protecting assets, mitigating risks

Most typically, interviewees framed the institutional trajectory and the rationale for change in terms of continuity and improvement. First, this was expressed in terms of protecting and improving an institution's assets. At Gentoo these assets are obvious, in the form of the homes it builds and rents out or sells. Energy efficiency measures improve the longevity and cost-effectiveness of these assets, either directly or by improving the circumstances of residents so that they keep their homes warmer:

> I think a lot of the time as an organisation we've focused on, you know, the actual customer side, that'll save the customer this amount of money, their house will be warmer, they'll have more disposable income to improve their art of living, but also from our side as an organisation if they're heating the house more it's protecting our asset more … it's not going to have a risk of condensation/dampness, if they've got more disposable income they've got more chance of paying the rent, so it makes business sense.
>
> (Professional, Gentoo).

An external stakeholder made a similar observation, describing a 'virtuous circle' of carbon reduction, improved properties and happier residents.

At Nottingham City Council a comparable rationale is at work regarding domestic energy efficiency. Nottingham's low carbon strategy is also highly dependent on one particular asset, its waste-to-energy plant based on the incinerator at Eastcroft dating from the 1970s. Qualms about whether or not this is a genuinely 'green' technology are offset by its comparative advantages over fossil fuel burning and because of the invested capital embodied in the plant. At the time this study was conducted the plant's historic debts totalled £13 million, and a

senior executive explained in one interview that the council's plan was to pay these off by 2030 through the profitable expansion of the district heating network.

MMU's position is slightly different in that the physical assets - the university campuses - have recently undergone major reconfigurations, which have been used as an opportunity to design in less carbon-intensive technologies. The university also needs to protect and invest in its intellectual assets, in particular its status as a place of learning that can equip students for life beyond an undergraduate degree:

> I think the university really needs to look at what the external drivers around graduate employability are gonna be over the next ten years. What are companies going to be looking for, and then how are we going to internally strategise that and deliver it?
>
> (Focus group participant).

Part of the process of protecting assets is to mitigate risks. These risks are predominantly conceptualised as institutional rather than environmental; at MMU the concern about graduate employability is linked to the risk of failing to compete in the higher education marketplace. At Nottingham and Gentoo, the concern with protecting property assets is a form of risk limitation. Risk is also a spur to further action and potential innovation. Interviewees saw Nottingham's quest for greater energy self-sufficiency as a risk mitigation strategy, both in terms of its vulnerability to energy markets and as a way of offsetting financial threats by developing commercial services.

6.3.2 Enhancing reputation

Actors also explained the institutional journey in terms of reputation. Organisational identity is constructed through relationships and reputation (Alvesson, 2002), and reputation management can also take organisations in new directions (Ehlenz, 2015). Having a name for being 'green' or environmentally responsible can enable an organisation to attract employees and exercise influence within its institutional field and locality.

Reputation is affirmed by awards and accolades. MMU's trophy cabinet sends a message to colleagues and stakeholders validating the university's

environmental stance, and in turn attracts resources and staff. Awards create a buzz and sense of momentum:

> I think two weeks after I'd started, or a month I think, it was announced that we were the greenest university in the UK - so obviously it was, you know, fantastic to be part of that and there was a real momentum around that announcement, and we had a lot of people from different parts of the university, you know, wanting to get involved…
>
> (Senior manager, MMU).

Leadership and innovation are not only recognised as useful in their own right but generate symbolic capital (Bourdieu & Wacquant, 1992) within an organisation and among peers and stakeholders:

> …we are clearly a leader and in the current pause on finance policy or whatever, it's even more important that the city's around projecting itself as the trusted lead body, and then we acquire whatever partners we can, universities … housing associations if they want to come in on it, and that sort of thing.
>
> (Executive, Nottingham).

This symbolic capital becomes an organisational asset that must be nurtured and maintained. So at Gentoo the internal and external standing achieved through actions to address environmental challenges was seen as part of the group's identity and a source of validation and recognition:

> I think we've got a really good reputation throughout the sector and regionally and nationally as being a green sort of organisation and I would hate to see that disappear.
>
> (Senior manager, Gentoo).

Visions of transition generate their own momentum, not only through investment in material assets such as solar panels but through reputation-building and public positioning. Such symbolic capital lends weight to new logics, enhancing their capacity to challenge embedded institutional logics.

6.3.3 Vision as entrepreneurship

At the more radical end of the scale, change is deliberately presented as divergent and a break with the past, as suggested by the literature on institutional entrepreneurship (Leblebici et al., 1991; Fligstein, 1997). At Gentoo this was presented almost as an epiphany. Descriptions of both the former and the current chief executive were associated with overturning usual business

practices. One frontline staff member described their first encounter with the chief executive:

> I've never been to a company where this happens before, but the, at the time the acting chief exec came down and did a speech at the induction for like ten of us, all different levels across the organisation, and part of his message was about the planet and how it is something that's really important to the group.

A senior executive, talking about the previous chief executive shortly after Gentoo announced 330 redundancies in late 2015, commented:

> …he's one of these blue sky thinkers, that, you know, might have a hundred ideas and twenty of them might work, but you go along with the whole hundred to see where, how far you can go before you decide that's not it. And this was quite a simple one. […] And he clearly was pushing at an open door here.

In the same vein, one of the leading lights of Gentoo Green described how their boss '…I was going to say accused, described me as being a disruption, a disruptive influence, on numerous occasions, because that's what it took'.

At Manchester Metropolitan University, an external stakeholder commented on how such an entrepreneurial culture can coexist with more traditional rationalities:

> …my perception at the time, really, was you had three, three slightly, erm, competing cultures […] Which was E. and his new sustainability team wanting to do something very radical and transformational, because they knew that they had - well, (a) because that's his style, but (b) they had a lot of ground to make up, because if you use it as the measure they were at 93 on the People and Planet league table and weren't doing terribly well. So they were pretty gung-ho. […] the then vice-chancellor was a great advocate of driving stuff like this forward, so they had top-level leadership, but in the middle they had quite a lot of people who for loads of really understandable reasons, were quite conservative in their approach to non-academic matters.

Opportunism can also be portrayed as entrepreneurship. Institutional direction is shaped by events, and by the availability of pots of money for projects. Success in attracting funding, according to one Gentoo Green employee, 'convinced the rest of the business that we can bring something to the party'. At Nottingham City Council, one professional recounted:

> I think in the first week I'd arrived the guy from housing rang me up and said, there's an opportunity for us, we can put a bid together for £100,000 from the Department of Health for a piece of work on health and

> housing, and what do you think? And I thought I'm here, it's easier, so we did it and we were successful in bringing in about £80,000…

An opportunity-driven approach can translate into a pragmatism in which a low carbon path is followed as and when circumstances allow: change is contingent on favourable external conditions. This can be rationalised as being savvy and agile:

> I think you have to have your priorities and stick with those, but then I think you can flex into areas where you've got the capacity to do it and it is in the interests of the city, and/or in the interests of the council itself, to do those, and that's when you start looking at some of the renewables projects, because it's making us money and we need the money as a council to be able to do other things […] they're still about benefiting the city but when it's in our interests and we've got the expertise.
>
> (Focus group participant, Nottingham).

While both divergence and opportunism can appear entrepreneurial to actors, the underlying logics are very different. In the first instance a change in strategic direction is sought: there is a deliberate attempt from the top to introduce an insurgent logic. Opportunism, by contrast, does not challenge embedded logics and involves limited reputational risk.

6.3.4 'The elephant that dare not speak its name'

The framings outlined above show how within the case study organisations, meanings are constructed in order to provide a rationale for action and to mobilise support and assent. What might be a threat to many - the risks and threats arising from overstepping planetary boundaries - can be reconfigured as an opportunity:

> …making climate change an opportunity I think was something Nottingham's embraced, and I think other authorities could potentially learn from that because obviously making something an opportunity and making it commercially viable as well as, you know, something positive to be doing, is where people sit up and take note.
>
> (Professional, Nottingham).

Benford and Snow (2000) examine how the construction of experience within particular sensemaking frameworks can provide an impetus for collective action, alongside the mobilisation of resources and spaces of political opportunity. Collective action frames, they argue, are generated by two

discursive processes: frame articulation and frame amplification. 'Making climate change an opportunity' is an example of frame articulation. Frame amplification, Benford and Snow argue, involves 'accenting and highlighting' particular beliefs and issues as more salient than others. Highlighting one issue requires the backgrounding of others. Amplification includes a process of silencing. Such processes are reinforced by affirmative responses from peers and publics:

> One thing I've tried not to portray is the traditional green image if I'm honest with you. I think that, in the research I've carried out and also the work I've carried out as well within the group… it's about moving away from that… traditional stereotype tree-hugger who wears sackcloth.
>
> (Professional, Gentoo).

One consequence is that actors, in advocating change, may weave together contrasting internal and public narratives. Different criteria are used to validate each story. One participant described how energy efficiency work was sold to colleagues as a cost-saving exercise:

> …people engage … because you, you're giving them an extra value, you're allowing them to take responsibility, ownership […] and that improvement might have pounds and pence importance to that person, but behind that is the carbon data we need. So it's that, it's decarbonisation by the back door. A dirty secret as it almost were, you know the elephant that dare not speak its name…
>
> (Senior manager, Gentoo).

There is a self-conscious fuzziness in this description, an artful avoidance of clarity that communicates change in such a way that a colleague or client can make sense of it on their own terms. They are asked to assent to new behaviours and actions without disturbing existing rationalities and priorities. Sense is generated through plausibility rather than accuracy (Weick, Sutcliffe & Obstfeld, 2005).

6.4 Presenting the possible: narratives of the future

Narratives, Thornton and colleagues (2012) argue, link theories and frames with practices, joining the symbolic and material. A narrative in this sense is both more and less than a plot or sequence of events. It is a linking device that has the power to propose a 'possible world', in Ricoeur's phrasing. But it need

not be an organisational myth or overarching metanarrative; it may form more of a 'narrative quest' (MacIntyre, 1981; Czarniawska, 1997), a testing out of possible meanings.

In my fieldwork I asked participants how they imagined a low carbon future: what might their city and workplace look like in ten or 15 years' time if their aspirations for environmental sustainability were achieved? Some interviewees hesitated to articulate responses, implying that 'the future' is not a dominant factor in the way these individuals construct and practice their work, even when their work is explicitly part of a future-oriented institutional strategy. But that hesitation may also be read as a recognition that narratives of the future are provisional and contingent on the way things turn out.

Interviewees' formulations of the future could be described as proto-narratives, initial attempts at articulating a story that links the expectation of a low carbon society with present experience. These proto-narratives rested on three broad pillars: values, practices and projects.

6.4.1 New values and understandings

One way of envisaging a low carbon future is as a changed set of values and priorities. Such imaginaries present a challenge to the current order, valorising new logics and alternative worldviews, but to differing degrees. For some this goes hand in hand with new technologies and a better quality of life; for others there is a more fundamental opposition to dominant rationalities. Consider these comments from two colleagues at MMU:

> …actually, we're not going to go backwards, we need to look at technology and innovation to keep moving forwards, but do it in a far more efficient low carbon way really, because I don't think as a society we'd accept to go backwards.
>
> (Senior manager, MMU).

> …when people hear the word living sustainably, I think what a lot of people think is that they want everybody in the world to live at current Western standards. And the reality is that that is not sustainable living. Sustainability is for everybody in the world to probably live at austerity

> Britain 1960s standards. So it actually means that all of us are going to need to take a step backwards.
>
> (Professional, MMU).

For the first, the changed outlook turns on resource use and technological innovation to maintain and improve living standards, while minimising environmental damage. For the second, it requires a redefinition of what is required to live a good life. Yet both participants supported and celebrated the same set of actions and initiatives as means to their advocated ends.

Another participant at MMU contrasted their idea of a low carbon future with the rationalities expressed in the city of Manchester's urban planning and economic development:

> Gosh, it would be magical, wouldn't it? […] just in terms of sustainability, it would be more greener spaces I guess in general, less traffic, and actually seeing that the city's taking this idea of cutting the carbon emissions, you know taking these ideas very seriously, seeing that we're not expanding the airport any more for example…
>
> (Operational staff, MMU).

More commonly, interviewees thought of changed understandings and values in terms of 'behaviour change' among the public at large or their clients and peers. Alternative values were individualised rather than being projected into public policy. Education, information, learning and awareness were key words. Some also talked in terms of personal responsibilities and ethical judgements:

> For me, it's the right thing to do because it's about the health of the planet, it's about reducing our reliance on a finite resource, really…
>
> (Executive, Nottingham).

Notions of responsibility stretched from individuals who might change their lifestyles to reduce carbon emissions - for instance, by becoming vegetarian - to ideals of community self-help and political direction from central government. This was frequently expressed as a desire that others, rather than the interviewee or the organisation they represented, should take responsibility:

> …an awareness of, I suppose, individual conscience so that part of the everyday choices that individual consumers make also contains reference to the downstream impact and the lifecycle impact of those

> choices. And that comes about through greater education I suppose of the general public in terms of the impacts that they have. And I think that, again, it's very easy to sit in an office and talk about that, but that certainly has as much, if not more, potential than solutions that can be driven by technology improvements.
>
> (Executive, Nottingham).

The story here, however scantily articulated, is one of a shift to new orders of worth (Boltanski & Thévenot, 2006), placing the health of the natural environment alongside existing priorities. In most cases the story of new values is one of supplementing rather than supplanting existing mindsets, at least within the institutional context. The general public might need to change and become more responsible, but there is less of a sense that acting more responsibly is a challenge within actors' own organisations.

6.4.2 Rethinking practices

A second set of stories turned on changes in practice, using a rethinking of everyday routines to signal a move towards a low carbon society. Some contrasted such representations of the future with stereotypical portraits of environmentalists as 'tree-huggers' - a form of discourse also observed by Hargreaves (2011, p. 89). One lamented the emphasis on the 'fear factor' in discussions of climate change, which were

> …all about starving polar bears and the north pole and, you know, small islands in the Maldives being washed out and things like that, it's all about the fear factor, whereas if people could see that that wind turbine is powering your hospital there, and that electricity is going there which means you can have more kit, I think it's just missed that messaging piece.
>
> (Senior manager, Gentoo).

A low carbon future involved a reorientation of 'how you live, how you move, how you eat', in the words of one Gentoo participant. New or emerging technologies would support changed practices on energy consumption, travel and commuting, and growing and sourcing food. Several expressed this in terms of an improved quality of life:

> Nottingham… I think it looks like a city with kind of renewables everywhere. So everyone's got solar panels. People are healthier because they're in warmer homes, and have better air quality. And less poverty.

> So happier, healthier, wealthier, less poverty, less poor. They're all linked up.
>
> (Senior manager, Nottingham).

> …one side it is the efficiency, but on the other side it's just about living a better life. […] people have sort of said to me, oh well this planet dying thing is a nonsense, it's just a natural thing, well I'm like so what though, surely we would still want to live a better life more sustainably because it just makes you feel better and it makes the planet a nicer place to live.
>
> (Senior manager, Gentoo).

Elements of this 'quality of life' narrative included green spaces, locally grown food and tree-planting, better urban design (including pedestrianised areas) and transport infrastructure to encourage walking and cycling. As one MMU participant put it: 'I see it as being a quite vibrant place if it was sustainable, that kind of goes hand in hand for me. That's the beauty of it.'

Resource use, unsurprisingly, featured strongly. Energy efficiency and efficient technologies, local energy generation (both to reduce dependency and to encourage renewable technologies) and a recognition of the limits of global resources were all mentioned by participants. Homes would be designed to higher environmental standards, electric vehicles would replace petrol and diesel, and emerging technologies such as battery storage would make solar and wind energy more efficient. Some interviewees tapped into popular discourses of 'smart cities':

> I was reading about the Edge building in Amsterdam, they've got this fantastic sort of smart building where occupants can book rooms via a mobile app, they can control the heating, lighting, and it's all sort of - I don't know, it just seems a smarter, more intelligent way to do things, I just think we're still kind of stuck in old school…
>
> (Senior manager, MMU).

Such narratives tend to be optimistic. If people can only find slightly different ways of doing what they are doing anyway the environmental problem will become manageable. There is little sense here of a threat to dominant logics, even if there is a reordering of priorities to emphasise more efficient practices.

6.4.3 Symbolic projects

A third set of stories articulated in interviews is rooted in symbolic projects, used as evidence of a direction of travel. Institutional and organisational studies pay close attention to the symbolic: the way objects and practices are deployed to create organisational realities (Friedland & Alford, 1991; Rip & Kemp, 1998; Glynn & Lounsbury, 2005; Fiss & Zajac, 2006). Alvesson (2002) says a symbol can be defined as an object – 'a word or statement, a kind of action or a material phenomenon' – that stands for more than the thing itself.

Hodson and Marvin (2013, p. 12) observe that '[t]here is a large gap between symbolic representations of a low carbon Britain and their material manifestations'. Projects and activities can be used as attempts to bridge that gap, reinforcing visions and themselves acting as symbols of progress. They form building blocks of organisational narratives.

Interviews with actors and external stakeholders revealed particular projects as symbolic either of organisations' intentions and achievements, or of actors' own aspirations. Projects were cited as evidence of institutional trajectories and constructed as representative of a broader transition from fossil fuel dependency.

Projects are often typified as examples of innovation, establishing the host organisation as a leader among peers and raising its status in the eyes of internal actors and external stakeholders. Innovation is associated with competitive advantage (Katz & Bradley, 2013) and attracts resources (Bouzarovski et al., 2013). At MMU, an interviewee described a process of identifying the next big idea to bring back and implement:

> …we were down in Milton Keynes about four, five weeks ago at the smarter travel event … we could see there that this whole idea of intelligent mobility is the big one now, it's an area that we're trying to get more and more involved in, and we're already starting to embed that in our emerging strategies going forward…
>
> (Professional, MMU).

This process of identifying innovation leads to a valorisation of newness and to heroic articulations of change:

> …the Dutch government were very very forward-thinking about five years ago, and they brought together an innovator, an engineer and a financier, and said we know what we're doing now for retrofit, but what do we need to be doing in three to five years' time in order to achieve our targets? Go away and come up with some ideas, and they put a budget aside and said go and work it out, and they've come up with this model called Energiesprong, and there's some great stuff if you want to look it up on YouTube […] And it was, it needs to be net zero after energy, after retrofit, so net zero on the meter, it needs to pay for itself within 25 years with the energy savings and investment, it needs to create a four or five per cent return, it needs to be done in less than ten days, and they basically had all these performance criteria […] and they went out and they got four industry partners to come in and innovate and create the solutions, and now some of them are doing it in one day…
>
> (Senior manager, Nottingham).

Symbolic representations of a project can be diluted by practical experience, but this does not necessarily limit their symbolic utility. Passivhaus is a model of housing design intended to reduce energy costs to near zero by combining highly effective thermal insulation with exceptional airtightness, and Gentoo built an estate of bungalows to Passivhaus standards. One interviewee held up Passivhaus as a symbol of innovation and energy efficiency, while simultaneously revealing that the development had not achieved the promised results:

> …the Passivhaus development at Houghton, then that is absolutely the cutting edge […] and I know before the scheme was developed I think the general spiel from a Passivhaus perspective was you know, you can heat your property with the light of a candle or the heat of a candle or whatever, but I think the bills were purported to be, they'll be as low as eighty quid a year or whatever, it hasn't quite been that, it's probably been twice as much, but that's still significantly cheap, so having, having that package, you know that we've been able to offer customers, is absolutely fantastic from their wellbeing point of view as well.
>
> (Senior manager, Gentoo).

Symbolic projects can present an organisation as being ahead of the pack and attract respect from peers, establishing a self-reinforcing cycle of innovation and validation. At Gentoo, one frontline worker commented:

> I suppose the major one that we often talk about is the PV scheme. I think it's a kind of a landmark process, a landmark scheme within the housing sector. I don't think anyone's quite reached what we have achieved within the whole sector … we've installed four thousand properties, installed PV on four thousand properties so far and I think

> that's a take-up rate of around 73%. […] we're hoping to get our five thousandth system by the end of the year…
>
> (Operational staff, Gentoo).

For the staff deployed to them, symbolic projects may become intertwined with personal hopes and ambitions. Projects become a hook on which actors hang their hopes of professional development and align them with their perceptions of institutional change. Carbon Literacy, a project designed to help students and staff at MMU understand the need for environmental action, was personally and institutionally totemic for one interviewee:

> I'd really like us to come to that point in three years' time when we are delivering to nine thousand students. […] I'd like almost to have a little carbon literacy centre and having - because what I've seen as well [is] that it opens up so many doors for students to get involved with this…
>
> (Operational staff, MMU).

Projects are also constructed as symbolic of institutions' positioning and direction. Nottingham City Council's energy retail operation, Robin Hood Energy, was described in terms that echoed the council's stated ambition to be self-sufficient in energy:

> I think Robin Hood Energy is like saying right, we're going to take control here and deliver something which means people aren't at the mercy of these giants … you know we're taking control.
>
> (Professional, Nottingham).

A project or product can also, as Verganti and Öberg (2013) observe, gain acceptance through the 'radical innovation of product meanings'. By reconceptualising or reimagining an artefact, the obsolete or unfashionable may be given new life. Nottingham's incinerator is a case in point. Opened in the 1970s in order to generate heat by burning low-grade coal from the Nottinghamshire coalfield, it has now become a symbol of a low carbon economy, transforming 'waste' (of no value) into (high value) 'energy'.

6.4.4 Coherence and turmoil

While Thornton et al. (2012) discuss theories as ways of creating coherence, they also show (p.156) how logics can arise from 'new narratives' emerging from practice. Narratives, they suggest, 'emerge through a recursive process of

sensemaking, shaped by events and practices, and sensegiving, shaped by theories and frames'.

Taking institutions' documents and the data from fieldwork together, it is possible to identify low carbon futures as a challenge to institutional logics that may be met either by stressing the need for change - as in Gentoo's public positioning and in MMU's strategy - or by emphasising continuity and opportunity, as in Nottingham City Council's documentation and in the ideas of the future put forward by the majority of interviewees. But at this prefigurative stage when visions are articulated, even when they have been through a process of formation over several years as at MMU, the theories and narratives underpinning them are far from fully developed.

These nascent narratives contain the possibility of new institutional logics, but the environmental logics represented in institutional documentation and actors' own discourses are fuzzy, both in their scope and in their application. The 'narrative quest' is conducted through action and practice. Ricoeur (1988) develops his theory of emplotment, or sensemaking through storying, out of the discordance arising from the intrusion of 'possible worlds'. This sense of turmoil is an important counterweight to the relatively tidy categories posited by the theory of institutional logics. The next chapter seeks to wade further into that turmoil, exploring how what Geels (2014) calls 'regime resistance' provokes attempts to come to terms with discordance.

Chapter 7: Negotiating the possible

7.1 Confronting dilemmas

This chapter considers how progress towards a low carbon future is constrained in the case study institutions. It examines this through the lens of 'configuration', the second stage of the hermeneutic cycle. In Chapter 4 (section 3) I highlighted the characteristic quality of configuration, in Ricoeur's hermeneutics, as being the attempt to retrieve concordance from discordance. A vision of a low carbon future is not necessarily compatible with the logic of an institution as inscribed in rules, practices and narratives. Actors are forced into a process of sensemaking, in relation both to the institution's direction and to their own roles. I describe this stage as the negotiation of the possible.

From the institutional logics perspective this is a negotiation with the 'prevailing logic' (Thornton et al., 2012, p. 100); in transition scholarship it is encapsulated in the concept of 'regime resistance' (Geels, 2014), which can be identified where political or institutional action to control carbon emissions is deemed 'risky' (Rutland & Aylett, 2008). It has also been described in terms of 'sociotechnical translation' (Smith, 2007), where sociotechnical niches are created in opposition to incumbent regimes.

When institutions advance a vision of the future that challenges current practices and priorities, or where there are significant gaps between expectation and experience, this may prompt a sense of dilemma (Bevir & Rhodes, 2005) or *kairos* - a reflective and potentially transformative moment - (Papastephanou, 2014) in an organisation and among actors. Actors and organisations must respond, and their responses can be seen as a process of adjustment, or 'configuration' in hermeneutic terms, between the promise of a prefigured future and the actuality of a discordant present.

Configuration is more than a pragmatic response to a problem. It is an attempt to make sense of and navigate difficulty through recourse to actors' knowledge and beliefs about the world. The case study evidence, I argue, shows that actors in organisations, like readers of texts, acknowledge the

‘primacy of concordance over discordance’ (Ricoeur, 1991, p. 22). Narrating, or making sense of, the discordant features of life involves seeking ‘to rid them of their paralysing effect and to make them productive’ (Ricoeur, 1988, p. 138).

An examination of interview and focus group data gives rise to three headline observations about this process, which I address in subsequent sections of this chapter. First, progress towards environmental goals is provisional and open to interpretation through the filter of prevailing logics. This fragility is evident not only in actors’ responses to unfulfilled expectations, but also in the way they identify and interpret success.

Second, reflecting the final section of the previous chapter, configuration takes place through a continuous process of sensemaking, testing different propositions about organisational purposes and direction. Institutional myths are generated and stories told to marshal discordant data and bolster narratives of progress or constraint. Actors’ ‘horizons of expectation’ (Ricoeur, 1988) contract, emphasising immediate concerns and drawing on ‘logics of appropriateness’ (March & Olsen, 1989) while backgrounding the potential consequences of insufficient action to address longer-term challenges.

Third, there is an interplay and contestation between locally situated agency and institutional power at different levels - exercised by the state, within institutional fields, and at an organisational scale. This contestation can be expressed as regime resistance. Power (see Chapter 3, section 2.3) is entailed in institutions’ core logics, and exercised in the practices and processes through which organisations adapt to unfulfilled expectations (Thornton et al., 2012; Friedland et al., 2014).

The data suggest three broad areas in which this contestation takes place. One is through the dynamics of politics and policy, hierarchies and layers of authority. Next is through the evolution and inertia of sociotechnical and institutional systems: energy systems, technologies and markets. Lastly, contestation can be observed in mundane working practices and the dynamics of everyday life.

These themes are discussed in turn. In this and the following chapter I rely primarily on interview and focus group data. While documentary data can

show how organisations prefigure the future and interpret changes they have initiated, the sifting of discordant information and the processes of adaptation that result are undertaken by actors, individually and in collectives. Institutions' accounts of change prefigured are balanced by actors' accounts of change constrained, and interpreted to generate modified narratives of what has happened and projections of what could or should happen.

7.2 Negotiating possibilities: provisional futures

7.2.1 Persistence and provisionality

Stories of change have unexpected twists and turns. Hopes are dashed and envisaged futures do not materialise. But in the three cases examined, the closer a vision of change is to an organisation's prevailing institutional logic, the more likely the organisation is to persist in implementing it; and the further it is from the core logic, the more provisional the accounts of change appear to be.

For both Nottingham City Council and Gentoo, home improvements have been a major focus of attention. In Nottingham residential properties were fitted with solar panels to generate energy, or with external cladding to reduce heat loss. Similar initiatives were undertaken in Sunderland, as well as the 'Boiler on Prescription' project designed to show how energy efficiency improvements could reduce healthcare costs. These schemes directly fitted the organisations' historic purposes of advancing social welfare and improving local communities' quality of life.

Projects that save money also have a clear rationale in taxpayer-funded organisations. So energy efficiency measures, whether in local residents' homes or in the organisations' own buildings, were seen as ways of protecting organisations' assets and preventing waste (see Chapter 6, section 3.1). Energy efficiency aligned with financial efficiency, as well as meeting national or institutional drives to reduce carbon emissions.

In Nottingham, where the local authority still part-owns the local bus company, switching from diesel to electric buses aligned both with the

authority's desire to improve air quality and its efforts to reduce emissions, as well as with the traditional logic of public service provision. At MMU, the desire to reconfigure the university campus from seven sites to three provided an opportunity to align the university's expansionist ambitions with a set of stylish new premises built to high environmental standards.

Such projects do not threaten institutions' core logics: they have institutional rationales other than environmental sustainability. Other initiatives raise potential conflicts between environmental impact and benefits to the institution. In these cases it is less comfortable to be both an agent of change and an anchor of stability. A 'configuration' is necessary: actors must find a way to deal with the contradiction between expectations and experience. In doing so they call on prevailing institutional logics rather than insurgent or novel ones.

Three examples illustrate the point. At MMU, the university's expansion meant that net carbon emissions actually increased between 2013/14 and 2014/15, while at the same time it was winning awards for its environmental performance. In response, the university declared a need 'to revisit some of our targets' (see Chapter 6, section 2.1). Given a tension between expansion and carbon reduction, the approach to carbon reduction was problematised rather than the university's development.

> …we're not going to say we're not going to build that building because it's going to increase our carbon. […] But we'll build the building and we'll try and make sure that it is as smart as possible and it embeds environmental sustainability within its building, and we minimise the impact as much as possible, but I don't think it will stop us, you know, building the building.
>
> (Senior manager, MMU).

In Nottingham, a key element of the local authority's carbon reduction strategy is to expand its incinerator-powered district heat network. This is less carbon-intensive than heating homes and offices with gas boilers and it avoids sending waste to landfill (Jamasb & Nepal, 2010), but as a form of energy generation has attracted criticism because it creates a market for burning waste rather than reusing or recycling it (Levidow & Upham, 2016). However, the local authority's historic debts on the plant (totalling £13m in 2016) mean that it needs to run the incinerator at a profit for many more years to recoup its costs.

To do this will require further investment in and expansion of the heat network. This has the potential to lock the authority into a cycle of reinvestment:

> I think we need to spend about £15 million on the existing heat station anyway in the relatively near future, so … if we've got to spend that anyway to keep what we've currently got working, it's probably worth spending £35 million to build new all-singing, all-dancing stuff that's got the capacity to expand the network.
>
> (Operational staff, Nottingham).

What may be an environmental success story in current circumstances - waste-to-energy is less carbon intensive than burning natural gas or coal - may look different in ten or 20 years' time, when the city is still dependent on the heat network. However, failing to identify the heat network as an environmental success story carries a cost. That cost is both financial - having to write off sunk capital and the opportunity cost of not winning new business or being able to tap into funding streams - and reputational, in that Nottingham's identity and branding as an energy self-sufficient, low carbon city is predicated on the promotion of the heat network as a 'green' technology aligned with current UK government priorities.

At Gentoo, an ambitious approach to environmental progress led the organisation to acquire Romag, a company manufacturing photovoltaic panels. It was thought that this would enable it both to expand its own programme of installations at lower cost and to make inroads into the commercial solar market. In 2015 the organisation's financial model had to be reworked after the UK government changed the rules on housing finance, with the result that 330 members of staff were made redundant. The manufacturing business was sold after board members labelled it a 'distraction' from the organisation's core activities:

> …we've given the HCA [Homes and Communities Agency] an undertaking that we will be the best social housing provider that we can by protecting our assets, and that includes … the built form, our residents and their communities - make them safe, and get ourselves rid of the distractions which are Romag and construction.
>
> (Executive, Gentoo).

Each organisation has valid institutional reasons for making its choices. However, these choices have the potential to undermine the rationale for change implicit in organisations' aspirations for a sustainable future. MMU is

faced with a paradox: it wishes to advance an agenda of educating students about sustainability, to prepare them for a marketplace where such skills will command a premium, but to do that it must develop in a way that may compromise its aspirations for carbon reduction. Nottingham City Council's paradox is that by framing climate change as an economic opportunity and emphasising the commercialisation of its own services, it becomes committed to a form of energy generation that undermines progress towards a circular or zero-waste economy, and is more carbon-intensive than renewable alternatives. Gentoo's rationale for change is eroded when initiatives designed to achieve environmental ends (and therefore benefit Gentoo's residents) come at a cost that may put its core activities of social housing at risk.

In each case, actors are put in a position of highlighting either discordance or concordance in their interpretation of events. A sense of concordance enables setbacks and dissonances to be worked around, at least in the short term. In contexts where change and progress is fragile, interview evidence suggests short-term or action-driven sensemaking (Weick, 1995, p.156) may command a premium, enabling actors to get on with the job in hand.

7.2.2 Provisional futures: actors' experiences

Interviews with staff and stakeholders at the three organisations confirmed a constant need to resolve discordance. The difficulties of seeing change through, and disappointment with the results even of apparently successful initiatives, were evident at each organisation despite the different circumstances at each one.

At MMU, an apparently thriving organisation with a continued public commitment to environmental sustainability, interviewees highlighted the contrast between technological innovation and organisational practice:

> …if we have actually now reduced the size of our estate and invested £300 million or so in some fantastic new buildings, I would expect us to have made some significant inroads into our carbon reduction commitment. And I don't think we're on track to meet what our commitments are. And that might be because they are very good buildings, but we're using them a lot longer, and we haven't got around

> to the point yet where we're being smart enough and not enough central control in saying when those buildings are going to be open…
>
> (Executive, MMU).

> I remember [the former vice-chancellor] talking about the zero carbon building of the business school and then assuming that when you put people in it, it would be zero carbon. And it ain't - quite the opposite. I remember an architect once saying to me, the best way to quickly get a Code 6 building to Code 4 is just to put some people in it […] behaviour change is a hurdle when they think they've specified something as zero carbon and then messy humans come and start and plugging kettles in and heaters…
>
> (External stakeholder, MMU).

Nottingham City Council faces greater financial challenges than MMU, as a result of central government austerity programmes. This was reflected in many interviews, and was seen to directly affect environmental programmes and ambitions. In one case an interviewee was about to be made redundant as a result:

> …my job role's about to be cut, so my funding's soon going, it's ending in September. […] I'm actually writing a case at the moment, as we speak. I'm writing a case and also having interviews for other jobs as we speak because I need to be able to pay my mortgage…
>
> (Operational staff, Nottingham).

Funding constraints do not simply put staff and jobs at risk, but also result in the loss of expertise and capacity. The consequence is that ambitions for change are simultaneously articulated and undermined:

> …not only are you trying to be a game changer as an organisation, you're trying to do it at a time when you've got fewer people and you've certainly got fewer of the best people, the most experienced people, with the knowledge and, I suppose, the history if you like of some of this stuff, so that's pretty important. So if you want local authorities to be agents of change you can't do that in a period of downsizing very very easily.
>
> (Focus group participant, Nottingham).

One interviewee talked of receiving funding for a carbon reduction project in the NHS. The interviewee described the project as a 'shining example' of combining environmental action with public health goals, but it was shelved as part of the reorganisation of public health responsibilities from the NHS to local government. Change was prefigured, but not followed through:

> …the whole system changed, we all got reorganised, and it's like pushing the ball up the hill again.
>
> (Professional, Nottingham).

At Gentoo, where the organisation was dealing with a full-blown financial crisis by the time fieldwork began, the fragility of change was becoming self-evident. The Gentoo Green operation, which had consisted of 26 staff at its peak, had been reduced to one person in charge of the Planet Smart programme and a small team handling solar PV installations and administration of feed-in tariff payments by the time of the final focus group discussion. Expectations had to be re-examined in the face of the loss of personnel and expertise:

> …there's only me and [another staff member] now that has the knowledge about the technical systems and stuff from a green point of view, whereas before I had quite a few people in the team who were very technical in terms of product trials. So I think the level of expertise has left.
>
> (Focus group participant, Gentoo).

That re-examination might lead to new or 'smarter' solutions, but equally could mean abandoning work deemed unaffordable:

> …you've now got to come with these hard questions and say sorry, but some of you are not going to have a job because we really can't afford you - unless you can come up with a solution to work smarter whereby all of these things or some of these things can actually create an income which will actually pay for you to do them…
>
> (Executive, Gentoo).

By the time the last interviews were conducted, this was also becoming apparent to outsiders, with external stakeholders commenting on the loss of key contacts and the lower public profile Gentoo now had. At the same time, actors within Gentoo were proving remarkably persistent in holding on to a narrative of organisational change that appeared to have been frustrated. I will explore this further in Chapter 8.

7.3 Making more sense of possibility

7.3.1 Reduced horizons

As actors deal with discordance between prefigured futures and experienced reality, they tell stories and offer explanations that make sense of the world. In doing so they generate or reinforce 'logics of appropriateness' (March & Olsen, 1989) for their actions and for the situations in which they find themselves.

This sensemaking process is characterised by a form of spatial and temporal foreshortening, in which the most proximate concerns are given heightened attention. Actors' 'horizons of expectation' (Ricoeur, 1988) are reduced, emphasising the consequences of the requirements of daily institutional life while backgrounding the potential impacts of longer-term issues. The process of emplotment - of piecing together disparate events into a whole - can foreground the most immediate issues as keys to the wider story.

This contrast between the immediate and the global was summarised succinctly by one interviewee:

> It's the classic thing, why the fuck should we be bothered about this polar bear when we're not going to be able to fulfil our statutory duties?
>
> (External stakeholder, MMU).

The comment highlights how logics of appropriateness are supported by workplace myths, in the sense of stories used to generate foundational meanings (Bowles, 1989). Rather than creating commonalities between the plight of the polar bear and those who might suffer because an organisation cannot fulfil its legal requirements, the myth serves an 'othering' function (Staeheli, 2011), building a border between environmental action and organisational interests. A story is generated in which certain forms of action are located beyond the organisation's purview. As part of its environmental work, Gentoo supported the Nuru Fund, an initiative in sub-Saharan Africa to replace kerosene lamps with solar lighting:

> …people are quite challenged at the thought of it and they think well, why should we be helping somebody in Africa to have a light when somebody down the road in Sunderland hasn't got enough food to eat or

> is homeless, and [they] don't really see the bigger benefit in why we should be trying to help people with low carbon solutions…
>
> (Operational staff, Gentoo).

This construction of what is appropriate at an organisational level is not confined to involvement in global environmental issues. It also manifests itself in the creation of professional dividing lines. One of Gentoo Green's challenges in advocating its Boiler on Prescription programme was to convince health professionals that the consequences of cold homes had anything to do with them:

> …why would you want to rock up in my world and start talking about sustainability when I'm a doctor, what's that all about?
>
> (Operational staff, Gentoo).

Decisions against environmental action may be rationalised through appeals to pre-existing logics of appropriateness, as a discussion of the difficulties of experimenting with more energy-efficient construction methods in Nottingham revealed:

> Interviewee: They'll do different construction methods so long as there's bricks on the outside. Which takes away the benefit of doing the other construction methods quite often. And we are looking at whether…
>
> Interviewer: So what's the thing with bricks?
>
> Interviewee: It's the Nottingham brick, the red brick. Nottingham red brick. […] you know, Victorian brick properties are one of the most sustainable ones we have because they've lasted the longest. So people want to live in them. But yeah, in terms of the environmental performance of them, they're not great and they're not easy to retrofit, but there is a real desire to not go and cover up all of the brick in Nottingham.

In this context the issue is not whether or not to improve the city's housing. It is that whatever action is taken must fit within a bigger story of local (and organisational) identity symbolised by the 'Nottingham brick'.

7.3.2 Making sense of the institution

While actors make sense of their own status and roles through myths and personal stories of appropriateness, they also negotiate institutional identity. This too tends to emphasise institutions' core logics, problematising

environmental action that does not appear to fit. Sometimes this happens at a formal level, where a process of critique and adjustment is applied that modifies an organisation's environmental goals and priorities. At Gentoo, for example, senior staff re-examined the organisation's environmental positioning and public profile in the light of financial and regulatory pressure:

> …we will be reviewing how we describe ourselves as a business. People over the years I think have thought that we've kind of pitched ourselves too high in terms of what we say we are. At heart we're a housing association and a housing developer, and how we've described ourselves previously has not been as clear.
>
> (Senior manager, Gentoo).

There was also a broader questioning of how the organisation framed its environmental work, as executives sought to attach it more closely to the organisation's immediate priorities:

> …yes we can be carbon neutral by buying £1 a tonne carbon in China, but that doesn't ethically sit with the group, so what do we mean by being carbon neutral? I think we need to go back and really understand what that means and I think generally a lot of that is up for grabs in terms of the whole concept.
>
> (Executive, Gentoo).

This critique at a formal organisational level is often accompanied by a more subtle critique by individual actors that serves to undermine the credibility or persuasiveness of an environmental message. A senior executive at Nottingham City Council compared 'green' goals and visions with religious zealotry, commenting:

> …to a certain extent low carbon economies have become, almost there's a religious fervour about them, isn't there, which switches a lot of people off as well as turns a lot of people on.
>
> (Executive, Nottingham).

In Ricoeur's terms, the world of the text may have the capacity to transform the world of the reader, but in the process of negotiating possibilities the reader also has the capacity to re-read the text in ways that deprive it of its power. Local government doesn't do religion, so by framing an environmental logic as a religious or 'inspired' order of worth (Boltanski & Thévenot, 2006), it can be deprived of its efficacy. Two interviewees, for example, were dismissive of the Nottingham Declaration, the initiative held up by the city council as evidence of

its national leadership on environmental sustainability. One former city council employee said:

> I did get people … phone up and say, I've been told by councillors that we should be signing this Nottingham document, declaration - what is it? What do we have to do? Yeah, it doesn't matter, it's just a piece of paper, here, sign it. It means nothing.

Here, too, logics of appropriateness are established and reinforced. It is considered inappropriate for a city council to act like a missionary society, persuading nonbelievers to see the light. Similarly, it is considered inappropriate for a housing organisation to act like a campaigning NGO. Part of the process of negotiation is an attempt to restore an established sense of institutional purpose and the behaviours that fit that purpose: discordance is muted by bringing actions back under the umbrella of established logics.

7.3.3 Making sense of the future

There is a strong temporal aspect to sensemaking within institutions. A future that is too different or distant from the present tends to be pushed away in favour of visions that align with current values. At Gentoo, one interviewee was asked to describe their idea of a low carbon future:

> If we look out the window I think it's going to look similar in twenty years' time to what we're looking at now. Though if you look closer out there … I think it's probably going to be more cars, however, if you see the likes of BMW and Audi and Volkswagen and all the rest of it, who are producing engines with lower emissions, so you're not losing any of the power of the fab cars that everybody wants, but they've just got a better engine in there, which is brilliant.
>
> (Operational staff, Gentoo).

An interviewee at MMU similarly highlighted the issue of transport as an example of how people considered the future:

> I think what a lot of people struggle with, particularly transport, is the horizon is like five, ten, fifteen years ahead, and people are like, well what am I going to do tomorrow? What am I going to do in three months' time? And I think that's where … people struggle to foresee and look that far ahead, which is a tough one.
>
> (Professional, MMU).

Within such curtailed horizons, it is hard for actors or institutions to radically reimagine their roles. The possibility of a shift in status function implied in the formulation of an institutional vision for change is undermined when actors' horizons of expectation are limited to the next month or the next year. One interviewee contrasted this with the more radical repositioning of successful private companies:

> So when you look at corporations or organisations where their adoption of sustainability becomes a proper game-changer, you know sort of when Xerox say we don't sell photocopiers any more, then I think, you know, they [MMU] haven't done that sort of big thinking, "we now stand for this".

'We now stand for this' could be described as an expression in an institutional context of the third stage of the hermeneutic cycle, that of refiguration. The discordance of current realities (in the example of Xerox, the obsolescence of the traditional photocopier) pushes an organisation towards a new understanding and direction.

7.4 Constrained possibilities: dealing with discordance

While Ricoeur's hermeneutic analysis tends to be concerned with the interpretations and configurations generated by the self or individual actor, in an institutional context such narrations are produced both by actors and by the organisational structures and networks they inhabit (Gabriel, 2000). The sensemaking processes at work as actors navigate fragile and discordant changes are also influenced by the unequal but shifting power relations embedded in institutions (Lowndes & Roberts, 2013). Interpretation, in an institutional context, is in constant conversation with power: the powers exercised by actors, and the powers of institutions and political entities that make themselves felt through 'regime resistance'. I have discussed my approach to questions of power in Chapter 3 (sections 3.1, 3.2 and 4).

The case study data in this chapter reveal how institutional power structures the process of negotiating new possibilities. Returning to Ricoeur, one might say that the projected future world of the prefigurative 'text' or strategy is configured in the world of the 'reader' or institutionally situated actor in the

context of a discordant reality mediated through power relations. I consider these dynamics, and the way their sedimentation in materials and practices constrains the negotiation of possibilities, under three headings: policy and governance; sociotechnical and institutional systems; and practices, in the sense of modes of behaviour that constrain institutional change.

7.4.1 Discordance in policy and governance

State power, state inaction

While there is an extensive literature on the 'hollowing-out' of the state and shrinking of government (Rhodes, 1997; Bulkeley, 2005), it was clear from the interview data that national government and its regulatory and funding agencies - the organisations active at an institutional field level - continued to play a central role in institutional stasis and change. This could be both enabling, through legislation, policy and funding programmes, and disabling, through changes in priorities and reductions in funding. In transition processes it could be a source of discordance, but also a means through which actors could make sense of what they were doing.

This sense of being pushed or pulled by the central state was felt by actors at executive levels in all three case studies. At MMU, an interviewee highlighted the importance of HEFCE in driving the higher education sector's adoption of carbon reduction strategies in the mid-2000s.

> …HEFCE came in with almost like a regulatory stance on it, because they had a lot more power in those days than they do now, so they were able to determine and dictate, and […] funding streams relating to estates were being prioritised if they had sound environmental credentials associated with them.
>
> (Executive, MMU).

For the most part, though, participants saw government intervention in a negative light, constraining their efforts to pursue environmental goals. Actors were frustrated by continual changes in policy. Such changes increased risks - it 'just burns your fingers very very quickly' as a Nottingham interviewee put it - and prevented effective planning:

> …different initiatives like I say, ECO [Energy Company Obligation] and carbon trading and all bloody sorts, they sort of come and they go, and when you're looking at a lot of properties there's quite a long lead-in period, doing a lot of the things that we would need to do, and by the time you get a scheme worked up the subsidy's disappeared or it's a different regime and then you can't.
>
> (Executive, Gentoo).

Some viewed the attitude of central government to environmental programmes in terms of political antagonism, suggesting a policy choice had been made to downgrade environmental issues. Three interviewees referred disparagingly to former Prime Minister David Cameron's pledge (Cameron, 2010) that his Coalition administration would be the 'greenest government ever'. Others, more pragmatically, suggested policy uncertainty could be mitigated by offers of capital funding:

> They're much keener on capital than they are on revenue, they'll come up with the capital every now and again to do schemes, we're good at writing bids, we'll grab whoever's money's going.
>
> (Executive, Nottingham).

Actors viewed the disabling role of central government - both through policy changes and through the absence of supportive policies and programmes - as an explanation for the difficulties they experienced in advancing environmental programmes. One interviewee referred to the effect of staff reductions at the former Department for Energy and Climate Change:

> Half the people that we knew at DECC aren't there anymore. So our relationship with that department is not like it used to be.
>
> (Senior manager, Gentoo).

This dissonance between the locality and the state is a familiar theme in transition literature. Gibbs (2000, p. 17) describes the 'continual failure of central government to seize the initiative' in environmental policymaking; Hodson, Marvin, and Bulkeley (2013) note a 'missing organisational context' for coordinating the reconfiguration of urban energy systems; and Eadson (2016) observes that state attempts at energy-carbon restructuring can degenerate into a 'disordered' approach of government-by-project.

The absence of policies and regulations to drive change at an organisational scale was viewed not as a freedom from restriction, allowing local leaders to

advance environmental agendas, but as a barrier to action. One interviewee in Nottingham commented that 'if national policy was really driving sustainable development … I would be in a position where I would be being encouraged to do a lot of the work that I do, rather than me having to push to get anything on the agenda at all'. At Gentoo, an external stakeholder observed:

> …if there isn't a push from government then people won't do it, and again the government has been very much about trying to be regulation-light on all sorts of things, which is good up to a point, but if there isn't something there that says you must do it, then it won't get done…

In such cases actors tend to picture themselves as embattled entrepreneurs or activists, struggling against a tide of unsupportive policy and bureaucratic impassivity. The narrative of environmental progress has been halted because of action or inaction by external agents exercising the power of permission or obstruction. The environmental story has run into a more powerful story of government intransigence or neglect. Through such narration, actors can preserve a sense of their own organisation's environmental integrity while explaining or 'rendering sensible' discordant outcomes (Weick, 1995, p. 11).

Across the three case studies, the state has been depicted at various times both as an ally and as an obstacle. Actors draw on different state actions and policies to justify and make sense of the twists and turns of their own transition journeys.

Interinstitutional dynamics

At an interinstitutional level, too, actors can explain the discordance between vision and achievements by externalising the problem. Where a lack of progress can be attributed to interinstitutional conflicts and incompatibilities, changes cannot be achieved without some degree of power struggle between institutions. In Nottingham, an external stakeholder recounted how competition and non-cooperation between institutions was highlighted during a study trip to Copenhagen:

> I think one of the major things that left an impression upon me, when they talked about how they organise their district heating schemes, and then we looked at each other, there must have been about a dozen of us from England, and we were all looking puzzled, saying I don't think we

> could really do this like that, how can we do it? And then somebody from Copenhagen, one of the people who we were talking to, just turned round and said, well, don't you do things for the common good?

At Gentoo, interviewees described relations with the local authority in terms of a 'tension, a rub, between our culture and their culture'. They also noticed low-key interinstitutional conflict at central government level:

> …we went down to DECC, but DECC wouldn't speak to their counterparts in the housing side, in the health side of things, even though there might have been a floor between them in their offices, they didn't speak to each other.
>
> (Senior manager, Gentoo).

At an interinstitutional level, power dynamics work themselves out in stalemates between organisations, in which none will make the first move because of the perceived burden of doing so: the first mover bears the costs, but another organisation reaps the rewards. The prefigured strategy or goal is configured in practice as a rational avoidance of risk coupled with an externalisation of responsibility, as this discussion of the health benefits of energy efficiency from the Nottingham focus group illustrates:

> Participant 1: There's almost two costs to it, aren't there? There's the cost that society bears by not dealing with it, and then there's the bottom line cost which is real NHS bottom line accounts, which is the one we are trying to get to …
>
> Participant 2: Yeah. Because the cost to society, who pays for that? That's the problem.
>
> Participant 1: Yes.
>
> Participant 2: It's the same with carbon of course.
>
> Participant 1: Yes. Who puts the money in and who ultimately is the beneficiary, and who benefits along the way? So it seems to me like the NHS is really struggling to see the bigger picture…

While there are broader welfare economics issues here of the distribution of societal costs and benefits and who foots the bill and how (North, 1990; Ostrom, 2007), the particular interest in this study is the role such dilemmas play in generating unfulfilled expectations that force actors into a process of explanation and sensemaking. In the quest for coherence, conflicting experiences and expectations can be rationalised as the effects of power exercised by external actors.

Organisational dynamics

While the power dynamics of national policy and interinstitutional relations can be handled without troubling actors' understandings of their own organisation's direction, the operation of local hierarchies and lines of management may more directly disturb narratives of transition. By identifying influencers who align with or oppose their visions, actors can interpret their organisational situations either to bolster their environmental narratives or to explain discordance.

At MMU, for example, one interviewee commented on how the university's environmental goals aligned with students' agency as consumers. The Student Union had actively lobbied on environmental sustainability, so the university was obliged to listen:

> …the Students' Union have been very supportive and vocal, which is great and which is what's necessary, and, let's be honest, with the current tuition fees there's an argument to be made that students are now consumers and so they expect a certain thing of the university, so they have a hell of a lot of power, and I think they're only just coming to realise how much power they have.
>
> (Professional, MMU).

Another interviewee, however, expressed a view of university hierarchies as an obstacle to environmental progress:

> …if the deputy vice-chancellor or vice-chancellor doesn't want a particular initiative then there's not a lot you can do about it.
>
> (Executive, MMU).

At Nottingham City Council, similarly, interviewees interpreted organisational power dynamics both as supportive and as potentially problematic. Councillors' political agenda to improve social welfare was seen as one that could be closely aligned with environmental goals:

> The driver on fuel poverty is coming directly from our politicians, that's something that they're really, really bothered about, and in all their manifesto promises and stuff. That's coming straight from them.
>
> (Senior manager, Nottingham).

The city council's economic agenda, however, was trickier to align. In the organisational pecking order, economic growth outweighed the benefits of a low carbon economy:

> …what we could do is say right, no diesel cars inside the city centre. Terrible for air pollution, we're just not doing it. But then everyone would just go and drive to Derby instead and then they're not spending their money in the city. And it's always a constant battle I think. It's always a, you know, a quid pro quo.
>
> (Focus group participant, Nottingham).

Another interviewee pointed out that while the city council's environmental goal was to improve air quality and reduce the number of vehicles congesting the city, the council was also trying to maximise use of its car parks because of the need to increase income to offset spending cuts. The result was 'a whole load of … promotional activity encouraging people to bring their cars into Nottingham'. While maximising income for residents through energy efficiency measures and for the council through promoting district heating both accord with the authority's environmental policies of self-sufficiency and social welfare, maximising income through car parking threatens the coherence of the environmental narrative.

7.4.2 Discordance in sociotechnical and institutional systems

While discordance is obviously associated with policy and politics, where agency and resistance can be identified, it is also associated with the persistence of sociotechnical systems such as energy supply and consumption, and institutional systems such as markets and organisational hierarchies. This is often manifest in the form of inertia or lock-in: sociotechnical and institutional configurations gather constellations of interests devoted to their coordination and stability (Geels, 2004) - although, as Allen notes (2008, 2011) such 'relaxed geometries of power' are fluid and contingent as well as durable. In an arena where change has been prefigured, the continuity of such systems can act as a drag, delaying or preventing progress towards environmental goals. Actors must therefore interpret their expectations of change to accommodate the experience of stasis.

Even when change appears to be accomplished in ways that circumvent or overcome institutional lock-in, the case studies suggest that the degree of change is insufficient to satisfy the initial vision. Here too a process of interpretation is required. At MMU, the move from seven clusters of old

buildings to two central campuses helped the university avoid ‘a massive retrofit challenge’ in terms of energy efficiency; as an external stakeholder commented, ‘they’ve literally just closed it all down and moved to new sparkly stuff’. But an organisation can only make this kind of investment occasionally, and then it must live with the consequences. And the consequences do not always fit a narrative of environmental progress:

> I know in some of our newer buildings we’ve had quite a lot of issues with kit failing and stuff like that […] so it’s the total operation, so it is the utility cost that’s there, it’s everything that’s there, how long the bits last and everything else … and you know there’s no point in saving a hundred grand if … over the 70 years of the building it’s going to cost you five million quid.
>
> (Executive, MMU).

The process of negotiating possibilities here involves a shift from identifying investment in technology as evidence of accomplishment (in this case, building technologies) to recognising that achievement of environmental goals is more complex, involving a combination of the ‘kit’, its performance in practice, and the interaction between humans and technologies. In line with the theory of ‘wicked problems’ or Beck’s risk society, each solution creates a new set of risks or dilemmas (Rittel & Webber, 1973; Beck, 1992).

Similarly, the success of photovoltaic installations in Sunderland and Nottingham led both to a celebration of progress and to the onset of new challenges. In this case the challenge was the result of changes in market conditions due to regulatory intervention, in the form of unexpectedly drastic reductions in the feed-in tariff (FIT). Actors had to rework cost-benefit equations to determine whether an environmentally appropriate technology was also financially sustainable. On the one hand, the creation of a new market can enable progress at unanticipated scales:

> …if we’d been having this discussion ten years ago you wouldn’t have been thinking about putting thousands of solar panels on people’s roofs because it was expensive and no-one really saw the cost going through the floor in the way that it has. The 2010 strategy, energy strategy, includes solar PV but we’ve way over-achieved on that particular element because it made sense to do so.
>
> (Focus group participant, Nottingham).

On the other, adjustments to the market can disable progress towards carbon reduction objectives. A key element of the prefigurative vision becomes a new problem to be addressed:

> …the feed-in tariff for instance, so that was brilliant and set up to kind of help PV, and then it's gone down and down and down and down […] you've got all of these people who've set up companies, install[ation] companies and behaviour change companies, and they all, kind of the smaller ones will all fall flat.
>
> (Operational staff, Gentoo).

More typically, a sense of discordance has to be negotiated because of the persistence of existing systems. Initiatives as apparently straightforward as improving the energy efficiency of social housing require complex adjustments: material changes in the homes themselves, market changes to make proposed interventions affordable, and policy changes to incentivise different forms of behaviour. At Nottingham City Council, a focus group participant lamented that the council could tackle the effects of public transport on air quality but could do nothing about private vehicles:

> …we have this ludicrous air quality policy that says you need to do loads about it with buses and taxis and deliveries, vans, but ignore all the private cars. How's that a driver for change when it's 95% [of the problem] you leave untouched?

Questions that are ostensibly about carbon reduction and the achievement of environmental goals are consistently reframed as relatively narrow cost-benefit equations in which short-term demands of financial sustainability outweigh considerations of environmental sustainability. While this may not be surprising, it means that carbon reduction is typically problematised as a question of current affordability rather than investment for the future. This can be posited as a raw question of costs; an executive at MMU insisted that 'I'm not going to spend £30,000 to try and save £3,000 of waste to landfill'. Or it can be framed as a complex of market and policy interactions that are beyond local influence:

> I accept the argument that because of the level of investment you need in energy from waste you've got to tie waste up for the next 25 years to feed the beast that you've just created […] and yes, you have to import waste from further and further afield in order to do that. But now look at what happens in the UK as a consequence of national policy on waste. In 2015 the UK exported over three million tonnes of residual waste to Europe to

> feed energy-from-waste plants in Denmark, in Germany, in France and in Belgium, and then ironically because of the energy shortage in the UK, we buy back that same energy from those energy-from-waste plants that we've just fed with our own waste.
>
> (Executive, Nottingham).

Within an organisation, this framing of progress in terms of what can be afforded in the prevailing circumstances shifts power from advocates of change to those tasked with maintaining stability, increasing discordance for those most committed to transition visions. Changes have to pay for themselves to gain permission. At MMU one interviewee said the university's finance director would accept a 'five year payback' on proposed investments. Such an approach privileges investments where there is a measurable cost and benefit within a relatively short timescale (and effectively assumes that carbon savings have little or no value in themselves).

The privileging of financial considerations - whether for the institution itself, or for its beneficiaries - means that opportunities to achieve progress on carbon reduction are passed over in favour of cost savings:

> …the disappointing thing about Robin Hood Energy is that it openly states it's about saving money. So if you asked them, where are you actually buying your energy from, it's like, we're buying dirty energy. The cheapest possible so that we can pass on the financial savings to the customers…
>
> (External stakeholder, Nottingham).

Even when environmental initiatives meet organisations' financial criteria, the conceptualisation of environmental change in terms of measurable carbon reduction privileges approaches that limit investment to physical and technological systems where the benefits clearly accrue to the organisation, rather than where the greatest public gains might be achieved:

> …the bigger elephant in the room is, well hold on a minute, does a marketing student coming out of Manchester Met, have they been - you know, they're going to be responsible for huge amounts of carbon, be it in their personal lives or as employees - have Manchester Metropolitan's values about carbon reduction touched them?
>
> (External stakeholder, MMU).

Interviewees at MMU were conscious of this question - hence the framing of education for sustainable development (ESD) as a way of contributing to

students' employability and thus satisfying institutional criteria for investment. Although interviewees were not (yet) able to point to any research demonstrating that 'carbon literate' graduates enjoyed better employment prospects, the rationale appeared to be accepted within the organisation. The investment in one member of staff to promote ESD is minuscule, however, compared with MMU's multi-million pound buildings programme. Sociotechnical systems, as Rip and Kemp observe (1998, p. 338), exert lasting leverage, creating 'stabilised interdependencies that shape further action'. The case study data indicate that actors' ideas of the future must often be shaped to fit.

7.4.3 Discordance in workplace practices

A third area in which future possibilities are negotiated is through working practices and the dynamics of organisational life. In working practices the momentum of environmental transition can grate against the logic and structures of an institution. The notion of institutional work - the activities of 'creating, maintaining and disrupting institutions' (Lawrence & Suddaby, 2006) - explores such activity. As Lawrence and Suddaby observe (2006, p. 238), actors require 'a high level of cultural competence' to 'engage in practices that exist just outside of the normative boundaries of an institution'. Processes of making sense may be stimulated by the experience of dissonance, of fractures and conflicts that need to be resolved. As Shove (2014) notes, persistent practices can militate against carbon reduction policies; and attempts to change everyday practices can encounter 'profound difficulties' (Hargreaves, 2011).

Within an organisation, leadership roles are focal points in this process of rationalising competing demands of change and stability. Executives and managers are seen both as facilitators of change and as blockages to it. They occupy lead roles in a drama of articulating why change must happen, how it should or might happen, or why it does not happen.

Part of the sensemaking process at Gentoo was to align the changes advocated by the Gentoo Green team with a corporate culture that stressed cooperation and valorised individual agency and initiative. Gentoo used

workplace practices such as the appointment of 'Planet Smart champions' as resources in a strategy of seeking to empower actors to work towards a common goal. But that sense of agency and cooperation proved difficult to maintain when jobs were at risk:

> …we have a culture here where everybody works for each other and … we're stronger than the individual parts. And then you come to, there's three hundred and somebody, so many people going to be made redundant. Well, is it me or is it the person sitting next to us? And it just, it collapses that culture to some extent or dilutes it...
>
> (Executive, Gentoo).

In this more fragile environment, interviewees stressed the need for a more directive form of leadership, with the emphasis shifting from the collective responsibility of employees to the influence of managers in mobilising staff in the cause of transition. In such circumstances, failure to achieve desired goals might be attributed to managers' inability to enthuse and inspire staff:

> You can't go in as a senior person and say right, well we'd better get on with this today. You've got to go in and say come on! We can change the world today! And I don't know who that person is. There may be that person, but I don't know who it is.
>
> (Former executive, Gentoo).

Other interviewees suggested more complex readings of manager-employee relationships at Gentoo. For some staff, one senior manager suggested, even the fundamental rationale for action in terms of the impacts of climate change was moot. The manager contrasted 'genuine enthusiasm' with an attitude of 'saying what they need to say when they need to say it'; staff would be 'just as open to people who don't agree or don't believe in climate change and you know, people read the papers and watch the telly, and will have their own internal debates'.

Interviewees also related stories of resistance to changes advocated (or allegedly advocated) by the Gentoo Green team. An incident dubbed 'kettlegate' became part of corporate folklore. Kettles had been removed from a staff kitchen and replaced with a large urn that was intended to be more energy efficient. The main issue appears to be that staff were not consulted, but the Green team were blamed for imposing their norms:

> [The kettles] were replaced with … the kind of big boiler where you just press and the hot water just comes out, where with the kettle someone comes in every five minutes and it's kettle, kettle, kettle … it was somebody else's idea but we got labelled, particularly because it went wrong - "oh well, it was supposed to be Planet Smart!" It wasn't our idea.
>
> (Senior manager, Gentoo).

In this case, two processes of sensemaking can be identified. Staff opposed to the removal of their kettles saw the action as evidence of the inappropriateness of environmental initiatives. Meanwhile, staff at Gentoo Green sought to exclude it from their environmental narrative - 'it wasn't our idea'.

Another participant related the story of Gentoo Green's initiative to replace traditional wastepaper baskets with recycling bins. Again, a sense of disempowerment among staff challenged the narrative of progress and cooperation promulgated by the Green team. On this occasion, though, the organisation was successful in changing staff practices:

> …we've had a lot of resistance. We used to have under each desk a paper bin, you know, just a wastebasket. So we got rid of all of those and people were not happy. We provided them with recycling bins at the end - there's a bank of desks and there's a recycling bin and a general waste bin at the end of each bank of desks, so it's not as if you've got far to walk to go, and people were not happy. We had full resistance, we had complaints, we had people ringing us up telling us that we were awful people 'cos we'd removed their wastebasket…
>
> (Operational staff, Gentoo).

The interviewee, who worked with Gentoo Green, rationalised the incident as evidence that 'people don't like change, that's the be all and end all of it'. Change had to be inculcated through incremental, almost invisible shifts that would eventually add up to something big:

> People don't like to change unless it's very easy and very simple and it doesn't affect them, or doesn't affect them greatly […] once you get that sorted then you can make some big changes…

Interviews revealed sensemaking as a continuous process of adjusting to shifting realities and perceived organisational priorities. At MMU, this was evident in the way different parts of the university were perceived as supportive or obstructive. At one point the university's environment team

suggested banning the sale of bottled water within in-house catering outlets. This was opposed because of the substantial income received from bottled water sales - an institutional rationale that overrode the environmental argument.

Similarly, the university's senior management could be seen as allies or foes of an environmental agenda, depending on the pressure of other priorities within the organisation. Despite public support from two successive vice-chancellors, the reality of management decision-making was perceived differently by staff. This could be the result of changes in personnel - 'the latest new person comes in with a strong view and suddenly, because they come from another university, they've got a more valid view than anyone else' - or by pulling rank within the organisation.

Possibly to counter such attitudes, low carbon initiatives were framed as contributing to the university's prestige and reputation, appealing both to the core logic of academic excellence and the market logic of competition. One senior interviewee commented that a good external reputation had attracted internal support and approval, particularly after MMU was the first university in the UK to achieve the ISO14001:2015 environmental standard:

> …as the first university to have the 2015 standard, [that] was really good. And all this is recognised by the senior executive, and actually now recognised within the new corporate framework, both vertically and horizontally within that corporate framework.

But the recognition that was seen as a sign of success and approval by this senior manager was questioned by another, creating an alternative sensemaking story of hoped-for progress sidelined through inattention:

> E. will come in probably once a year with the sort of environmental report, and everyone goes yes, that's very nice, and then I think as long as they're not costing too much money, and they seem to be doing some good things that aren't harming the reputation - creating risk - if they do it, that's good, and if they're doing some things that we can promote and say we do good stuff, then they're happy. Are they bought into the agenda? I don't think they are.

For some interviewees, lack of progress could be explained by organisational bureaucracy and power struggles. At Nottingham City Council, one interviewee spoke of 'politics with a small p, competition between

colleagues for jobs, financial rewards and/or status within the organisation, reorganisations and low morale' as factors that frustrated environmental action. Another described the process of trying to recruit someone into an environmental post:

> …you know the recruitment process can take months and months and then you end up with somebody that can't do the job because you'd had to go through so many hoops that you've lost the interest of all the people who could have done and they've gone somewhere else and got a job in the meantime …
>
> (Senior manager, Nottingham).

In these accounts there is an evident desire to offer explanations, to show how discordant events and episodes are part of a bigger and more coherent story. Incoherence is explained as an element in a bigger picture: 'kettlegate' as a failure of communication, inconsistency at MMU as a consequence of local management responsibilities, a shortage of skilled staff at Nottingham City Council as a problem of bureaucracy. The meta-story remains intact; there was no suggestion among interviewees that environmental strategies should not be pursued, even if they faced serious challenges.

7.5 Remaking sense

Ricoeur's notion of concordance is not that explanations should align in a united chorus. It is that the desire to make sense overcomes the challenge of dissonance: the discomfort aroused by the text provokes a quest for resolution in the reader. Through 'emplotment' (Ricoeur, 1991) actors construct accounts of their own and others' actions that run in traceable sequences of twists and turns. The plot does not guarantee a satisfactory conclusion, but provides a satisfactory story of why things are as they are.

Events thus become contextual rather than incidental: they work with the story, shaping understandings of its development. They signal, in the case studies examined, how actors understand and weave into their own narratives the provisional character of change; the conflicting roles of their own institutions; the constraining forces of the state and of sociotechnical systems; and the tussles of workplace practices. Inherent in this emplotment is a

recognition of and confrontation with regime resistance (Geels, 2014), the ways in which existing structures resist and divert trajectories of change.

In these sensemaking processes the prevailing institutional logic tends to be reinforced rather than opposed, confirming insights from transition literature on the depth of 'regime resistance' and the limits to carbon governance (Smith et al., 2005; Rutland & Aylett, 2008). Change that puts existing institutional objectives at risk (for example, where the cost might result in the loss of funds for other priorities) proves harder to justify. More radical suggestions, such as calling for Robin Hood Energy to provide clean electricity, or removing bottled water from catering outlets at MMU, are sidelined.

Ricoeur's hermeneutic cycle suggests a temporal move, from the initial proposition of the text to the response of the reader, from prefiguration to configuration. In an institutional context there is a clear conceptual separation between the promulgation of a vision or strategy and the experiences of adjustment and sensemaking that follow. But the division is fuzzy, just as (to continue the comparison) it is not necessary to read an entire novel before being affected by it. Visions of transition do not emerge fully formed, but go through processes of discussion and proposal at different levels, prompting similar processes of debate and sensemaking from the earliest stages. Prefiguration and configuration should be seen as overlapping processes.

Similarly, the prospects of lasting change that may emerge through the interplay of expectation and experience should not be seen as a disconnected stage, but more like the third strand of a rope. Sense is continuously made and remade. But there is a point at which it becomes impossible to return to the initial stage. How this might be identified in my case studies is the subject of the next chapter.

Chapter 8: Transforming the possible

8.1 A change of focus

The third stage of the hermeneutic cycle, as set out in my reading of Ricoeur in Chapter 4 (section 3), is the transformation of the possible - the generation of new imaginaries or ways of acting. It is the move from the attempt to resolve discordance into a new phase of ambition or critique that prepares the ground for further iterations of the cycle. This refigurative stage shifts the focus of attention from 'the work' to 'life', offering the possibility of new experiences (Ricoeur, 1988).

From an institutional logics perspective, this stage aligns with the establishment of new logics or the transformation of existing ones (Mohr & White, 2008; DeJordy et al., 2014). From a transitions viewpoint, it may be the point at which new systems and ways of ordering the world coalesce around new technologies - the 'tipping points' (Duit & Galaz, 2008) of change from one system or practice to another.

Institutions, like literature in Ricoeur's hermeneutics, can change the rules of the world and empower their 'readers' to act in new ways. In doing so they share the projective imaginary characteristic of literature. Ricoeur (1976, p. 77) observes that '[t]he sense of a text is not behind the text, but in front of it. It is not something hidden, but something disclosed. What has to be understood is not the initial situation of discourse, but what points towards a possible world…'

In this chapter I apply Ricoeur's concept of refiguration to my case studies in order to examine how change that has been advocated on the basis of a critique of a pre-existing set of conditions (prefigured) and constrained through re-engagement with those conditions (configured) is then taken forward through the adoption of new beliefs and renewed pursuit of environmental objectives. Through this lens I explore the evidence for the emergence of changed or new institutional logics.

I present the case study evidence in four stages. First I consider how organisations and actors orient themselves towards possible futures as a response to the challenges of implementing environmental policies. Next, I examine evidence for changed rationalities and understandings. Third, I highlight how understandings of change disseminate through epistemic communities (Haas, 1992). In the fourth section I look at examples of disruptive change and ask whether disruption implies refiguration. I also consider whether low carbon transitions can take place without a refigurative process, leaving prior epistemologies undisturbed. Finally, I reflect on the extent and durability of the processes of transition evident at the case study organisations.

8.2 Stories of the future

An orientation towards the future is typical of organisations driven by goals and objectives (Selznick, 1984; Mintzberg, 1990). Latent in such orientation is the potential to disrupt or change goals and objectives. When the foreseen future presents a critique of current action, actors and organisations must resolve a dilemma (Bevir & Rhodes, 2005; Hay, 2011) in which both continuing on the same trajectory and changing course carry risks.

The articulation of an environmentally sustainable future, however it is done, creates expectations of action. Expectations may be reinforced through recruitment of staff, approval of projects, and the articulation of ambitions such as 'let's make a sustainable planet'. It is further reinforced through peer approval in the form of awards, partnerships and professional networks. In such ways institutional reinterpretation may be set in train from the moment the word 'sustainability' becomes part of an organisation's discourse.

8.2.1 Planning and investment

Organisations typically engage with the future through processes of planning, horizon scanning, strategising and making investment decisions (Mintzberg, 1990; Spee & Jarzabkowski, 2011). These processes identify strengths

and weaknesses, opportunities and threats. The way questions of planning and strategy are posed has the potential to reinforce or to interrogate existing logics.

Planning in itself is not a disruptive activity; indeed it is the stock-in-trade of the responsible bureaucrat. Environmental challenges, however, represent a particularly knotty form of planning (Rydin, 2003), because of their duration - the 'problem' will still be there after any action is taken - and because of their complexity, which means that whatever action an organisation takes may be insufficient to address the problem.

But to begin to plan is to open up possibilities of change, creating potential space for insurgent logics. An environmental logic that is globally-oriented and that emphasises social justice has the potential to challenge or divert logics that focus on market priorities such as employability and skills. Planning processes, because of their aspirational and envisioning features, have the capacity to mount such a challenge, drawing on 'powerful memories, deep fears, passionate hopes, intense angers, and visionary dreams' (Throgmorton, 2003, p. 128). As one interviewee commented:

> Policy, done well, for me is about creating the right enabling framework within which positive things can happen in the first place, because people are incentivised and encouraged to do it, but then also provides the right framework for scaling those things up, so it will articulate a positive vision, it will be something aspirational that people want to be part of, it will shout about bits of good practice that are already happening, but it will also tee up other things where there's more work to do…
>
> (External stakeholder, MMU).

For the most part, interviewees did not see much conflict between institutional interests and their notions of a low carbon future. A small minority held views of environmental responsibility that directly challenged the logics of market success and institutional survival manifest in each organisation. However, investment decisions generate their own momentum, setting organisations on a course of publicly committing to policies or technologies that are seen to embed environmental values:

> [I]f you look at some of our economic development agendas, we pump a lot of money into the setting up of what's called a cleantech network, so start-up companies are offered subsidised office space, access to the internet, mentoring, all of the usual types of activity that local authorities

> do … but we specifically targeted the green tech sector when we've established a number of incubation opportunities…
>
> (Executive, Nottingham).

At Gentoo, investment decisions were seen as a calculated risk in order to achieve environmental goals. Success was viewed as a vindication of pro-environmental actions:

> Our view was we're putting a new form of heating in, and it'll help the planet, and it will help customers with reduced fuel bills, and we'll get a feed-in tariff. So we look at the upside. We didn't know we'd get our money back on that when we took that risk. We just thought it was the right thing to do.
>
> (Executive, Gentoo).

At MMU, an interviewee explained that environmental arguments helped staff make the case for swapping diesel vehicles for electric ones as the university's fleet of cars and vans was replaced. By 2016 just over 43 per cent of the fleet had been converted to either electric or hybrid vehicles. Such investments begin to embed an environmental logic within an organisation, changing the criteria applied to planning and policy decisions.

8.2.2 Epiphanies and experiments

The prospect of institutional change can also come about through the future-oriented agency of individual actors, via their 'institutional work' in stabilising or disrupting an institution. Sometimes this may be prompted by a personal epiphany or realisation that the world is not what it seemed. One manager at Gentoo described how a TV programme provided such an experience:

> I was watching Paul O'Grady [host of ITV's *Animal Orphans*] last night and watching the monkeys and that jumping around the trees, and the fact that the sunbears and the monkeys and all that are reducing, and that's because of cutting the trees down and not making habitats elsewhere, and I suppose when I'm at work I'm not really thinking about it because it's our policy […] but then I watch programmes like that and it gets to me a little bit when I think hang on, what is the world going to be like in fifty years' time, when my kids' kids are going, "What were elephants? What were gibbons?"
>
> (Senior manager, Gentoo).

This kind of personal motivation can prompt what Stinchcombe (2002) describes as evangelism, where organisations seek to replicate their models or

actors seek to remould organisations in the image of their own beliefs. One senior manager described the Gentoo Green mission as ‘to fundamentally change the way people are living without them really noticing’. A Nottingham interviewee described setting up a sustainability project after spending time with the Centre for Alternative Technology in Wales. However such missionary work can have negative consequences, with discourses of ‘tree-huggers’ and ‘eco-warriors’ being used to dismiss the more enthusiastic proponents of change.

Actors can also push organisations towards new rationalities through experimentation. Ideas of innovation do not necessarily challenge institutional logics in the first instance, though as Grin and colleagues (2010) observe, they can establish ‘niches’ from which established regimes may be challenged and disrupted. In Nottingham an external stakeholder described the city as a ‘test bed for new ideas’; at MMU several interviewees described the university as a ‘living laboratory’ for environmental sustainability. The Energiesprong model advocated by interviewees at Nottingham City Council fits the notion of sociotechnical change through experimentation. New technologies or ways of working have the potential to displace or overtake current approaches, and by associating innovation and efficiency with low carbon practices may create a milieu in which beliefs and attitudes shift.

8.2.3 Asserting new logics?

There is a difference between incremental change and the establishment of new logics, although the first may ultimately lead to the second. Planning processes and personal epiphanies are not the same as organisational transformation. However, there is also evidence from the case studies of a commitment to concepts of a low carbon or environmentally sustainable future despite adverse circumstances. When there is a determination to see through a process despite setbacks this may be evidence that a new logic is taking hold.

Such a commitment may be reinforced by investment decisions. An organisation that has spent millions of pounds pursuing a particular environmental agenda has an interest in portraying that investment as money well spent - an irreversible decision is ‘rendered sensible’ through commitment,

as Weick (1995) observes. But interview data do not simply demonstrate a defence of prior decisions. One focus group participant at Gentoo commented:

> …because Gentoo have committed to PV for the next 20 years, because it's already on their property, that agenda has to still be there. And that'll keep us aware throughout the next 20 years of energy efficiency across the whole group. And there will be new technologies coming around to help alleviate the additional costs, to push green agendas and that's the sort of thing we're working on at the moment with investors…

Such views echo the determination of senior staff at Gentoo to advocate continued investment in low carbon technologies in the face of hostile circumstances:

> When the feed-in tariff rates were being consulted upon, that terrible winter when they were saying they were going to come down, I just said keep going - just keep going, just keep going, just keep going, hold your nerve, keep going, keep going - and we got board approval for that. Everybody else stopped. Well virtually everybody else stopped. A load of deals collapsed overnight.
>
> (Executive, Gentoo).

An external participant in the Gentoo focus group described the impact of the loss of the Gentoo Green team, but insisted the core value of environmental responsibility had not been shaken. For this individual, there were signs that Gentoo's institutional logic had shifted:

> To me I still think the important issue is that the exec board still believe in the fundamental process of sustainability and carbon management. So as a value they've never lost sight of that. Yeah, the finances have changed in the organisation and it's required that dramatic restructuring that they've had to do, but the value's still there at the top … there's still an ambition to do it somehow.

Perhaps because of the more favourable circumstances at MMU, and the success of Robin Hood Energy and hopes of expanding the district heat network at Nottingham, challenges to the logic of environmental action were less evident at these organisations. In both organisations carbon reduction initiatives continued to be regarded favourably. At MMU a senior staff member described a shift in the finance department's attitude, from imposing arbitrary capital spending allocations to being ready to consider a business case for investment based on projected future cost savings.

This is somewhat short of a shift in organisational logics, but it does suggest a shift in attitudes towards investment that may be more compatible with an environmental logic. Reinterpretation may occur through such bureaucratic adjustments as much as through personal epiphanies, as the move to 'lifecycle costing' at all three case study organisations suggests. This in turn reinforces changed expectations of action. Expectations of the future may also be read back into articulations of the past: there is 'a continual interplay between modified expectations and transformed memories' (Ricoeur, 1988, p. 168).

8.3 The future in the present

Although refiguration is a future-oriented process, it is expressed and acted out in current circumstances. Changed views of the future, and of an organisation's orientation towards a possible future, are demonstrated in the present moment. The 'now' prefigures the 'not yet'. To examine whether and how this is happening, I turn to the evidence for changed rationalities and understandings exhibited in contemporary action and attitudes. In short, are actors and organisations acting as if they are taking a low carbon future seriously despite resistance and setbacks?

8.3.1 Investments as signals of logics

Perhaps the most obvious indication, reflecting the consideration of investment in the previous section, is that when an institution acts differently there are material consequences. It buys and builds different stuff, or puts different stuff in people's homes. MMU's sustainability drive is backed up by millions of pounds of spending on buildings. The buildings do not simply represent a reduction in carbon emissions; they tell a story. The story is one of both current success and a commitment to future action, and to the principles that underpin such action. The £75m Business School building completed in 2012 made a 'big statement' about the university's direction and priorities because of its environmental credentials. An external stakeholder commented on the message the Birley campus conveyed within the city:

> …the Birley Fields campus for me is a really good demonstrator of how they've got the confidence and the capability in-house now to really

> drive that kind of development. You know, they're not looking to the city council necessarily, what do we have to do from a planning point of view or can you point us in the right direction, they know what the right thing is and they get on with it.

Photovoltaic panels on thousands of roofs in Sunderland and Nottingham, similarly, tell a story of change. So does the installation of photovoltaic canopies at council-owned leisure centres in Nottingham. They signal 'green' technologies and attitudes, even if the actual energy consumption in households with solar panels might be higher because thermal comfort has become more affordable. The 6,000 homes with solar panels in Sunderland represent the possibility of cheaper electricity bills and carbon reduction, as well as improved comfort and wellbeing for residents.

Through this investment different understandings are generated. Solar energy is no longer an outlandish or untested technology, but something that has the potential to improve the lives of people living on low incomes. So while there may be relatively little understanding or acceptance of a need to change lifestyles or behaviours, there is a new understanding that renewable technologies can help people live a comfortable life:

> …one of Gentoo Green's … greatest achievements was getting customers who live in rented social housing, many of whom are elderly, to realise that to get involved in this new-fangled technology is actually going to lead to a more comfortable temperature and lifestyle in your home, and probably more money to pay your bills, let alone reducing the CO2 emissions…
>
> (Executive, Gentoo).

The scale of investment does not have to be large to generate acceptance of new technologies and a changed understanding of what is possible. An electric car not only signals the purchaser's priorities, but acts as a marketing tool for an unfamiliar form of transport. New converts help to spread the good news, as one interviewee at MMU reported:

> …we'll invite people to try the pool cars, to encourage them to use them for business use, but you find yourself, a lot of people come onto them and say actually this could fit me down to the ground. And one of our team actually has gone and acquired one himself, he leases an electric car, so he's great, he's like a champion, the best you could ever have met, he really should be on the books selling them!
>
> (Professional, MMU).

The institutional credibility that facilitates changed logics arises only partly from physical structures and artefacts. It also stems from peer recognition and approval by superiors within the hierarchy: there is an investment of symbolic capital (Bourdieu & Wacquant, 1992). In contemporary organisational practice this often comes in the form of awards and commendations that disseminate 'strategic signals' (Gallus & Frey, 2016), persuading sceptics of the value of new ideas. The old adage that seeing is believing holds good: observing actions that express an organisation's environmental commitment, or seeing that such actions are encouraged and celebrated by others, generates stories that build legitimacy and support (Lounsbury & Glynn, 2001) and can overcome resistance.

8.3.2 Cultural change

A second way in which logics can begin to shift is through the exchange of ideas and promotion of new workplace practices. Sometimes the physical changes involved may be quite small - one interviewee at Gentoo described an office where staff decided to compost their food waste. Through conversations and informal interactions, actors become convinced of the merits or legitimacy of environmental action. In the Gentoo example, the interviewee described the process as an alignment of culture. Alvesson (2002, p. 2) argues that culture grows from 'the profound importance of shared meanings for any coordinated action'.

Gentoo sought to instil a culture change among staff by inviting them to come up with their own ideas of appropriate environmental actions. While major investments such as solar panels and housing retrofit schemes had to be approved at board level, staff were given freedom to suggest and implement small-scale initiatives such as ideas to reduce waste or new forms of public engagement. One interviewee recalled:

> So the Planet Smart internal programme, each department was asked to make their own pledges. It wasn't the green team saying your department is this, are you going to do that? Make up your own things, what fits with your part of the business.
>
> (Senior manager, Gentoo).

At MMU, one executive compared cultural change with a strawberry plant creating new plants by putting out runners that then take root. Facilitated by the regular exchange of ideas and views, this generated a climate in which actors felt able to think differently about their roles and the organisation:

> I think the more interesting shift is the sort of organic growth in the agenda through staff engagement and student engagement, and staff and students understanding why it's a good thing to get engaged with, whether it's on-campus activities, extra-curricular activities, or whether it's part of the curriculum. I think that's where it becomes really interesting, because that's where change has happened, where it's part of people's psyche and it becomes part of the cultural norm rather than a diktat from above.
>
> (Executive, MMU).

Alongside a permissive and enabling attitude went encouragement to celebrate success and have fun. While this might be expected in an environment geared towards giving students an enjoyable university experience, it was also a strong strand in Gentoo's approach. Gentoo launched its Planet Smart programme with a party and offered internal awards to staff for their 'green' activities. An external stakeholder contrasted MMU's MetMUnch programme, highlighting environmental issues through food and catering, with the judgemental attitude sometimes evident among sustainability enthusiasts:

> …half the time sustainability can just be seen as a stick to beat you up with and tell you how bad you are, make you feel guilty. They [MMU] used it to express the joy of something we all love and need […] it just grew and grew and burst into life and it did much more than any well-meaning sustainability officer could ever achieve.
>
> (External stakeholder, MMU).

When cultural change was claimed within an institution, interviewees tended to cite stories of personal conversations and informal exchanges to support their assertions. Students recruited to train other students in carbon literacy at MMU gained confidence along with their understanding of carbon impacts, and such confidence was seen as being as important as technical knowledge. At Nottingham City Council, an interviewee used the story of a visit to one local school to illustrate how conversations could change understandings:

> We went to […] a very old primary school, traditionally run, and we won a portion of money for that school … and instead of giving it to them for things like books and pens and paper we said to them let's change your lighting. And they were quite surprised and they said how

> will that help? And we said well, change your lighting and it will make you become more efficient, make you use less carbon, you'll spend less money, therefore you can spend more money somewhere else. And […] there was a huge snowball of sustainability that came from that.
>
> (Operational staff, Nottingham).

The evidence here is that changed logics and cultures are grafted onto existing ones. Sustainability is attached to existing values of responsible budgeting and waste avoidance. When the two are aligned, carbon reduction is seen as part of an already established agenda:

> …nobody really wants to talk about polar bears and climate change and things like that, [it's a] switch off, but if you talk about saving money for people and how it's going to impact them, what they're actually gonna see, what's gonna change for them, I think that's really helped all of the projects to come along.
>
> (Operational staff, Gentoo).

For one senior executive, staff tasked with environmental action gained acceptance among colleagues when a link was made with their everyday responsibilities:

> …suddenly these weren't just sort of tree-hugging do-gooders, these were people who actually could help them do their job and deliver their responsibilities.
>
> (Executive, Gentoo).

This cultural grafting emphasises the similarity between prevailing logics within an organisation and the impact of new logics. At MMU one executive linked more efficient cleaning processes with carbon savings (through leaving fewer lights on by cleaning one floor at a time) and with the organisational ethos of 'pride in place', or attention to quality in job performance. While the radical possibilities of the new logic are muted, the old values of quality and efficiency associated with civic or corporate logics are aligned with new purposes.

8.3.3 Reworking the institution

The changes discussed so far, though significant, are incremental - as emphasised in the literature on transitions (Markard et al., 2012; Avelino & Grin, 2017). They raise the question of what constitutes transformation or a change of institutional logics, and how such change might be evidenced.

For refiguration to happen in an institutional setting, actions and projects need to translate into a realignment of the organisation itself, or of the wider institutional field. That realignment does not need to be complete or final: I follow Ricoeur and Giddens in seeing the hermeneutic cycle as an iterative and continuing process. What is required is a changed view of how an organisation sees itself and its functions. That change must extend beyond the epistemologies and activities of individual actors, even if it does not (yet) permeate the whole institution.

Such reworking can be demonstrated in part through organisational structures and recruitment practices. A shift in direction can be evidenced by the kind of people who are recruited and the hierarchies in which they find themselves. Nottingham City Council is a case in point. A new structure created opportunities for staff with particular sets of skills and experiences, who in turn were attracted by what they saw as the organisation's position and intentions. This generated a message about the local authority's priorities:

> The adoption of an energy strategy - we were first I think across local authorities to recognise that energy has a role to play in delivering our sort of sustainability objectives. I would say the creation of an energy directorate is pretty unique in local authorities, and the creation of a portfolio holder who has responsibility for energy and sustainability and nothing else.
>
> (Executive, Nottingham).

That message was received by potential recruits who were drawn to the council's vision:

> …obviously the opportunity to come over to Nottingham was great really, because - and again for me, it was the vision and the agenda and obviously I was wanting to push those boundaries around what had been typically, you know, around sustainability and climate change previously, and Nottingham was forward thinking enough and kind of fitted with my ambition on that agenda.
>
> (Professional, Nottingham).

At Gentoo, the recruitment of champions in each department to spread the Planet Smart message complemented the recruitment of the Gentoo Green team, sending an obvious message throughout the organisation of the importance of environmental action:

> …in order to change behaviours one of the most important things we did is we got like a champion in each part of the business, someone who had - it wasn't a hierarchical thing, you had to nominate someone, but we wanted someone who had a passion for this, so that you didn't have glum people who'd been sent to a meeting, you had enthusiastic people who wanted to actually get stuck in and make a difference.
>
> (Executive, Gentoo).

As one senior staff member put it, 'you could never have sat and written a bit of paper with this stuff that fires out'. But Gentoo's financial problems and subsequent redundancies presented a significant challenge to this approach, raising the question of whether the change of direction apparent in the expansionary phase of Gentoo Green could survive the loss of key staff. One manager suggested the values and approach would survive - 'if you say that you're environmentally responsible, you have to act and behave in a certain way and that's not going to change' - and this was echoed by participants in the focus group at Gentoo, as well as in interviews with executive staff.

At Manchester Metropolitan University, an organisation that had not experienced the same financial challenges as Nottingham City Council and Gentoo during the research period (but began to shortly afterwards), there is evidence of institutional realignment through new organisational structures and recruitment, through executive support and investment decisions, and through the celebration of environmental success stories. There are also signs that this dovetails with a wider process across the institutional field of higher education.

One manager claimed that 'there's no doubt that the improvement up the [People and Planet] Green League has helped finance additions to my team'. Success breeds legitimacy (Powell & DiMaggio, 1991; Thornton et al., 2012). Another commented on the fact that MMU's stance on sustainability was set out in job descriptions as a commitment new staff were expected to support. Each successful initiative makes the next easier to approve:

> One of the key things was obviously putting strategy into action, having good governance around that, reporting on it frequently, reporting at the highest level, and getting the various initiatives that you're wanting to bring forward and get funded at the top table. And with the departure of the director of facilities at the time, around 2010 I think it was, that gave me an opportunity with the director of services to really push the environmental sustainability agenda to the top table…
>
> (Senior manager, MMU).

This growing legitimacy has been echoed, according to one interviewee, across the higher education sector:

> …one of the key differences I've seen at the Environmental Association of Universities and Colleges, it used to be just environmental managers going to it. Now you've got heads of estates, directors of facilities, even some pro-vice-chancellors. So the audience has certainly increased in seniority. The reward and recognition has been around the Green Gown awards in the sector which are highly commendable and recognise that if you get a Green Gown now, you are doing some good stuff.
>
> (Senior manager, MMU).

An external stakeholder spoke of a similar trend, arguing that action on sustainability was becoming 'a whole institution approach' at a growing number of universities. Research, learning, student engagement, leadership and governance, and estates and operations were all becoming part of the environmental remit. This is not to suggest that higher education as a whole has become environmentally oriented; but it does indicate that an environmental logic is making headway across the institutional field - a phenomenon that merits further research.

8.4 Communities of change

8.4.1 Cognitive proximities and epistemic communities

The picture of transformation or realignment of logics built up so far is incremental and somewhat muted by organisations' desire to align new directions with prevailing logics. It falls short of the radical departure implied in the concept of refiguration, and implied too in notions of sociotechnical transition and changed institutional logics. Nevertheless I have suggested that a shift is taking place in each of the case study organisations that would be hard to reverse.

Part of that shift is the spread of new understandings and priorities at an institutional field level (Thornton et al., 2012; Fuenfschilling & Truffer, 2014). To investigate this osmosis of ideas and logics I asked interviewees about the networks and relationships that were most important to them in pursuing their environmental agendas. This section addresses the third of my research

questions: **How does actors' participation in epistemic communities shape the construction of low carbon futures?**

Interviewees were asked how they communicate and persuade others of the importance of their low carbon activities, at which scales, what partners were involved and what challenges were faced (see topic guide, Appendix A). The initial purpose of this questioning was to interrogate the 'anchor institution' concept and to begin to map the key external relationships at each institution. In practice, because of the limited time available for each interview, responses tended to be less detailed than initially envisaged. What emerged, however, was a cluster of key relationships at each organisation.

Epistemic communities may exist at a local level, within the professional and political networks that develop in cities and regions. But they do not have to be local. Boschma's notion of proximity (Boschma, 2005) helps to illuminate both the interaction and the separation of place and space. Boschma outlines five types of proximity: cognitive, organisational, social, institutional and geographical. Cognitive and organisational proximity are characteristic of epistemic communities, though their members may be hundreds of miles apart. They tend to work in similar types of organisations - for instance, in higher education - and share a set of understandings of the world.

In analysing the case study data I have particularly focused on cognitive proximity, looking for shared understandings of low carbon transitions and shared goals. Each interviewee was asked which relationships and networks were significant in their work, both in their own location and at a wider scale. Table 8.1 below shows the links actors identified as most significant in their work on low carbon issues.

The research did not extend to a full social network analysis of each organisation, which would have required a more comprehensive quantitative analysis of external stakeholders as well as internal actors in order to show how each organisation sits within a wider field of policy and epistemic actors (Deas et al., 2013). My aim here is to show, through the case study data, how epistemic communities and peer connections play a role in making change 'sticky'.

TABLE 8.1. KEY RELATIONSHIPS CITED BY CASE STUDY INTERVIEWEES

Key relationships cited by case study interviewees	Gentoo	Manchester Metropolitan University	Nottingham City Council
Knowledge networks, professional bodies and lobby groups	UK Green Building Council	National Union of Students	Core Cities Group
	Peer housing organisations	Environmental Association of Universities and Colleges	APSE (Association for Public Services Excellence)
	National Housing Federation	People and Planet	Peer municipalities
	ISO (International Organization for Standardization)	AUDE (Association of University Directors of Estates)	Energiesprong UK
	NEA (National Energy Action)	IEMA (Institute of Environmental Management & Assessment)	
	Royal College of GPs	Peer universities	
Government, regulatory and political links	Homes & Communities Agency		Department for Energy & Climate Change (or BEIS)
	Department for Energy & Climate Change (or BEIS)		
Local partners	Sunderland City Council	Carbon Literacy projects	East Midlands local authorities
	Sunderland Low Carbon Partnership	Transport for Greater Manchester	Health and housing board
		Manchester Climate Change Agency	Nottingham Energy Partnership
		Oxford Road Corridor Partnership	Green Theme Partnership
		Manchester City Council	Nottingham Trent University
			University of Nottingham
			Nottingham Carbon Club
Other important connections	Environmental gurus - Tim Smit, Al Gore	International academic experts	National political leaders
		Students	Ningbo (twin city, China)

Note: Cells showing the most important relationships (by number of mentions and significance expressed by interviewees) are shaded. Only relationships cited by more than one interviewee are included.

8.4.2 Nottingham City Council

Interviews at Nottingham City Council revealed 14 significant connections (Table 8.1). Locally, these included the city's two universities, a 'carbon club' involving local businesses, and the council-led Green Theme Partnership which brings together actors across the city to advance the city council's environmental agenda. They also include the local NHS and Nottingham Energy Partnership, an energy efficiency charity originally established by the local authority. Further afield, it includes other local authorities in the East Midlands. At a wider scale the links include national political leaders and government departments, including the former Department of Energy and Climate Change (now merged into the Department for Business, Energy and Industrial Strategy).

Despite political differences between the city council and national government since 2010, at an officer level there is a pragmatic continuity of relationships with central government. One senior manager commented:

> I think it's good to keep good connections with them because it works both ways. They need to know how things really work on the ground when they're making policy, and we need to influence them so when they're creating policy it's in a way that works for us. […] we do have people coming up to look at what we've done and talk to us about what's worked and what hasn't worked and ask us questions.

At an urban scale, the city council sees itself as an influencer, sharing its expertise with others:

> Nottingham City as a local authority has a strategic leadership role which shouldn't just confine itself to its own statutory organisations as a local authority. But it should also be a leading player in a partnership of not just public, but private sector organisations as well, right across the city, in order to encourage a low carbon transition.
>
> (Executive, Nottingham).

Three areas of knowledge exchange are prominent among the links cited by interviewees, one local and two national (England rather than UK-wide). The local network is the Green Theme Partnership, which is primarily a forum to inform other actors in the city of the council's policies and to seek their views and suggestions. The national organisations are the Association of Public Service Excellence, a membership organisation for local government officers and councillors 'dedicated to promoting excellence in the delivery of frontline

services to local communities around the UK' (APSE, n.d.), and the Core Cities group, which represents the eight largest English cities outside London: Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle, Nottingham, and Sheffield.

Perhaps because of its long history of environmental action, the city council has established a reputation as a centre of good practice to share across the local government community:

> We are looking for case studies to highlight what individual councils are doing for the benefit of others… so Nottingham are one of the organisations (a) who are good at promoting themselves in general, and (b) who have done that in relation to some of these energy projects … that's not something that a lot of councils are good at really…
>
> (External stakeholder).

Being seen as a beacon of innovation helps to ensure commitment to an agenda: it legitimises the city council's activity both to external audiences and internally. Such legitimation helps to cement change in place (Thornton et al., 2012). There is less evidence, however, that Nottingham City Council's own vision and practice has been informed by epistemic communities outside the city.

APSE and Core Cities bring together and reinforce pre-existing expertise among local government officers and elected members, informing low carbon visions and practice. The city council's own activity, however, either predated the formation of these communities or was contemporaneous. Nottingham's experience and history, and the close connection between its vision of decarbonisation and its local energy assets, would suggest that its version of a low carbon future is largely self-generated. It is at heart a pragmatic response to a local problem of fuel poverty, driven by the logic of social welfare, as one senior executive explained:

> Actually, the remit for this role was much more about tackling fuel poverty, so when we get on to discussing the key principles of Robin Hood Energy [Nottingham's energy retailing company], it's not primarily about green energy. It's about the cheapest energy that we can get, and there's a longer term desire … potentially that's the way the market's going to go anyway, that greener energy is going to be cheaper energy.

In Nottingham, perhaps because as a municipality the city council is rooted in representative politics, the low carbon agenda has been driven by the need to respond to local problems rather than through a sharing and interpenetration of expert knowledges at a wider scale. But once established, that agenda has both informed and been informed by wider epistemic communities.

8.4.3 Manchester Metropolitan University

Manchester Metropolitan University presents a dense picture of knowledge exchange, with 13 key links mentioned by interviewees (table 8.1). Students are included although they could be considered to be an internal relationship; this is because they are a primary focus of knowledge transfer on environmental issues from MMU staff, and also because historically members of the student union have put pressure on MMU to adopt environmental policies.

Within the city of Manchester, the interview data indicate the existence of a rich network of organisations and agencies, with the Manchester Climate Change Agency at its centre, linking with the University of Manchester, Manchester City Council, the Oxford Road Corridor partnership and a range of carbon literacy projects. MMU is seen as an important player in action on climate change, as an external stakeholder commented:

> …if you can move beyond what they are as an organisation, look at more the way they've applied and embedded the commitment to environmental sustainability and embedded it as part of the way the organisation works, you can apply that philosophy anywhere … you know, they provide me with countless good news stories, case studies, and bits of ammunition for when we go and talk to other organisations.

The existence of an ecology of low carbon activity within the city, however, does not demonstrate that this is the main driver of change within MMU. Interview data suggest a different dynamic. The institutional narrative of environmental action at MMU depicts political action by the student body, supplemented by policy pressures from HEFCE, as prime influences in the first instance - although HEFCE no longer has a high profile. The recruitment of an environmental strategy coordinator in 2007 followed and was seen as a significant step forward in MMU's environmental policies and practices. Since

then, success in awards schemes has generated buy-in from senior management and legitimacy internally, as well as an external reputation for innovation.

This process has depended more on external networks and validation than on engagement with climate action in Manchester. Key relationships have been with the Environmental Association of Universities and Colleges (EAUC), the NGO People and Planet which runs the 'green league' of UK universities, and the National Union of Students. Of these, EAUC was the link highlighted most frequently, mentioned by five of the 11 internal interviewees.

EAUC provides a forum that both legitimises individual institutions' actions, especially through the annual Green Gown awards, and helps to mould institutions' thinking through its own articulation of a low carbon future. It has existed for 20 years, providing a continuity that has outlasted government policies and initiatives. An interviewee at MMU commented on the increasingly senior roles of attendees at EAUC's annual conference. The same person commented that 'people have had to really become part of those networks to keep their finger on the pulse, and to be honest that's what I did when I first came here'.

As EAUC has grown in reach and status it has established a role at the centre of a community both within the UK and internationally. For MMU, it functions both as a source of knowledge and as a place to share the university's own achievements:

> They've got communities of practice … and obviously you can share ideas, you can post a thing that says we're doing this, has anyone else done it? And they have a conference every year, and I'm speaking at the conference this year about ISO14001 […] So this is really important, we know the chief exec very well, he's very much, "Great, Manchester Met doing lots of good things", but he's always keen for us to share best practice as well.
>
> (Senior manager, MMU).

In MMU's case, membership of an epistemic community does not simply reinforce a shared epistemology; it is seen as a necessary step in generating and validating such an epistemology at an organisational scale. MMU's head of environmental strategy was already a member of EAUC when he was recruited

to his position; another senior executive at the university has been chair of its board; and members of staff have presented at its annual conference.

EAUC itself is highly conscious of its influencing role. It describes its mission as ‘to lead and empower the post-16 education sector to make sustainability “just good business”’ (Environmental Association of Universities and Colleges, n.d.). Internationally, it aligns itself with the ambitions expressed in the UN Sustainable Development Goals. Its increasing internationalisation, demonstrated by activities such as hosting the Sustainability Exchange website (www.sustainabilityexchange.ac.uk) which seeks to become ‘the world’s leading resource of sustainability information’, allows it to occupy a defensible ‘expert’ space outside state-based governance networks (Scrase & Smith, 2009).

Association with and validation by an epistemic community reinforces MMU’s environmental commitments and public reputation. Through such public positioning, divergent logics can begin to become institutionalised.

8.4.4 Gentoo Housing

Gentoo is an unusual case of knowledge transfer. While each organisation has its founding stories of environmental action (student protest at MMU and the Nottingham Declaration), Gentoo’s environmental creation myth is remarkably individualistic and was repeated on at least three occasions by different interviewees. It involves an organisational restructure as a moment of opportunity, a revelatory meeting, and accounts of missionary zeal. There is even an Eden.

The story involves a bureaucratic reshuffle in 2007 when five local housing companies were merged and new roles created. At the same time the organisation rebranded itself as Gentoo. One of the directors went to the then chief executive and asked to work on ‘green stuff’. In their words:

> …my induction to the green stuff was, I emailed Tim Smit [founder of the Eden Project in Cornwall] and said can I come to the Eden Project for a fortnight? So I went to the Eden Project for a fortnight with Gentoo’s blessing and I just knocked about with people at the Eden Project. And they really taught me that non-preachy approach, make it interesting, make it relevant, make it easy, and I also started networking.

The story is told almost in terms of seeing the light and then sitting at the feet of appropriate gurus. The former director describes how this was done:

> I realised quite quickly that all the activity, all the conversations, were in London, so I had to go to London. […] I met a whole range of different people from different organisations and I just made it my business to be available to chat, I got invited onto a couple of working parties, and once I'd been invited onto a couple of working parties that was kind of it - once I'd been accepted into the community, I then got offers - would you speak at this event, would you give a presentation on this or that…

As a way of tapping into an epistemic community and then recreating it internally through the recruitment of the Gentoo Green team, this is more buccaneering than the processes observed in Nottingham or at MMU. Such 'network weaving' (Krebs & Holley, 2006) became, at least until Gentoo's financial crisis, part of its organisational culture, as one senior manager described:

> …the process of Boiler on Prescription, before it even started … I was looking at the impact of the retrofit of the homes, at the coffee machine, on location, I said to M., do you think we can stop people turning up to their GP as much, wouldn't that be interesting? And she went yeah, go and find out. […] that conversation took me to Lord Hunt in the House of Lords, it took me to DECC and some of the senior civil servants within DECC, it took me through Public Health England […] and at no point was I reined in…

Effectively, Gentoo staff were creating their own epistemic community by seeking out appropriate networks and contacts and badgering them to get involved. This was then reinforced through a well-oiled PR department and presence at conferences and events. In one interview a senior manager described how they had developed a working relationship with *The Guardian*'s environment correspondent, Damian Carrington:

> …I've got his phone number, he's got my phone number now, we've built up a relationship because we had good stories for him. And, you know, if he has a question about energy efficiency or environmental sustainability that relates to social housing, he'll ring me and ask me … to have that kind of relationship with a national journalist is priceless, not many people have got that. But that's only as a result of the work that Gentoo Green were doing.

There was a deliberate attempt at Gentoo to shift understandings, both among staff and across the housing sector, of what a social housing organisation could do. In the initial phase of Gentoo's environmental activities,

the organisation was more concerned to build its profile and share its knowledge across the social housing sector - its institutional field - than within the city of Sunderland. One interviewee described this as 'associating ourselves with credible partners'. These included Gentoo's peers in housing and construction, the National Housing Federation (the trade body for housing associations), and the UK Green Building Council (UK-GBC).

At a city scale, though, there was a history of fractious relationships between Gentoo and Sunderland City Council, alluded to 'off the record' by several interviewees and summarised by one as a clash of cultures:

> Our relationships in the north-east could be better. And I think that's partly because we choose to do. And by that, when I say we choose to do, we choose to get on with it. However… I think that causes a lot of frustration.
>
> (Senior manager, Gentoo).

What is notable about Gentoo is the conscious way in which the organisation sought out peer experts to inform and legitimise its own ambitions. While these links do not delineate the boundaries and population of an epistemic community, they point to its existence and importance in informing Gentoo's approach and inspiring its vision. Influencing that community are an outlying group of 'inspirers', the likes of Tim Smit and Al Gore, whose speeches on climate change particularly impressed Gentoo's former chief executive. Central are professionals and experts who share a common set of knowledges and apply them through common fora such as UK-GBC, the National Housing Federation, and the Chartered Institute of Housing.

Although these communities interact with policymakers, they intervene in the policy process as external experts and remain beyond the direct influence of government (unlike Gentoo itself). UK-GBC for example, describes itself as 'advocating a progressive message to Government on green building policy issues' (UK Green Building Council, n.d.) and produced a ten-point plan at the 2015 general election under the slogan 'low carbon, high growth'.

Gentoo's financial crisis inevitably led to a reduction of its involvement in policy and knowledge transfer; fewer staff went to conferences and there was less capacity for speculative meetings with civil servants and environmental

experts. However, the role of peers, external experts and mentors was significant in embedding an environmental logic across Gentoo's work at an early stage, and interviewees expected this to continue in some form.

8.4.5 Career journeys as knowledge carriers

Another way of studying how concepts of a low carbon future travel is to examine the career journeys of key individuals. At Gentoo there was little internal expertise on environmental issues prior to the establishment of Gentoo Green, with the exception of one policy manager who had been tasked with producing an environmental strategy. A process of self-education by the director of Gentoo Green was followed by either promoting people into posts where they were expected to gain relevant knowledge, or by recruiting suitably qualified external candidates. 'I've always employed people who were better than me' is how the director described it.

The director's two key lieutenants were externally recruited: one had been in charge of environmental compliance at a major construction company, while the other had been managing director of a housebuilding firm and an adviser to Romag, the solar panel manufacturer subsequently acquired (and recently sold) by Gentoo. These individuals brought technical and commercial knowledge from the world of commercial construction, and Gentoo's environmental investment has been characterised by a focus on both applying environmental technologies and identifying commercial opportunities. Gentoo's experience is consonant with academic studies of the operation of expert communities within specific market clusters (Lefsrud & Meyer, 2012).

At MMU, one of the two top managers within the university's environment team had previously worked in university estates departments, and the other in local government on environmental management and energy efficiency. Both had higher degrees in environmental science, and this has been reflected to some extent in the predominance of physical interventions rather than a focus on social practices in MMU's environmental initiatives: improved building technologies and energy systems are at the core of its low carbon vision. However, this has been complemented by a growing emphasis on education for

sustainable development, particularly in response to the changing focus of wider epistemic communities such as EAUC and the National Union of Students.

Nottingham City Council, because of the politician-officer axis in local government, presents a slightly different picture. Lay politicians partner with officers who may often have a specialised career trajectory. The portfolio holder for energy and sustainability at the time of the research had been in leadership positions at the city council for 25 years, but had only relatively recently taken on this area of responsibility. One of the senior executives interviewed had spent most of their career in waste management. But there was some evidence of the incorporation of specialist skills from beyond local government: the head of energy and sustainability policy recruited in late 2015 had previously worked on similar issues as a civil servant.

In all three organisations, senior professionals have brought in sets of understandings and networks that are re-applied in new contexts. Organisational loyalties are coupled with an identification with a wider professional community. Professional rationalities are not transposed wholesale, but help to generate and reinforce a broad reservoir of shared values and expertise (Haas, 1992). In Boschma's terminology (2005) this produces cognitive proximities not just within sectors and localities but across them, infiltrating organisations with new and potentially alternative logics, professional understandings and orders of worth.

8.5 Towards possible worlds

A defining characteristic of refiguration, in Ricoeur's terms, is the opening up of possible worlds, an orientation towards a hoped-for future within a discordant present. Viewing the case study data through this lens, one must ask whether the changes achieved and envisaged within the three organisations orient actors towards possible futures more than to the preservation of the present. This question steps beyond issues of governance, which deal with how institutions are ordered and how they order others to achieve particular policy ends (Gibbs et al., 2002; Rutland & Aylett, 2008; Bulkeley & Betsill, 2013); and

beyond the instrumentality of transition management, which focuses on the tools and constellations of actors and interests that need to be in place to achieve policy goals (Voß et al., 2006; Loorbach, 2010). It asks whether and to what extent the articulation of a desired future is sufficient to shift perceptions of and orientation towards 'possible worlds' at an institutional scale.

The case study evidence allows this question to be explored in several ways. First, it raises the issue of the utility of disruptive change. Gentoo in particular engaged in a process of disruption, with the aim of transforming the organisation's culture. But is disruption a necessary or sufficient condition for the introduction of new logics? Geels's conclusion (2014) that 'regime destabilisation' may be required to replace fossil-fuel based sociotechnical systems with renewable energy-based systems would suggest that it is a necessary condition. But such disruption is more complex than a change of personnel or policy within an organisation. Turnheim and Geels (2013) suggest regime destabilisation requires three elements: external pressures that threaten an organisation's market, the erosion of legitimacy, and a consequent undermining of organisational commitment to the existing regime.

A second question concerns whether the introduction of new logics is a necessary or sufficient condition for purposive sociotechnical transition - could such change take place without the epistemological reordering implied by the hermeneutic cycle? And third, there is a question of the durability of refigurative processes, and whether new logics are capable of surviving adverse circumstances for long.

These issues matter because of the complexity and uncertainty of transition processes (Voß et al., 2006). Transition requires, at minimum, a reordering of politics, governance, behaviours and practices across multiple spatial and temporal scales (Bulkeley, 2005; Loorbach, 2010). To think of such changes purposively requires a sense of a destination and a roadmap - the rationales for change discussed in Chapter 5 (section 3.3).

8.5.1 Disruption and change

The former director of the Gentoo Green team was clear that her role was disruptive. Speaking after she left the organisation, she described her 'biggest legacy' as disruption, equating it directly with environmental progress:

> …what we achieved in Gentoo, you know, thousands of homes where we did retrofit measures, engaged thousands of tenants in the process, all of that PV, all of that carbon saved on an organisational level - it didn't cost that much, it just required us to do things differently. And that required me to be stroppy.

A senior executive at Gentoo described what it was like to be on the receiving end of such disruption:

> …it was always much easier for me to say yes to M. and then just ask her what she wanted, because, you know, she was like a bit of a tornado, really, in terms of her passion for the subject and her determination to see things through.
>
> (Executive, Gentoo).

Disruption has also been a factor in the changes initiated at MMU. An external stakeholder described the university as 'quite zealous' in implementing a programme of internal change. The founding story of environmental action at the university is one of disruption, led by students:

> …there's a bit of a story in that there was a group of students, or one in particular, that was very forthright with the vice-chancellor, in that, you know, why were we at the time so low in the league tables, People and Planet … there wasn't even an environmental manager in place I don't think at the time, and E. was recruited, got us further up the league table and then managed to put business cases together to recruit a team…
>
> (Senior manager, MMU).

Disruption may be visible and intrusive, but can also happen more subtly:

> But you know, we are a huge university, we've got 37,000 students or something, so there's an awful lot happening, and the senior team possibly would go into meltdown if they knew everything that was happening in the university.
>
> (Executive, MMU).

Those engaged in disruptive activities clearly feel these are required to achieve the ends they have in mind. But if disruption can appear to them a sufficient condition for refiguration on the basis of the changes achieved, whether it is a necessary one remains questionable. There are, after all, gentler

ways of thinking about creating an environment that fosters change, as one interviewee at MMU explained:

> …when you're making popcorn, not in the microwave but … popcorn from scratch, I'm kind of the heat there. The university's the space, the pan, and then I try to produce the heat for the popcorn to pop, that's what I do.
>
> (Professional, MMU).

At Gentoo and MMU, the story would not have happened as it did without the initial disruption. But the initial disrupters have moved on. At Nottingham City Council there was little evidence of disruptive activity. On this evidence intentional regime destabilisation may be helpful, but to achieve transition its scale and scope must be wider than observed within these case studies.

8.5.2 Change without refiguration?

A second question is whether refiguration, in the sense of a new view of the world with a concomitant shift in prevailing logics, is necessary to bring about transition. Carbon reduction need not demand a new worldview or environmental understanding. It can be presented as logical continuity, repurposing existing assets to suit new circumstances. At Nottingham City Council several interviewees presented their work in such a way, emphasising links with the past rather than a break from it:

> …we've kind of recognised that we've got a jewel in the crown in terms of delivering low carbon heating, we've got an aspiration to double the size of that district heating scheme, and clearly you need a fuel source to do that […] it's just taken 45 years I think for the council to realise that they're potentially sitting on a goldmine there in terms of being able to deliver low carbon affordable fuel, or affordable heating, to more than the five thousand households that currently take advantage of that system.
>
> (Executive, Nottingham).

Another interviewee described how Nottingham City Council uses 'our muscle and our reputation and our track record to lever in as much financial assistance as we can'. Transition on such a reading is not a refiguration in the face of discordance so much as a reinforcing of existing trajectories.

In contrast, at MMU one external stakeholder described an estates-led approach to environmental action as risking missing the real opportunities for change:

> It's a market out there. And the way they [universities] do that [gain market share] is by building blingy buildings and fancy student unions and that sort of thing. That's quite an old mentality, and I would say that's a deeply risky one in an age of digital, you know, anarchic learning models, will the university still be to the same degree in twenty years a physical place of learning? Probably not.

From this point of view, MMU's Birley campus and new business school building might be considered environmental risks rather than assets. If a building becomes unfit for purpose long before the end of its anticipated life, the carbon reduction embedded in its design is lessened accordingly. And the changes embedded in such buildings - low-carbon technologies and energy efficiency measures - need not imply a changed understanding of the role of the institution in shaping a low carbon society.

An alternative perspective is to view physical investments as the concrete outworking of a changed set of beliefs and understandings. Refiguration is embedded in material change, from this viewpoint:

> …this is the advantage of doing things to buildings, it's very hard to, you can't undo the environment management system at the Birley campus, so, you know, capital investment is relatively permanent.
>
> (External stakeholder, MMU).

The interview evidence quoted suggests that the tension between institutional change and institutional stability can be resolved, at least for some, by viewing change as logical progression, leaving institutional rationalities undisturbed. Others use the prospect of change to challenge institutional rationalities. Only in the second case does it make sense to talk about refiguration, although both approaches might bring about carbon reduction.

An interviewee at Gentoo emphasised the difference between the two:

> Without Planet Smart, without this absolute desire to see sustainability placed at the heart of an organisation, that doesn't change my thinking. You know, I could still have been ticking the box, doing ISO14001, and, and just fighting for those little step changes, but actually the relationships within Gentoo, without that absolute belief that [we can] reimagine the future, and what that means - not just talking about the

> ISO fourth value on a board somewhere for your induction, but absolutely bring that to life, that's probably the key…
>
> (Senior manager, Gentoo).

To reimagine the future does not imply arriving at a reimagined future. It does suggest, in line with Ricoeur's hermeneutics, that an emplotment is taking place in which the refigured present, despite its discordance, opens up new possibilities. But of the three case studies examined, the one where a transformed logic is most overt is also the one where the organisation's environmental achievements have been most threatened. That raises the issue of the durability of refiguration, its capacity to persist through the repetition of the hermeneutic cycle.

8.5.3 Is refiguration sticky?

Refiguration is depicted as a stage in a cycle, not as a destination. But for the cycle to continue, there must be a changed logic or worldview to influence the next iteration. To use a parallel from complexity theory, refiguration has emergent characteristics (Van de Ven & Poole, 1995): something occurs which, like evolution, cannot be reversed.

The strongest evidence for emergent rather than progressive change is at Gentoo and, to a lesser extent, at MMU. The strongest evidence for path dependency is at Nottingham City Council. But Gentoo's environmental programmes were abruptly curtailed by its financial crisis of 2015/16. Given the circumstances of extensive redundancies and reorganisation, interviewees were remarkably positive in their assessment of Gentoo Green's work. This may be an example of self-justification. But interviewees' descriptions suggest a degree of lasting impact.

That impact is partly from material changes that cannot be undone, but those changes are associated with a changed sense of what is possible:

> …it's brought a lot of kudos for the organisation, and in terms of what's left there now they know … that these things are possible. Six thousand homes have got PV, ten megawatt of PV in Sunderland. People told me the sun didn't shine north of Nottingham, they said that it won't work, you can't do it. We did it.
>
> (Executive, Gentoo).

Others mentioned the pledges made by staff in response to the Planet Smart initiative and their lasting effect on working practices. An external stakeholder commented on the links made between housing and health, and the work now being done elsewhere to build on the Boiler on Prescription programme. One Gentoo Green staff member gave their assessment of the lasting impact of Gentoo's activities:

> …it's that ability to show a social return on investment, you know, and that there are now five thousand schoolchildren engaged in the environmental agenda across this city because we've gone out and spoken to them. Dozens of homes improved environmentally, resulting in an 82% reduction in self-reported GP hospital appointments […] it's not just us talking about it or leaving it in the realms of those who, the educated few … who have a notion to be interested in this agenda, it's happening in homes which are in the most deprived wards in the country.
>
> (Senior manager, Gentoo).

By articulating a narrative of environmental leadership, organisations not only gain a reputational advantage but require continued action in order to retain that enhanced reputation. The result is a kind of lock-in that, though less visible than physical investments, may be as hard to shake off. At MMU the development of a reputation as a 'green university' affects networks and relationships at urban and sectoral scales.

Within the city of Manchester, for example, MMU is held up as a beacon of good practice, as one external stakeholder commented:

> …the progress that MMU's made has been quite incredible really, quite - you know, impressive doesn't do it justice, really, to see the journey they've gone on over a relatively short period of time, eight years I think since E. joined, to go from where they were, whatever that position was, to be the greenest university in the UK […] and what MMU represent to me is the kind of organisation that we want to see all across the city.

Similarly, MMU has attracted attention across the higher education sector, creating a reputation that employees then have to live up to:

> …we've gone through this journey where we've basically gone from nothing to everything in terms of environmental sustainability, and what that has done is really increased our prominence within the sector as a whole, so we're now sort of recognised as a university that would be at the forefront, shall we say, of stuff that goes on both inside and outside the curriculum with regard to the environment and society…
>
> (Professional, MMU).

By embarking on a journey of environmental action, organisations generate the expectation of a destination. As actors orientate themselves towards such a destination, they both distinguish it from the previous trajectory and open themselves to the discordance of unfulfilled expectations. At that point of discordance, the options are to retreat or press on. In this sense refiguration is sticky, in that there is a reputational and cognitive cost in returning to the *status quo ante*.

This may not be the same as a complete shift in institutional logics, but it implies that the new logic is here to stay. In the next chapter I consider the persistence or modification of institutional logics in more detail.

Chapter 9: Logics, values, interpretations

9.1 Logics and limitations

This thesis began by asking how actors in anchor institutions construct and reconstruct low carbon imaginaries, and how such interpretations enable or curtail possible futures. I have shown in the previous chapters how constructions of the future are developed through institutional discourse and constrained by institutional logics, and how they can limit the futures achievable by contributing to 'regime resistance'. I have also shown how new ideas can emerge and become legitimised through the transfer of knowledge and norms.

Accounts of low carbon futures are a question not only of the power of narratives but of the effects of logics, the frameworks within which institutions and institutional actors decide which actions are appropriate and desirable. Such logics work at the level of society and of institutional fields (Friedland & Alford, 1991; Thornton et al., 2012). But institutional logics also guide the actions of individual actors, reinforcing or challenging their 'orders of worth' or guiding values (Boltanski & Thévenot, 2006; Friedland et al., 2014).

Institutional logics are not reified entities (Hallett & Ventresca, 2006; Zilber, 2017) that operate in a deterministic way. Rather, they enable us to understand at a macro scale the 'logics of appropriateness' or ordering categories embodied in the rules and routines to which actors turn at times of 'conflict and ambiguity' (March & Olsen, 1989, p. 24).

In Chapter 5 (section 2.1) I posed the question of how actors' engagements with institutional logics affect the interpretation of low carbon futures. I suggested that actors' ability to bring about institutional change is limited by their acceptance of prevailing institutional logics. If this is the case, a logic operating at a field or institutional level - one associated with the 'status function' (Searle, 2005) of an institution - is more likely to be persuasive and achieve legitimacy (Meyer & Rowan, 1991) than an insurgent logic advocated through the disruptive actions of institutional work. In the language of

transition studies, such insurgent logics are likely to encounter 'regime resistance' (Avelino & Rotmans, 2009; Geels, 2014).

In this chapter I draw on a secondary analysis of my fieldwork to identify and discuss the logics and values expressed by actors, showing how they draw on a range of logics to explain their understanding of and support for institutional objectives, and how actors' interpretations of the future align with organisations' prevailing logics.

I then address the third of my research questions, discussing the role of epistemic communities in shaping interpretations of the future. I explain how networks of peer experts function in inspiring, legitimising, challenging, limiting and facilitating potential transitions. Epistemic connections, I argue, are essential to nascent 'transition arenas' (Loorbach, 2004; 2010) where low carbon futures can be tested and trialled.

In the third section I bring together the insights of transition studies, institutional logics and interpretive theory to propose an integrated framework for the study of transitions in an institutional context. The three phases of the hermeneutic cycle, I suggest, can be aligned with the perspectives on institutional change offered by institutional logics (Thornton et al., 2012) and the phenomenon of 'regime resistance' in transition studies. I propose a processual framework that is neither linear, as in transition studies, nor circular, as in traditional hermeneutics, but helical, moving forward and upward through repeated cycles. I consider the evidence for such a 'hermeneutic helix' within the three case study organisations.

9.1.1 Limitations of the research: a caveat

I discussed the progress of my research and the iterative approach to formulating theory in Chapter 5 (section 2). Researching the social world involves a constant tension between possibilities and limitations. The more the researcher discovers, the more enticing possibilities open up, and the less time and scope there is to explore them.

My own turn towards institutional scholarship and the institutional logics perspective developed after the first year of my research and when I had already selected the three case studies and begun fieldwork in one of them. Flyvbjerg (2006) describes 'context-dependent knowledge' as an advantage of case study methods; however, it can also be messy. The role of gatekeepers and access to participants, political and organisational sensitivities, and issues of capacity and time all constrain the breadth and depth of research (Mikecz, 2012).

I have thus focused where I felt the greatest contribution to knowledge could be made in the time available. I have concentrated on the theoretical and the broad picture rather than the fine detail, and the discussion that follows comes with the caveat that I am seeking to present themes and principles rather than a comprehensive analysis of the data. This thesis should thus be seen as an initial step in exploring how the study of institutional logics at different levels (field, organisation and actor) and different scales of transitions (landscape, regime and niche) might be woven together and modelled as a dynamic process using interpretive scholarship as a common thread.

9.2 Institutional orders and actors' orientations

9.2.1 Alignments and orientations

Institutions cannot function without actors engaging in 'intelligent, situated institutional action' (Lawrence & Suddaby, 2006, p. 219). I have therefore sought to bring together the institutional logics perspective with the insights of scholars of 'institutional work' by identifying both the logics associated with institutions at a macro or field level, and the values associated with individual actors as expressed through interviews. These are summarised in Table 9.1.

The interview topic guide (Appendix A) began with a series of questions focused on sensemaking. I asked interviewees about their careers, particularly in relation to environmental work, and their concepts of a low carbon future. These questions generated discussion on values and logics and illuminated actors' and institutions' orientations. Responses to later questions about

challenges to change (section 4 of the topic guide) and resolutions to challenges (section 5) helped to qualify these initial discussions of possible futures.

In Chapter 3 I outlined different scholars' approaches to multiple logics, expressed through the idea of the interinstitutional order (Friedland & Alford, 1991) or orders of worth (Boltanski & Thévenot, 2006). These were presented in Table 3.1. Drawing on my research data, in Table 9.1 I compare the 'orders' of society outlined in scholars' theoretical work (the material in Table 3.1) with the empirical findings of my case studies, aligning comparable values and orientations as accurately as a table (and the fuzzy nature of values themselves) will allow.

TABLE 9.1. INSTITUTIONAL ORDERS COMPARED WITH ACTORS' EXPRESSED VALUES

<table>
<tr><th colspan="12">Institutional orders, 'orders of worth' and values articulated by actors compared with theoretical perspectives</th></tr>
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<tr><td>Institutional orders (Thornton, Ocasio & Lounsbury, 2012, p.73)</td><td>Market</td><td colspan="2">Corporation</td><td colspan="3">Profession</td><td colspan="2">State</td><td>Community</td><td>Family</td><td>Religion</td></tr>
<tr><td>'Six worlds' - orders of worth (Boltanski & Thévenot, 2006, pp 159-212)</td><td>Market</td><td colspan="2">Industrial</td><td colspan="2">Fame</td><td colspan="4">Civic</td><td>Domestic</td><td>Inspired</td></tr>
<tr><td>Core logics of case study institutions</td><td colspan="2">Market/commercial logic: Gentoo, Nottingham, MMU</td><td colspan="2"></td><td colspan="5">Professional/civic logic of learning and teaching (MMU)
Social welfare logic: Gentoo, Nottingham</td><td></td><td>'One planet' environmental logic: Gentoo</td></tr>
<tr><td rowspan="2">Transition logics: Values and orientations expressed by interviewees</td><td colspan="2">Green capitalism (8.7%)</td><td colspan="5">Knowledge, information, education (21.7%)</td><td>Political or governance change (4.4%)</td><td colspan="2">Social welfare, social justice, quality of life, quality of place (37%)</td><td>Ecological values, environmental norms (8.7%)</td></tr>
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Notes:
1. The boundaries between different transition logics, and the alignment of those logics with the various expressions of institutional orders and 'orders of worth' should be thought of as fuzzy and permeable.
2. The shading indicates the relative emphasis on transition logics expressed by interviewees. This is based on analysis of 46 interviews where actors discussed their notions of a low carbon future, with percentages of interviewees in brackets. Totals equal more than 100 because several expressed a combination of values and orientations.

The fourth row of the table shows the core logics identified within the case study institutions, which were outlined in Chapters 5 and 6. While the market logic and the logic of social welfare evident from the case studies align closely with the theoretical literature, a logic that assigns value to the planetary environment is harder to categorise: it contains elements of civic or community logics through concepts of social responsibility, but also draws on an 'inspired' order of worth, one that might be associated with quasi-religious values that claim an external or ecocentric measure of the common good. Thévenot (2002) has articulated initial formulations of a 'green order of worth', while 'deep

green' environmentalists talk of 'Gaia' as symbolising the values of self-renewing ecosystems (Eckersley, 1992), which may entail ideas of human economic 'degrowth' (Naess, 1973). Blok (2013), however, has pointed out the difficulties involved in pinning down 'the many worths of nature(s)'.

The fifth row compares these orders with the values or orientations expressed by interviewees. Responses range from what might be dubbed 'green capitalism' to a concern with nature as a good in itself, or what one participant described as a 'spiritual side' of environmentalism. By far the largest groups of responses discussed possible futures in terms of efficiency and technological improvement - aligning with logics of market and state efficiency and effectiveness - and in terms of social welfare and quality of life, aligning with logics of civic responsibility and community wellbeing. Logics aligning with ideas of democratic participation, the nuclear family, and religion or inspiration were rare.

Interviewees did not explicitly align their own orientations with those of their employers. Those who expressed more ecocentric views, however, tended to be conscious of potential conflicts with their employers' positions. One interviewee at MMU, for example, took issue with the perceived reduction of 'sustainability' to carbon control:

> I do not frame what I do under the climate science or the carbon debate, and I consciously try to avoid doing so… I think biodiversity is an issue in itself. We have to address it - obviously all issues overlap and they're interconnected, fine, but we couldn't start defining, for example, trees in the cities as helping to absorb carbon. That's a ridiculous argument to me.
>
> (Professional, MMU).

In general, actors gravitated towards the prevailing logics within their organisation; the data support March and Olsen's concept (1989) of logics of appropriateness. The evidence suggests that these logics of appropriateness not only reflect but reinforce prevailing logics, ensuring low carbon ambitions are worked out in ways that both frame and confine change within the scope of those logics.

Table 9.2 provides examples to illustrate how the categories of 'transition logics' outlined in Table 9.1 were derived from interview data. While a tight

focus on responses to interview questions cannot be considered definitive of actors' positions or motivations over time, it shows how actors construct futures by drawing on common logics manifest within their institutional environments, and how such ideas of the future align with institutions' own stated functions and goals. With a few exceptions, there is little in actors' articulations of a low carbon future that disrupts institutional norms and logics.

TABLE 9.2. ACTORS' DRIVERS OF TRANSITION

Transition logics: examples from interview data	
Green capitalism (n=4)	'…there's a competitive advantage of being responsible as a business […] Responsible businesses, I know, are more profitable, and being environmentally responsible is part of that.' '…if you look at some of our economic development agendas, we pump a lot of money into the setting up of what's called a cleantech network […] we specifically targeted the green tech sector where we've established a number of incubation opportunities…'
Technological change & innovation (n=23)	'…sometimes you hear about climate change and we've got to stop doing this, stop doing that, whereas actually I see it as actually, we're not going to go backwards, we need to look at technology and innovation to keep moving forwards…' 'Technology's moving on. I hear of technology where they're trying to build solar power generation into glass windows… So technology may well get to the point where who knows what we can do?'
Education and information (n=10)	'I think that education is the most important thing, because it's the one tool that we have to tackle the root of the problem…' '…it's about informing people of the effects, but also I try and focus on the positive effects of their behaviour, and how a little difference can make quite significant [change].'
Policy and government (n=2)	'It's going to look like cross political party agreement that we need to do something which will take us beyond five year cycles and out of short term, vote-winning statements.' '…it's a pretty depressing kind of picture on the policy front, but government is still committed to the outcomes from Paris, the Climate Change Act, and so on … and I think government will have to address them.'
Social welfare & wellbeing (n=17)	'…it is absolutely about conserving the

	financial resources [residents have] got and having a better quality of life as a consequence of that.' '…on one side it is the efficiency, but on the other side it's just about living a better life…'
Welfare of future generations, limits to growth (n=8)	'… environmental modernisation and carbon reduction […] they are technological solutions to problems that need more diverse type of solutions, and they promote "keep doing whatever you're doing, so long as we capture the carbon and we store it in the earth, we're fine".' '…there's still a view that consumption at all costs is the driver of wellbeing and growth and success. And politicians aren't willing to face up to the fact that the earth's resources are finite.'
Ecological values, rights of nature (n=4)	'…it started there [for me], understanding how you live in the forest […] so that was a very strong connection between me and nature and between me and indigenous people and communities…' 'My main role at the moment is the biodiversity element. So it is a lot to do with ecosystems, with multiple benefits of ecosystems… So it's that reconnecting people to nature as much as possible…'

Note: The categories of logic or drivers of transition are broadbrush groupings derived from interview data. Interviewees were not asked to identify themselves with particular transition logics. Several expressed views in line with more than one of the logics identified in the table. The quotes in column 2 are examples of the statements made by interviewees that I identified with each logic.

9.2.2 The boomerang returns, but not quite

Overall, the suggestion that actors tend to align their values with prevailing institutional logics is confirmed by interview data. Institutions faced with alternative transition options tend to make conservative choices, as evidenced in Chapter 7.

But despite the general alignment of interviewees' understandings of a low carbon future with prevailing logics, the articulation of environmental goals at an organisational scale invited disturbance (Chapter 8). An environmental logic could be seen as a newly-articulated 'societal logic' with the potential to generate new 'organising principles' for social activity (Ocasio, Mauskapf, &

Steele, 2016). The challenge of climate change was no longer detached from the institution, but something that demanded changed practices and priorities.

Ricoeur's notion of refiguration is one of aporia becoming productive: from the 'emplotment' engaged in by actors in the face of events, new forms of action may emerge. The intersection of the world of the text and the world of the reader generates a new view of life, one in which the reader overwrites the text with their own story. This in turn generates new cycles of prefiguration, configuration and refiguration.

The interpretive tradition in institutional theory similarly suggests a recursive interplay between logics and events (Clemente, Durand, & Roulet, 2017); critical events 'raise questions about the value or appropriateness of a logic' (p. 24), exposing conflicts and contradictions. Such conflicts may be addressed and resolved through praxis, the practical compromises and dialectics of everyday institutional life (Seo & Creed, 2002) or through the eventual adoption of a transformative logic that melds and overwrites prior logics (Battilana & Dorado, 2010; DeJordy et al., 2014).

The case study evidence suggests that the institutional work of actors can both challenge the prevailing logics of an organisation through advocacy and argument (the early history of environmental action at MMU, for example), and frustrate efforts to change or transform prevailing logics (the 'kettlegate' episode at Gentoo). Similarly, the continuity associated with embedded logics can stifle or restrict attempts at innovation.

The 'boomerang' effect of prevailing logics (Chapter 5) is not the whole story. Grin et al. (2010, p. 109) define a transition as 'a fundamental change in structure, culture and practices'. This has clearly not happened at any of the case study organisations. But there is evidence of change, and change that would be difficult to undo. The institutions researched in this project are full of actors who tussle over constructions of possible futures (Mische, 2009; 2014) testing out new ways to connect purposes with practices. Prevailing logics may still hold sway, but they are no longer taken for granted. Transition pathways may be constrained, but they are not blocked.

9.3 Portable logics: from orientation to diffusion

Having considered how actors' expressed values align with institutions' orienting logics, I now turn to the diffusion and translation of logics and values at a wider scale through the work of epistemic communities. I explore whether changes initiated within a locality should be considered as effects or outcomes of local, geographically contained factors, or rather as local effects of the interplay of dispersed and place-agnostic knowledge networks. In Boschma's terms (2005), the proximities discussed are cognitive, organisational and institutional rather than spatial.

I begin with a brief reprise of the scholarship on how meanings and policy positions are established through knowledge or discursive networks. I then discuss how such networks have been revealed through the three case studies, and outline five functions they serve in the context of potential transitions. I conclude by sketching out how by paying attention to epistemic networks, policy actors may identify pre-existing or latent 'transition arenas' (Van Buuren & Loorbach, 2009; Loorbach, 2010) rather than seeking to impose them through transition management or governance mechanisms.

9.3.1 Networks of meaning

Cognitive, organisational and institutional proximities are all concerned with the establishment and persistence of meanings and values. This happens through shared sets of beliefs, organisational isomorphism (DiMaggio & Powell, 1983), and an adherence to 'orders of worth'. Such connections are 'grounded in forms of talk' (Kirchner & Mohr, 2010, p. 559) by networks of actors within particular domains (Harrison White, 1992).

In White's relational sociology, the meanings and values at stake within a collective are generated intersubjectively through the discourse and practices of actors. In the case of carbon reduction, one might follow the interactions of actors to show how concepts of being 'green' or 'environmentally friendly' are associated with certain organisational practices and associated forms of talk (around paper recycling, modes of travel to work, switching lights off) rather than with others (such as working from home, holding meetings via Skype, not

attending particular events). Relations between actors generate 'stories' or concatenations of meanings, which together can be described as a 'culture' (Godart & White, 2010). These stories or narrative identities constrain and enable social action (Somers, 1994). They allow actors to draw on and combine different logics and beliefs. Godart and White argue that at an organisational scale, institutions are akin to networks and 'rhetorics' to domains (p. 580): 'they constitute the horizons that are taken for granted, a space of possibilities for fresh action that can also hinder fresh action'.

The concept of discourse coalitions (Hajer, 1993; Bulkeley, 2014), noted in Chapter 4, draws on this micro-level interaction but places it in the context of policy development at a macro level. Discourse coalitions analyse networks in terms of their discursive construction of policy options. Shove (2010) describes discourse coalitions as 'dense, interconnected networks not only of people but also of concepts, terms, and intellectual frameworks'. While Godart and White (2010) stress fluidity and movement between fields, the discourse coalitions perspective seeks out stabilising and solidifying factors. If discourse coalitions succeed in establishing policy, they become institutionalised.

An epistemic community (Haas, 1992) brings together the macro and the micro, creating a forum where cultures or shared causal and principled beliefs coalesce (see Chapter 5, section 2.4). As Romero Lankao (2007) notes in her assessment of climate action in Mexico City, such communities 'construct a shared view' of the problem. The literature on epistemic communities suggests that these are relatively tight-knit groups of actors who can operate between and beyond the confines of particular institutions. Within these expert circles they are free from some of the constraints of their employers and able to fashion, critique and lobby for particular agendas alongside peers in other organisations. Their mutually-validated expertise positions them favourably to influence policy agendas and inform institutional strategies (King, 2005; Daniels & Endfield, 2009). Such communities may emerge from existing networks, taking on an autonomous agenda-setting and framing role (Gore, 2014) and wielding influence by dint of their 'authoritative claims to knowledge' (Raven et al., 2012).

In setting out her concept of 'discursive institutionalism' Schmidt (2008) links epistemic communities, advocacy coalitions (Sabatier & Jenkins-Smith, 1993) and discourse coalitions under the umbrella of the 'coordinative discourse' of the policy sphere, which 'consists of the individuals and groups at the centre of policy construction who are involved in the creation, elaboration, and justification of policy and programmatic ideas' (p. 310). Such processes of creation, elaboration and justification, if successful, I suggest, have the potential to modify and repurpose institutional logics. The case study evidence shows that these processes take place in specific groups that have an organisational form, but are not confined to such groups: they also occur within broader and more informal peer networks. I describe these as epistemic networks to indicate this slightly looser construction of knowledge networks.

9.3.2 Communities of interpretation

In Chapter 8 (section 4) I examined the 'communities of change' that had grown up around each organisation's work on environmental transition. Haas (1992, p. 3) defines an epistemic community as 'a network of professionals with recognised expertise and competence in a particular domain and an authoritative claim to policy relevant knowledge'. These professionals provide information to state actors and policymakers that helps them manage uncertainty. In selecting and presenting relevant information, epistemic communities also act as interpretive communities, solidifying meanings and generating shared understandings of policy priorities.

Epistemic communities need not be coterminous with organisations, but from the three case studies observed there is evidence that they may take organisational forms. The Environmental Association of Universities and Colleges (EAUC) and the UK Green Building Council are examples from this research. Epistemic communities may also develop out of existing organisations, as in the case of APSE Energy, a subset of the Association for Public Service Excellence.

EAUC, UK-GBC and APSE all show a strong correlation with the Haas formulation. At EAUC and UK-GBC the causal and principled beliefs, the

consensual knowledge and the shared interests frame carbon reduction as a problem of technologies and practices. APSE frames carbon reduction within the context of efficient and financially sustainable public services, leading to an emphasis on commercialisation within its communities of practice.

The case studies suggest that actors seeking to enact low carbon transitions at an institutional scale align themselves with appropriate epistemic communities, as well as tapping into broader cognitive proximities (Boschma, 2005). This does not mean that the whole institution aligns itself with an epistemic community or that institutional leaders are necessarily conscious of the connection; neither does it mean that action at an epistemic community level precedes action within a locality. The joining-up appears to be mainly at a senior and middle-management level rather than coming from chief executives, local authority leaders or university vice-chancellors. The evidence points to close ties between expert groups and the employees most closely associated with transition strategies. Employees use expert groups to validate their own knowledge, to learn from their peers, and, perhaps most importantly (and evidenced most strongly at MMU and Gentoo) to legitimise their activities - both among their peers, and within their own institutional hierarchies.

These expert communities of interpretation mould transition agendas in five ways in the three case studies. First, they act as sources of inspiration. At Gentoo, initially, this was a case of both identifying suitable partners - including other housing associations already seen as leading on sustainability - and identifying with them. In the case of UK-GBC this meant paying a membership fee to access a community perceived as leading expert practice in the built environment. At MMU, association with People and Planet and EAUC enabled actors to see how their peers in other institutions were receiving accolades for achievement, generating a bank of adaptable ideas and practices.

'Inspiration' generates a common stock of 'interpretive repertoires' or familiar tropes (Wetherell, 1998) on which actors and organisations draw to explain and justify their policies. These include themes of financial and resource independence in local government, championed by APSE and pursued by Nottingham City Council; themes of energy efficiency and technological improvement, advanced by UK-GBC and deployed in Gentoo's programmes;

and themes of environmental awareness as preparation for the workplace, promoted by EAUC and the National Union of Students and taken up by MMU. Through this mutually reinforcing role organisations become more closely connected with their peers and thus with a wider network of organisations sharing a similar outlook. In each case study interviewees cited examples of peer organisations they drew on for inspiration or good practice. These included Bristol City Council (mentioned frequently at Nottingham); the University of Plymouth, highlighted at MMU; and Affinity Sutton, a housing association cited by several interviewees at Gentoo.

Second, epistemic networks provide a source of legitimation. Receiving a Green Gown award from EAUC, as a senior manager at MMU put it, shows 'you are doing some good stuff'. MMU has won Green Gown awards for, among other things, institutional change and student engagement. Such recognition encourages staff within the university to extend their interpretation of carbon reduction beyond issues such as building design and energy consumption. For other actors in Manchester, MMU is a source of 'countless good news stories'. Nottingham City Council is used as an example of good practice by APSE Energy, legitimising its activities both to potential sceptics within the city council and to other local authorities. Gentoo's appearance at events such as Ecobuild and the National Housing Federation conference have lent credibility to its initiatives, both among peers and internally.

This legitimation is reinforced through regular conferences, study visits, and promotion of 'best practice'. Gentoo has collaborated with Nottingham City Homes and Bangor University to research energy efficiency programmes, especially its Boiler on Prescription initiative. MMU has showcased its building technologies, hosting visits to its business school and its Birley Fields campus. Through APSE, Nottingham City Council has promoted large-scale solar installations at leisure centres to other local authorities.

Third, epistemic networks provide a source of critique and challenge, galvanising organisations to strive for greater achievements. Awards and league tables discourage complacency. Organisations are encouraged to measure themselves against their peers and act if they fall short. At MMU, an executive staff member contrasted the university's public leadership on

sustainability with the direct involvement of vice-chancellors at other universities, such as Plymouth, in environmental initiatives.

Fourth, communities of interpretation can set limits to concepts of transition, excluding or backgrounding particular discourses and conversations. The dialogue that does not happen may be as important as that which is heard, seen and publicised. APSE's focus on commercialisation and financial stability within local government, for example, excludes questions of 'prosperity without growth' (Jackson, 2009). Dialogue within UK-GBC focuses on the commercial construction industry as a prime vehicle for carbon reduction through investment in new technologies, but overlooks the ways in which the residential housing market disincentivises investment in energy efficiency (Adan & Fuerst, 2015).

These conceptual limits are not rigid, and may change as new thinking gains traction. EAUC has shifted from a primary focus on building and energy technologies to one on education and learning, and stakeholders are beginning to ask whether universities' aggressive investment in real estate is appropriate for an emerging age of digital learning. If such a conversation takes hold, there is a prospect that universities may shift their carbon reduction focus from an emphasis on erecting new, lower-energy buildings and begin to examine whether such buildings are necessary.

Fifth, epistemic networks facilitate a flow of staff and knowledge between organisations. MMU's lead manager on sustainability was already a member of EAUC when recruited from another university. Gentoo's former operations director was recruited because of his involvement in renewable energy in the construction industry. Nottingham City Council's head of energy projects was already involved with APSE Energy when recruited from another local authority.

These five features of inspiration or vision, legitimation, challenge, limitation and facilitation dovetail with the conditions for transition identified in the literature on sustainability transitions (Grin et al., 2010). An 'arena' needs to be established and an agenda set (vision); experiments need to take place and

learning must be shared (legitimation and knowledge transfer); and the process must be monitored and adjusted (challenge and facilitation).

9.3.3 Latent transition arenas

The concept of transition arenas stems from the vision of transition management developed by scholars including Berkhout et al. (2003) and Loorbach (2004, 2010). Transition management is an instrumental approach that combines the multi-level perspective on transitions with purposive governance. It could be described as a form of intentional evolution, in which actors and circumstances are manipulated to achieve desired outcomes. Loorbach (2010, p. 172) describes four components of the transition management cycle:

> (1) structure the problem in question, develop a long-term sustainability vision and establish and organise the transition arena; (2) develop future images, a transition agenda and derive the necessary transition paths; (3) establish and carry out transition experiments and mobilize the resulting transition networks; (4) monitor, evaluate, and learn lessons from the transition experiments and, based on these, make adjustments in the vision, agenda, and coalitions.

The transition arena is formed by recruiting a select group of individuals chosen for their 'competencies, interests and backgrounds', working alongside 'frontrunner' organisations from government, commercial firms, NGOs, academia and 'intermediaries' (*ibid*, pp. 174-5). Within such arenas 'transition visions are explicitly seeking conflict with vested interests and powers'. Loorbach describes this model as reflexive rather than deterministic, but implicit is a convening body and a programme to which transition actors will commit time, resources and reputation. While such intentional arenas have been formed in several European locations, the model has not yet gained traction in the UK or globally.

The relationships explored through the case study interviews do not amount to transition arenas as conceived by transition management theorists. However, they contain some comparable elements: networks of expert influencers, a 'frontrunner' organisation that is prepared to invest human, financial, physical and reputational capital; a web of partners at different scales with whom knowledge and experience is shared; and an articulation of transition that, to a

greater or lesser extent, challenges the assumptions and practices of regime actors.

These situations are messier and more fluid than the model proposed by Loorbach. While there may have been an initial policy impetus from the state, and continuing international pressure in the form of the Paris Agreement on carbon control, the quasi-arenas apparent in the case studies have neither been initiated by state actors nor are currently promoted by them. The agenda, such as it is, has arisen and been supported at an institutional level, both at an organisational and at a sectoral scale.

There are indications that the situations and relationships revealed in the three studies have the potential to act as crucibles for transition, albeit limited in scope and ambition. In each case there are links with local partners, with wider epistemic networks and - to differing degrees - with government and with policy communities. Each case study organisation can tap into sources of knowledge and expertise to inform, encourage and validate its programme of action. As they proceed along preferred transition pathways and engage in projects (or 'niche experiments') each is likely to come into conflict with vested interests.

The growth and continuity of relevant epistemic communities, especially EAUC with its international links and validation through awards ceremonies, conferences and exchanges, presents the possibility of alternative forms of transition steering at arm's length both from the sites of experimentation and from the state. Epistemic communities and their wider networks present intellectual niches in which experimentation is encouraged and rewarded (Grin et al., 2010). They offer a world of locally enacted but remotely conceived reinterpretations of practices, purposes and - ultimately - the positioning of institutions themselves.

However, the limits of such fora should be recognised. While supportive policymakers might prefer to identify nascent transition arenas within the webs of connections discussed above, rather than seeking to create transition arenas from scratch, a fundamental caveat must be addressed. As Scrase and Smith (2009) put it, the question remains of whether transition management can really

challenge the structures it hopes to transform. A more flexible approach, attentive to the 'embedded agency' (Seo & Creed, 2002) of institutionally situated actors, I argue, may be more suited to the variety and complexity of transition scenarios and pathways. I sketch out such a framework conceptually in section 9.4, and suggest how it can be applied practically in Chapter 10.

9.3.4 Epistemic networks

If epistemic communities can mould transition agendas and contribute to latent transition arenas, does that make them a necessary condition for transition? While the case study evidence supports this in part, it is not definitive.

Looking first at place-based networks, Gentoo's experience would suggest these are not a necessary condition for transition. Gentoo was able to achieve a national reputation and some significant local results without strong partnerships at an urban scale. Its difficulties arose not because of local problems but as a result of events at a national level. Nottingham's experience, conversely, highlights the importance of locality; national peer-based communities have helped to legitimise the city council's activities but did not help to instigate them. At MMU, peer communities were more prominent than place-based networks, although both played a part.

Peer networks, however, distant or local, were a significant feature in disseminating and legitimising narratives of environmental leadership in each of the case studies. Returning to Boschma's categories of proximity, it can be postulated that cognitive, organisational and institutional proximities contribute to the advancement of transition visions. Of these, cognitive or epistemic proximities are the necessary condition, due to their broad legitimising role. These proximities typically connect via epistemic communities operating at a national or international scale, but geography is less important here than the pooling of knowledge and interpretation.

Epistemic networks (rather than 'epistemic communities') are a necessary condition for transition and for the modification of prevailing logics because

they stimulate institutional porosity, permeating institutions with new forms of knowledge and providing a forum to validate and approve 'best practice' (Bulkeley, 2006; McCann, 2008). Without such legitimised knowledge, institutions would face the prospect of 'reinventing the wheel' or remain dependent on the inconsistent messages and priorities signalled by government policy and funding. These peer networks not only provide cover for divergent and innovative knowledges, but may actively work with government and governance agencies to embed such knowledges in policy (Gough & Shackley, 2001; Lovell, 2015). At the same time they have the potential to act as brakes on transition, establishing a durable consensus around particular forms of knowledge and practice. Empirical studies focused closely on the operation of such networks in the context of low carbon transitions would help to shed light on this possibility.

9.4 An interpretive institutionalism for transitions

Within this study, the 'reader' who configures experience and refigures the world through engagement with the 'texts' of possible futures (Ricoeur, 1991) is also the institutional worker who engages in creating, maintaining and disrupting institutions (Lawrence & Suddaby, 2006). In doing so, readers/workers adopt, adapt, challenge or change the logics that govern their actions (Currie & Spyridonidis, 2016; Vermeulen, Zietsma, Greenwood, & Langley, 2016).

By focusing on these processes, one can now begin to integrate an understanding of institutional logics and the insights of Ricoeur's hermeneutics into the processual model offered by Geels's multi-level perspective (MLP). In this way the MLP may be drawn back from some of the abstractions of complexity theory, innovation and co-evolution to emphasise that what is being described in transition models is a web of intelligent interactions between human actors and the institutions that human actors create in order to structure and lend sense to social life. A focus on institutions and interpretation brings society back in (Friedland & Alford, 1991), highlighting the socially constructed

and meaning-generating processes involved in articulating and implementing purposive transitions (Geels, 2010; Avelino & Grin, 2017).

9.4.1 The multi-level perspective and regime resistance

Geels's diagram of the multi-level perspective (Figure 2.1, Chapter 2) visualises a dynamic process of change in which innovations at niche level evolve into new sociotechnical configurations. The combined pressures of landscape-level changes over a period of decades and rapid innovations within niches open up windows of opportunity within dominant sociotechnical regimes, through which long-term changes may occur. In this model actors and institutions are backgrounded, and the focus is on processes. The development of Geels's framework into a model for 'transition management' (Berkout et al., 2003; Voß et al., 2006) brings actors and institutions in, but in a way that has been criticised for being overly deterministic and technocratic (Shove & Walker, 2007; Scrase & Smith, 2009). Transition management assumes that purposive transitions can be enacted if the necessary conditions are put in place (Loorbach, 2010). Unpredictable effects of power and politics can be airbrushed out of this model.

Transition theorists are, however, aware of the conflicts implicit in concepts of sociotechnical change. Such conflicts are situated at the regime level and transitions are conceptualised as regime shifts (Geels, 2010). As noted above, Loorbach (2010, p. 175) comments that transition visions 'will oppose expectations and visions of regime actors', and so 'are explicitly seeking conflict with vested interests and powers'. In this research I situate the 'regime' level at the scale of the institutional field - or, more accurately, the web of institutional fields that sustain sociotechnical systems. 'Regime resistance' can occur within any part of this web: a regulatory body in Gentoo's case, or an agenda of commercialisation (in local government) or expansion (in higher education) that may be incompatible with environmental priorities. The 'niche' is the location where a transition vision originates and develops. In practice, it may be more accurate to say that visions develop in interconnected niches: at MMU, for example, one could describe the university's environmental team, the

university itself when considered in the context of its institutional field, and the peer network centred on EAUC as a group or network of niches.

Recent work seeks to reframe ideas of lock-in (Unruh, 2000) and regime stability as active resistance by regimes to ideas of fundamental change (Geels, 2014), operationalised through power and politics. Geels suggests 'politically-inspired regime destabilisation' may be necessary to counter such regime resistance. There has been little research into such destabilisation to date; an exception is Turnheim & Geels's historical study of the British coal industry (2013).

9.4.2 Institutional logics and resistance to change

The notion of regime resistance takes us back to institutions, and institutional logics. Institutions resist change not only because they are designed to ensure stability, but also because they accumulate structures, cultures and rituals that support institutional endurance (Meyer & Rowan, 1991). The notion of recursive logics articulated in Chapter 5 encapsulates a central aspect of this resistance. Giddens (1984) describes social structuration as recursive; actions and institutions are 'recursively related' (Barley & Tolbert, 1997; Lawrence et al., 2009).

Ideas of recursiveness and resistance problematise the possibility of institutional change. Institutional scholars are acutely aware that changes do take place, and at deep levels: the issue is how to understand and explain them. The institutional logics model suggests that new ideas and ideologies are relatively hard to introduce because they challenge existing logics. Actors make sense of the world through institutionally-generated frames of reference that precondition their choices (Thornton et al., 2012, p. 54). These institutionally-generated frames of reference are adopted, melded, and adapted by actors when seeking to explain and justify their actions and beliefs (Boltanski & Thévenot, 2006).

Change is therefore seen as a result of the clash and compromise of conflicting or competing logics (DeJordy et al., 2014). Theories of institutional

work (Lawrence & Suddaby, 2006), micro-level institutional practice (Smets et al., 2012; McPherson & Sauder, 2013), and institutional entrepreneurship (Leblebici et al., 1991; Fligstein, 1997) highlight the intentional role of actors in initiating and participating in divergent change. Seo and Creed's concept of embedded agency (2002) neatly summarises the tension between logics and institutional activism; their focus on praxis as the core 'mediating mechanism' of change reflects the concerns and focus of institutional work scholars.

Suddaby and Greenwood (2005) focus on the role of 'rhetorical strategies' in legitimising 'profound institutional change'. Thornton et al. (2012) and Lowndes and Roberts (2013) talk in similar terms about the role of narratives. Bringing together Geels's call for politics in destabilising regimes - which implies a contest over ideas and meanings - with institutional scholars' focus on rhetoric and legitimacy (Schmidt, 2008, 2010), one can identify a hermeneutic thread that runs both through articulations of transition and understandings of institutional change.

9.4.3 The hermeneutics of change

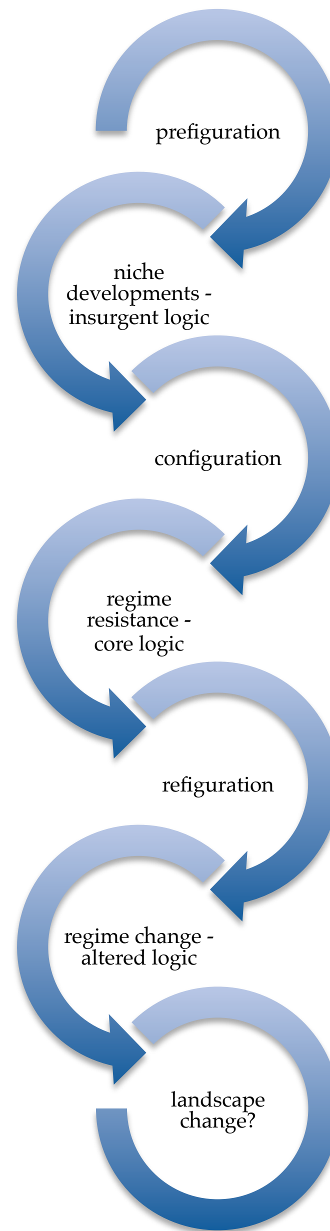
Change is at the heart of hermeneutics; interpretations and reinterpretations of the world are constantly progressing in a cycle (Ricoeur 1976; Ezzy, 1998). Giddens's double hermeneutic (1984) emphasises that the data interpreted in research are themselves interpretations of reality. To understand behaviour, the ways in which actors act, interpretive scholars seek accounts of 'the specific motives, beliefs and meanings to the actor of the actions in which they engage' (Hay, 2011) rather than generalisable laws. Zilber (2017) argues that institutional logics, rather than being determinative, are worked out within such hermeneutic circles.

Ricoeur's cycle of prefiguration, configuration and refiguration emphasises change not only in the reader confronted with the possibilities posed by the text, but in the wider world as the actor brings new understandings to lived experience. Literary hermeneutics, in Ricoeur's view (1988, p. 174), must fulfil the threefold task of understanding, explanation, and application - the last being a question of action, of projecting possible changes into the world.

Ricoeur's hermeneutics seeks both to understand change (in terms of prefiguration and configuration) and to enact it (through refiguration), to open up 'possible worlds' (Ricoeur, 1976, p. 87).

The future-oriented character of interpretation has prompted some scholars to talk in terms of a 'hermeneutic helix' rather than a cycle: the movement is always forward and never returns to the initial position (Radnitzky, 1970; Dahlstrom, 2010). This notion of a hermeneutic helix or spiral (Alvesson & Sköldberg, 2009) provides a means to integrate and focus the insights of interpretive, institutional and transition scholars. The cycle of interpretation progresses through a prefigurative stage in which insurgent logics form and develop (probably, but not necessarily, in sociotechnical niches); a configurative stage in which core logics are reasserted, typically in the form of regime resistance; and a refigurative stage of altered logics and a degree of regime change, possibly accompanied by or ultimately resulting in shifts at a landscape level. Figure 9.1 presents a simplified diagram of this helical process; it must be read with the caveat that any depiction of a process necessarily glosses over the messiness and contradictions of lived experience. It shows the alignment of the key concepts in this study, but it does not prescribe their part in the process.

FIGURE 9.1. A HERMENEUTIC HELIX FOR SOCIOTECHNICAL TRANSITIONS



What the helix suggests, and which is absent from a cyclical portrayal of processes, is the progressive layering of time. There is no return to a *status quo ante*. And history matters, not only in generating logics and lock-ins but in offering prior instances of the possibility of change. The basis of the multi-level perspective on 'sustainability transitions' is the knowledge that other transitions have happened (Geels, 2002; 2004). Rather than conceptualising history in terms of long periods of stability and dramatic 'punctuated

equilibria' as historical institutionalists have done (Krasner et al., 1984) the helical approach emphasises the gradual layering of change.

In doing so it chimes more closely with Braudel's notion of levels of time, which underpin both Ricoeur's hermeneutics and the multi-level perspective (see Chapter 5, section 1). The historical interplay between structure and agency, between actors and institutions, rescues concepts of transition from over-abstraction or technocratic managerialism and returns them to the realm of situated contests over future possibilities, engaged in through the institutional work of intelligent actors confronted with embedded sociotechnical systems and social practices and constrained by the institutional logics of societal structures. The image of the helix encapsulates that possibility of progressive change and recurring resistance.

7.4.4 The helix in the case study institutions

In a short research project in which the fieldwork spanned just over a year, it is not possible to capture the full effects of changes in logics, understandings and practices over time. However, by revisiting the rationales for change outlined in Chapter 6 (section 2), one can roughly position each case study institution in terms of the helix and assess possible trajectories. Such rationales, even though they may exist as 'implicit theories' (Glaser, Fast, Harmon, & Green, 2017) rather than as explicit elements of institutions' programmes and objectives, offer accounts of low carbon futures and provide a measure against which progress may be judged.

In none of the organisations studied could it be said that a process of regime change, a transformed logic or a refigurative reinterpretation of the institution had been fully achieved. What can be concluded is that a continuing struggle and contestation has begun that could ultimately result in such changes.

At Gentoo, the organisation that had articulated the boldest vision of change but was most obviously in crisis during the research, the impact of regime resistance was clear. The national regulatory body, the Homes and Communities Agency, was putting pressure on Gentoo through its rating

system, which measures performance in terms of governance and value for money. A new chair and chief executive were appointed, Gentoo's vision and mission were recast with a stronger focus on traditional housing values, Gentoo Green was disbanded and the 'distractions' of Romag and the commercial construction division were sold off. Senior personnel were clear that the impetus for such changes was at a regulatory or institutional field level:

> We're dependent on the HCA to be assured that what we have got in place will allow us to deliver what we've said we can deliver within this austerity programme, and I think we've got to recognise that that's going to be here for a while…
>
> (Executive, Gentoo).

Nevertheless there were signs that both senior executives and employees within the organisation intended to continue pursuing a transition agenda to the best of their ability (see Chapter 8, section 2.3). Whatever emerges is likely to build on the Gentoo Green experience and retain at least some of the associated values and logics. The outcome, in the short term, may be a continued tension between a logic of financial responsibility, driven externally at a field level, and a logic of environmental responsibility, supported by the experience and values of local actors but also by external drivers, including a continued concern within the social housing field about the impacts of fuel poverty. The possibility of rising fuel costs and reduced standards of living among Gentoo residents is likely to encourage a renewed concern with energy efficiency and 'green' building technologies, stimulating a process of 'overlay and melding' of logics that Mohr and White (2008) argue is necessary for the emergence of new institutional systems. If this happens, then Gentoo's rationale for change - that by fulfilling its responsibilities to the planet, Gentoo will also fulfil its responsibilities to its residents (see Chapter 6, section 2.3) - may be borne out, but possibly with a reversed formulation: that by protecting the welfare of its residents, Gentoo will also stay focused on its environmental goals.

At Nottingham City Council earlier articulations of environmental sustainability (the Nottingham Declaration) had been overtaken by a focus on energy generation and energy efficiency, but with an acknowledgement of the risks of climate change and some understanding of environmental limits

(Nottingham City Council, 2010). Regime resistance was less dramatic than at Gentoo, but took the form of financial pressures from central government, an emphasis on commercialisation, and an absence of state encouragement for action on low carbon agendas. During the course of the research the situation was further complicated by the June 2016 vote by the UK to leave the European Union, potentially putting international low carbon collaborations at risk. Perhaps as significantly, the logic of environmental transformation apparent in the Nottingham Declaration had been muted, with increased emphasis on energy generation and energy retailing as a commercial opportunity for the city council as well as a chance to reduce residents' bills. The core logic of civic responsibility was reaffirmed through heightened concern about costs and service delivery as the city council experienced successive cuts in government-allocated funding.

One can position Nottingham City Council at a configurative stage of the helix, in which the institution and its actors are rethinking their roles in the light of challenging circumstances but have yet to adopt transformative solutions: the core logics remain undisturbed. At the time of the research there was little indication that significant reorientation was likely to take place; but neither was there any sign that the council was curtailing its investment in energy efficiency, low(er) carbon generation and the replacement of the most polluting forms of transport. In terms of transition theory and theories of institutional change, such prolonged interim stages are to be expected; sociotechnical transitions are expected to take place over decades (Scrase & Smith, 2009).

Nottingham City Council's rationale for change is that by framing climate change as a commercial opportunity, the city will benefit economically from transition (see Chapter 6, section 2.2). While such a view of change is in place, the city council is less likely to venture into the risky and disruptive territory associated with 'transition experiments' (Grin et al., 2010; Loorbach, 2010).

Manchester Metropolitan University is perhaps the most forward-looking in its current articulation of an environmental vision, both in its rhetoric but also in measuring its progress against a wide range of indicators (Manchester Metropolitan University, 2014). It has generated significant reputational capital through its success in the Green League and the Green Gown awards, and has

backed its environmental rhetoric with major investments in buildings including the £140 million Birley campus. At the same time several interviewees were clear that the university's environmental vision, although publicly supported by successive vice-chancellors, had not fully permeated the organisation.

Despite some interviewees' reservations about the environmental commitment of the university's leadership, there was little evidence of active 'regime resistance', either by the university's hierarchy or within the wider institutional field. Interviewees did perceive a slackening of pressure for environmental action by HEFCE, but this did not have any noticeable impact on the university's position. Interview evidence suggested that opposition to the university's vision was muted and took the form of inaction rather than contention. Resistance was more evident in the inertia and persistence of practices: the continued provision of parking facilities, for example, or the inability to prevent the sale of bottled water. At a wider scale, EAUC's activities continue to legitimise and encourage action on carbon reduction and education for sustainable development.

MMU's rationale for change - that by nurturing environmentally literate students the university will also prepare them for employment and thus protect its market share - is echoed at a field level by the Higher Education Academy and the National Union of Students, who conduct regular surveys of students' and employers' attitudes on sustainability skills (Higher Education Academy, 2015), although empirical evidence of the factors taken into account in recruitment decisions is lacking. The challenge for MMU's environmental vision lies in its simultaneous strategy of competition with other universities, which demands investment in facilities and staff that has already generated a recent increase in carbon emissions. While the holy grail of regime shift may still be distant, there is evidence of a move towards the refigurative stage of the cycle, in the early signs of an integration of environmental logics into MMU's core activities of teaching and research.

9.5 The value of a framework

This chapter has explored two questions relating to institutional logics and institutional change: first, the dragging effects on proposed changes of prevailing institutional logics, and second, the opportunity for new logics to permeate institutions via epistemic networks. In doing so I have sought to model a way of understanding the changes necessary to bring about transitions at an institutional scale.

Before discussing in the concluding chapter how this thesis contributes to knowledge and how the framework outlined above can be applied in practice, it is worth highlighting what the framework developed in the preceding discussion is good for, and where it does not add value.

Its strengths are, first, that it joins the insights of theory, which provide a means of analysing problems, with the messy and imprecise world of situated actors engaged in practical change. In doing so it helps to mitigate some of the abstraction prevalent both in transition theory and in institutional scholarship, emphasising how change at an institutional scale is worked out through the multiple ways in which actors construct and reconstruct possible futures.

Next, by aligning the institutional logics perspective with transition scholarship, the framework allows fuller exploration of the under-theorised and under-researched phenomenon of 'regime resistance' that has troubled transition scholars (Geels, 2014; Geels et al., 2016).

Third, it highlights the value of interpretive approaches as practical social science tools, through which researchers can show the links between policy and practice changes and the ways in which meanings are constructed, diffused and reinforced by savvy and sensitive actors (McPherson & Sauder, 2013).

Theoretically, the approach has some limitations. It does not respond to spatial concerns in transition studies (Gibbs et al., 2002; Bulkeley, 2005; Murphy, 2015) or to urban geographers' interest in governing transitions (Bulkeley, 2005; Betsill & Bulkeley, 2007; Bulkeley & Betsill, 2013). These issues matter, but my conclusion is that location, space and urban scale is less pertinent to transitions in the case studies explored than organisational and

institutional change. My focus is on the actors of transitions rather than their locations, and on the logics that drive institutions rather than the mechanisms through which institutions assert their authority.

Because I have not constructed a framework for analysing the urban, it is also not suited to interrogating the concept of the 'anchor institution'. My inquiry began with anchor institutions as a focus of attention, but my interest moved from the 'anchoring' to the institutional role. Anchor institutions are the setting for my inquiry, but the inquiry is not about the setting. There is a place for a robust analysis and critique of the anchor concept, but that is a separate project.

The third area of limitation is the framework's focus on organisational and institutional change rather than political contest. It is concerned with the mid-level and the medium to long term, rather than the high level and relatively short-term events of state and international politics.

In my concluding chapter I consider further the implications of my findings for theory and practice and summarise my contributions to knowledge. In particular I examine how an overt focus on the logics at work within institutions can help to inform the reorientations required to achieve lasting transitions.

Chapter 10: A view from Utopia

10.1 The future now

In this final chapter I summarise the areas where I consider this research has contributed to knowledge. Building on my findings, I propose a model of institutional change in the context of low carbon transitions. I go on to identify areas for future research and further reflect on some of the limitations of the current inquiry.

I set out four connected areas where this study advances knowledge and raises questions for further research. First, it shows how an understanding of the recursive or 'boomerang' nature of institutional logics illuminates issues of regime resistance (Avelino & Rotmans, 2009; Geels, 2014). Next, it highlights how multiple logics explain the iterative character of transitions as continuous and reflexive rather than linear processes. Third, it underlines the embedded agency and navigational nous of transition participants as they interpret their institutional settings and ambitions. Fourth, it focuses on the centrality of epistemic networks as key sensemaking fora in which notions of transition are developed and imaginaries legitimised or excluded. This leads to the observation, discussed in Chapter 9 (section 3.3), that nascent 'transition arenas' (Loorbach, 2010) already exist in the interpretive interplay between epistemic networks, policymakers and organisations.

I move on to propose a model of institutional change that is sensitive both to the established logics of institutions and to the creative space for multiple logics opened up through epistemic networks. Such multiple logics create room for new imaginaries of a low carbon future that may be validated and legitimised through relevant peer groups, eventually enabling new or revised interpretations of an institution's status function (Searle, 2005).

By way of this model, I propose a research agenda that develops a closer focus on the role of multiple logics as keys that may unlock routes to low carbon transitions. Finally, I reflect on some limitations of this research and

how my own position has developed. First, though, there is a bigger picture to revisit.

10.1.1 An unfolding future

I began this research with the question of how institutions tell stories of the future. On a wider scale, narratives of a low carbon future have unfolded throughout the three years of my study. In 2014 much of the world's hope was focused on the COP21 climate talks in Paris, seen by many as the best chance of achieving a global agreement to limit carbon emissions. In October 2016, as I started to write up my findings, the Paris Agreement was ratified by 55 signatories, who between them accounted for more than half the world's CO2 emissions. 'Carbon control' (While et al., 2010), it seemed, was a global reality. Yet on 1 June 2017 the US president, Donald Trump, announced the United States' withdrawal from the Paris Agreement, citing the need to put American jobs in fossil-fuel industries first.

There were other indicators of global change. In November 2016 the UK Government announced that all coal-fired power stations would be phased out by 2025; in July 2017 it declared that no new petrol or diesel cars would be permitted from 2040. Yet if these were signals of a shift to a low carbon economy, other signs showed the limitations of both the framing and the progress of transition. In April 2017 the Mauna Loa Observatory registered its first reading of more than 410 parts per million of atmospheric CO2. And beyond the narrow measure of CO2 output, the mounting stresses of human activity on the natural world were evident in the discovery of 38 million pieces of plastic debris on the uninhabited Henderson Island in the South Pacific (Lavers & Bond, 2017) and growing evidence of microplastic contamination of seafood, drinking water, and even beer (Liebezeit & Liebezeit, 2014).

UK policy zigzagged from support for the Paris Agreement, hailed by the then prime minister, David Cameron, on 12 December 2015 as 'a huge step forward in helping to secure the future of our planet' (H.M. Government, 2015), to the closure of the Department for Energy and Climate Change (DECC) and its incorporation into the business-focused Department for Business, Energy

and Industrial Strategy less than a year later. The vote on 23 June 2016 to leave the European Union not only put international partnerships and funding on climate-related initiatives at risk, but - despite some rhetoric of a 'green Brexit' - displaced environmental issues from a public agenda that became dominated by discussion of Britain's divorce from its European partners.

The stories of the three organisations featured in this research unfolded too, most dramatically at Gentoo, where 330 staff lost their jobs and the much-vaunted Green Team shrivelled from a staff of 26 to just one in the space of just over a year. At Nottingham City Council the city's focus on energy generation was complemented by a successful experiment in energy retailing through Robin Hood Energy, though at the expense of the promotion of renewable energy. Manchester Metropolitan University saw a change of vice-chancellor and the decision, after completion of my fieldwork, to close the university's Crewe campus. How the university's sustainability strategy will develop in the more cautious academic context created by Brexit is unknown at the time of writing.

10.1.2 A constrained future

The aim of my research was to discover how institutional actors' ideas of a low carbon future enable or constrain progress: to reveal the epistemological boundaries that limit the futures on offer. In the overwhelming majority of interviews, interviewees were more comfortable talking about actions and plans than about their long-term conceptualisation of the future. They commonly linked carbon reduction to a range of other social goods, especially health, wellbeing and poverty reduction. Relatively few framed it in terms of human beings' co-evolution with the natural world or the value of non-human species: for the most part, environmental action was pitched in anthropocentric terms. Ecological modernisation, on this reading, is the only game in town.

On a broad scale, this limits the futures on offer to those that serve the continued advancement of human material prosperity: notions of degrowth (Martínez-Alier, 2012) or 'steady state' economics were not part of the conversation. Neither were overt critiques of the priorities embedded in

neoliberal economics, although several interviewees had no hesitation in attacking specific aspects of government policy. Proposed futures were also linked, unsurprisingly given the discussion on institutional logics in Chapters 3 and 9, to the agendas of the case study institutions: social welfare, civic responsibility and success in the higher education marketplace. Closer examination, though, reveals multiple logics at work and the possibility of alternative readings of institutional aims and purposes (Chapters 7 and 9). Actors also drew on a wide range of logics and values in articulating ideas of the future (Chapter 9).

Across the three case study institutions, the bold ambitions set out in policy documents and institutional discourse gave way among actors to fuzzier, more uncertain views of the future and a focus on navigating the challenges of events. In such circumstances horizons of expectation (Ricoeur, 1988) were inevitably curtailed and the disconnect between short-term and long-term goals was evident. Pathways from the short to the long term could be deduced from institutional discourse but were not explicit (see Chapter 6), and ambitions such as One Planet Living (in the case of Gentoo) were only loosely coupled with programmes and practices. In the context of such loose coupling (Meyer & Rowan, 1991) interpretive processes take on greater importance, allowing actors to separate 'who they are from how they act' (Thornton et al., 2012, p. 58).

10.1.3 The 'challenge to what is'

Throughout this thesis I have stressed the projective character and interpretability both of low carbon futures and of the institutions central to their enactment. Human futures, insofar as they can be described, are imaginaries: analysing them is not only a question of probability but of possibility, the 'anticipatory imagination of acting' (Ricoeur, 2008, p. 173). They are thought before they are enacted. And the institutions that enact such imaginaries through material and social interactions are themselves in the first instance speech acts, illocutionary statements about the way the world might be ordered (Searle, 2005), and thus subject to imagination and re-imagination.

Herein lie possibilities of intentional change. From the 'nowhere' or utopia of imagination 'emerges the most formidable challenge to what is' (Ricoeur, 2008, p. 180). Conversely, from the 'somewhere' of the institution, embedded in physical places, materials, practices, and political structures and reinforced through historically sedimented institutional logics, arises the challenge to imagination, the resistance of sociotechnical regimes.

This study has sought to better understand both the potential for change and the obduracy of resistance. My research journey has taken me from a focus on place to an examination of processes; from the urban situation of carbon reduction to institutional and intersubjective conceptions of the future; from economic geography to organisational sociology. It has been a journey from what and how to who and why. In the background has been the constant problematic of wicked issues: why, if change is so necessary, is it so difficult to achieve?

10.2 Contributions to knowledge

In Chapter 5 I suggested that institutional logics act in a recursive or 'boomerang' dynamic, drawing institutions back from ambitions of transition towards their previous trajectories. In the discussion of my findings in Chapter 9 I suggested that plans for transition are more likely to gain traction when they align with historically embedded logics, because such logics grant legitimacy to actions that may otherwise appear deviant or detached from an institution's historic purpose. I proposed a 'hermeneutic helix' (Chapter 9, section 4.3) as a heuristic device for understanding the interplay of institutional logics; the interpretive cycle of prefiguration, configuration and refiguration; and the dynamics of transition captured within Geels's multi-level perspective (Geels, 2002, 2004).

This study makes four salient contributions to knowledge about low carbon transitions. First, it illuminates the nature of 'regime resistance' (Geels, 2014) by showing how **resistance is embedded in institutional ontology**. An institution with a particular status function (Searle, 2005) will struggle to move, or to appear to move, beyond that status function because this requires an existential

shift in organisational culture and a rebuilding of the edifice of 'myth and ceremony' that supports such culture (Meyer & Rowan, 1991; Alvesson, 2002). Destabilising regimes and reducing or removing regime resistance, then, are not simply questions of exogenous political action, as advanced by Geels (2014) and highlighted in critiques of the multilevel perspective (Shove & Walker, 2007; Scrase & Smith, 2009), but of endogenous reinterpretation of the institution by institutional actors (DeJordy et al., 2014; Hay, 2016).

Actors at all three case study institutions, to different degrees, stressed the importance of leadership (in the sense of direction from the apex of the organisational hierarchy, or externally from government) in realising their low carbon ambitions; and each, to different degrees, positioned themselves as leaders within their institutional field (Chapter 5). An understanding of the embeddedness of institutional logics in institutional ontology, however, suggests that such notions of leadership are insufficient in themselves to change institutions. Unless the institution's core purpose is deeply connected in the minds of institutional actors with its articulation of a low carbon future, the evidence from the case studies would suggest that purposive transitions are at constant risk of becoming diluted or sidelined as core priorities of institutional survival, expansion, and mission fulfilment take precedence. Low carbon leadership thus needs to become an act of reinterpretation, the plotting of a coherent and credible narrative that makes sense to employees, external stakeholders and members of the wider institutional field. This has yet to be achieved among the case study institutions, although both MMU and Gentoo have taken steps towards it.

Second, I show how **transition processes are iterative as a consequence of the multiple logics at work within institutions** (Friedland & Alford, 1991). Core logics are open to challenge, and the concept of the sociotechnical niche (Rip & Kemp, 1998) helps to show where and how insurgent logics might develop. But the ontology of institutions is such that there cannot be a simple switch from one logic to another: an organisation premised on a civic logic, such as Nottingham City Council, cannot flip to a purely environmental logic that prioritises planetary welfare and the 'worths of nature' (Blok, 2013) without recognising the effects on its core mission of the civic good. In

Nottingham's case, this conflict has surfaced in the question of whether to offer low-income residents the cheapest possible energy or the most environmentally responsible; in line with the council's civic logic, the cheapest was chosen. Within an institution, different logics will carry different weight in different circumstances. By identifying such logics and their relative effects within and beyond an institution, researchers and policymakers may develop credible theories of change. These can show how a melding of institutional logics may support policy objectives; they can also be used to identify opportunities for and challenges to proposed transition processes.

Third, this study has shown how **actors' sensemaking and interpretation are integral to transition activities**. This suggests that research and policy should move away from considering transitions as the achievement of particular targets for carbon reduction or energy savings, and towards understanding the targets and objectives themselves as interpretations and ways of making sense of a challenge that extends beyond the emissions of greenhouse gases and will change with successive interventions. Both the ends and the means of transition are open to interpretation. This presents the risk of 'means-ends decoupling' (Bromley & Powell, 2012) where the articulation of a goal becomes disconnected from the activities ostensibly pursued to achieve it. But it also allows the goal to be revisited, challenged and rearticulated. Interpretation is not only the understanding of what has already been articulated but the possibility of changing it, of 'redescribing reality' (Ricoeur, 2008).

Interpretations do not simply arise from a detached world of concepts and ideas. They are grounded in the everyday experience of actors within organisations and locations. 'Logics of appropriateness' (March & Olsen, 1989) are interpretive processes that orient actors towards the core logics of their institutions and assist them in recovering concordance from discordance (Wood, 1991). Sensemaking processes may offer the possibility of change (Fiss & Zajac, 2006), but also help to explain why things stay the same. To interpret a solar energy programme as a sign and symbol of low carbon transition, for example, may enable actors and institutions to avoid more fundamental questions about the impacts of a growth-oriented economy (Jackson, 2009).

Perhaps most importantly in terms of practical implications, a focus on the interplay between interpretation and institutional logics highlights the role of the actor. Embedded agency is real agency (Friedland, 2013). This was perhaps most evident at Gentoo, where despite the organisation's external challenges, staff put forward and implemented their own suggestions (albeit small-scale) for environmental initiatives. Transitions are not disembodied processes or the outcome of impersonal logics, but the consequence of the many interpretive journeys of multiple actors who tell stories of their work, make sense of it through emplotment (Ricoeur, 1988), and navigate a complex world of structures, logics and policies, drawing on multiple logics to do so (Greenwood et al., 2010). Rather than valorising voluntarism, a focus on actors' navigational abilities enables us to understand transitions as the effects of logics at a macro scale and of the institutional work (Lawrence & Suddaby, 2006) of situated actors at a micro scale.

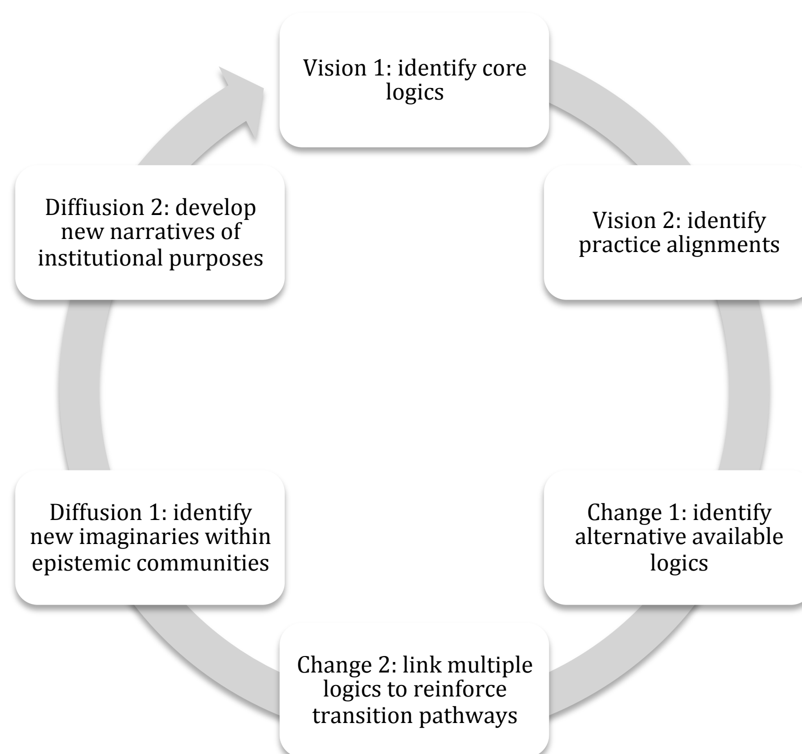
This connects to the fourth area where this study takes the understanding of transitions forward. **The external fora of epistemic networks play a vital role in the interpretive processes on which transitions rest**. The result is that transitions are both situated and detached. They are situated, spatially and institutionally, in materials, actions and policies that - in the case of this study - play out at an urban scale and within the built environment. But they depend on the pooling, development, interpretation and legitimation of knowledges within epistemic communities of professionals and experts (Gough & Shackley, 2001; Bulkeley, 2005). Such thinking, as discussed in Chapter 9 (section 3.2), emerges in protected spaces that are relatively resistant to political pressure and the everyday challenges of individual organisations. Knowledge is legitimised, approved and disseminated through conferences, awards, and study visits. Epistemic networks offer prototype 'transition arenas' (Loorbach, 2010) where understandings of transition can be exchanged, tested, and kitemarked as best practice (Bulkeley, 2006). While low carbon transitions remain grounded in and bounded by spatial and material practices, their evolution and coproduction rely on knowledge exchanges that are not confined by or to the sites of enactment.

10.3 An interpretive transition model

In practical terms, this study's findings may be applied in the form of an interpretive model for low carbon transitions, working from the interpretive cycle discussed in Chapter 9. The model shows how the conceptual framework set out in Figure 9.1 could be applied as a planning tool within an institutional context. The discussion that follows is intended as exploratory and provisional rather than definitive or normative. Its aim is to offer an approach that can complement, but also interrogate, existing models of change and in particular the multi-level perspective on transitions.

The proposed model has six stages (Figure 10.1). The first two relate to vision-forming, the prefigurative stage of the adapted hermeneutic cycle. Stages three to five relate to contest or disturbance, in recognition that any model of change should take into account difference and conflict. The final stage relates to transformation or refiguration.

FIGURE 10.1. AN INTERPRETIVE TRANSITION MODEL



The first stage is for transition actors - those who plan and implement transitions - to identify the core logics of relevant institutions. These core logics can be found at three levels. First they exist within the institutional field of which any organisation is a part. Second, they are generally present within the epistemic networks that inform, validate and disseminate institutional knowledge - although, as discussed in Chapter 9, epistemic networks can also validate alternative logics. Third, they exist within individual organisations and are adopted as 'logics of appropriateness' by individual actors. By making explicit the pervading rationality of an organisation and of its institutional context, it becomes possible to identify actions that are more or less discordant (and therefore more or less difficult to achieve without significant disturbance).

The second stage is to identify transition practices that align with dominant institutional logics. This is not simply a matter of grasping the 'low hanging fruit' of carbon reduction, but also of identifying which types of changes have lasting credibility within an institution's context. Battilana et al. (2009, p. 80) describe this as 'prognostic framing', presenting radical change as aligned with existing institutions. In practical terms, it is a case of identifying strategic objectives that make sense. MMU has sought to do this by linking education for sustainable development with graduate employability. Gentoo and Nottingham City Council have done so to some extent through their focus on fuel poverty, though as discussed earlier, this reveals a tension between levels of comfort, energy affordability, and carbon reduction.

Such dilemmas lead to the third phase of the model, which is to identify the multiple logics available within an institutional (or sub-institutional) context. Multiple logics provide spaces within which dominant understandings may be challenged (Friedland & Alford, 1991). Where multiple logics are available to actors, institutions and regimes are more susceptible to change. Identifying those logics and the spaces where they are effective shows where wider changes might begin to take hold. In Nottingham, for example, attention to air quality and modes of transport is driven by a civic logic – a concern for citizens' health and wellbeing and an interest in quality of place. These align with an agenda of low carbon fuel sources and the encouragement of alternative modes of travel, especially walking and cycling. At the same time an agenda of

economic growth plays to a civic logic but with opposite impacts. Local policymakers are nervous about appearing to make life difficult for motorists, which risks arousing hostility among local residents and putting off investors. A market logic favours fewer restrictions on businesses; a civic logic can be applied as justification both for action and inaction; and a logic of ethics (comparable with Friedland and Alford's religious logic) might be applied to justify more dramatic interventions in order to minimise harm to the health of local residents or to the environment.

The fourth stage is to develop imaginaries that link or meld multiple logics (Mohr & White, 2008) to reinforce transition pathways. This is an interpretive process, one of narrating possible futures or planning scenarios (Frittaion, Duinker, & Grant, 2010) that are credible within an institutional context. Sensemaking (Weick, 1995) can be used creatively to steer institutions toward low carbon futures that are coherently linked to organisational purposes and histories. In the Nottingham example cited above, a combined civic, ethical and environmental logic focused on minimising existing harm and maximising wellbeing might outweigh a market and civic logic focused on potential economic risks and benefits.

In a fifth stage the process moves to a broader scale, identifying multiple logics and credible imaginaries within epistemic networks. When a story of change is adopted with an epistemic network, it can act as a powerful driver within individual organisations. APSE Energy, for example, has adopted a story of commercialisation that validates and reinforces local authorities' efforts to link carbon reduction with the provision of chargeable services. EAUC, more boldly, has launched a 'Future Business Council' expressly to link environmental education to industrial skills shortages.

The final stage is a deeper process in which new narratives are developed of institutions' purposes that align more closely with the long-term health of the natural environment. A shift takes place from aligning carbon reduction with existing logics to reworking logics to meet broader environmental goals. Gentoo's ethos of One Planet Living could be seen as an attempt to do this, although in this case the attempt was thwarted by a combination of external factors. Gentoo's experiment, however, shows how an organisation may seek to

combine new technologies and practices with a radical shift in culture, supported by new forms of validation and legitimacy - including newsletters, awards ceremonies and recruitment of departmental 'champions' as evangelists for the cause.

The frustration of Gentoo's experiment shows the need for such changes to become part of a wider shift at an institutional field level in order to minimise risks of isolation and marginalisation. It also raises the issue of external shocks, which cannot be factored into this model. External shocks happen but by definition cannot be predicted in detail; more explicit attention to institutional logics, however, may better equip organisations to respond to shocks by referring back to and reassessing their core logics and acting in ways that are consistent with them.

This model is not intended as a blueprint for change (which would be open to the same criticisms as transition management) but as a way of understanding how change might take place. In policy terms, it offers a lens through which policymakers might analyse proposals' chances of success (Marsh & McConnell, 2010), suggest priorities for action, and develop theories of change (Weiss, 1995). For researchers, it offers a way of structuring empirical studies of emerging transitions.

10.4 A research agenda

Four promising areas for future research emerge from this study, taking forward the link between interpretive methods and the theory of institutional logics in the context of low carbon transitions.

First, work is needed to identify how different institutional logics support (or hold back) transition or restructuring processes. My study has linked embedded logics with 'regime resistance', but also highlighted the opportunities for insurgent or alternative logics to gain traction. A next step would be to examine empirically the effects of different logics in different situations. Li and colleagues' research (2016) in Texas is pertinent here: it found that conservative Catholics were more likely to follow their politically-inspired

scepticism on climate change than to respond to the Pope's normative call for environmental action. Given multiple logics at hand, the logic of their political community outweighed their religious or ethical logic. Similar examinations could be applied to institutions seeking to pursue transition agendas, focusing on which institutional logics are available to actors and what weight they give to alternative logics and why.

Related to this, research could further examine how actors interpret logics, and whether they are more likely to understand logics in one way than another. The question here is one of the variable power of institutional logics at a macro scale to generate 'logics of appropriateness' and patterns of behaviour at a micro scale. Such research can examine the historical associations of particular logics (for example, how ideas of the 'civic' have been constructed in particular institutions over time), the role of logics in contemporary discourse, and the spread and contestation of the normative values and 'orders of worth' associated with them.

In the case of low carbon transitions, research could focus on places such as the Netherlands where transition projects and processes are more advanced than in the UK, examining which types of logic have been effective in supporting transition processes and enrolling and mobilising actors, and how logics have been deployed to delay or frustrate transition processes. Comparative studies of transition attempts in different locations could examine the relationship between institutional logics and policy transfer and its strengths and weaknesses (Dolowitz & Marsh, 2000). Such research could be utilised in planning new transition projects, constructing theories of change and monitoring progress. It may also be possible to predict the likely evolution of transition projects on the basis of the institutional logics at work, identifying areas where progress is more or less likely to be achieved.

A second field of future research could focus on epistemic networks, examining the sensemaking processes through which transition visions are generated and promulgated through professional and policy interactions. Research could ask what stories of the future are constructed, where and how such visions arise, and how they become associated with the shared knowledges around which epistemic networks assemble. Researchers could

examine the extent to which visions are formed and influenced by network convenors following their own agendas; how sensemaking within epistemic networks becomes sensegiving (Gioia & Chittipeddi, 1991) across broader fields of policy and practice; how far epistemic networks themselves are responsive to sensegiving by the state and other policy actors; and the particular role of 'good practice' (Bulkeley, 2006) in conveying and legitimising sensegiving and sensemaking processes. Such research may help to unlock routes towards low carbon transitions by identifying more clearly where and how persuasive narratives of the future arise, and showing how different categories of actors adopt them within different types of institution.

Thirdly, research could construct and test models of institutional transformation based on the interplay of multiple logics and the spread of sensemaking processes within and beyond institutions. Such research could empirically test ideas of leadership and institutional entrepreneurship, examining what happens to visions of a low carbon future in terms of their extent, their longevity, their adaptability and their integration into institutional cultures (Alvesson, 2002). Studies of transition arenas, whether purposive as in the Dutch experiments or latent as identified in this research, could focus on the degree and impact of institutional change and inform transition planners of the likely effects of their proposals through a deeper understanding of the interpretive processes at work at an institutional scale. In particular, research could examine 'switchings' (Godart & White, 2010; Clemente, Durand, & Roulet, 2017) or crossing points between different logics and how actors move in practice between logics. Studies could focus on how and why actors might switch from a dominant logic towards an insurgent environmental logic.

Finally, research should pay attention to temporality. Institutional time combines the three levels identified by Braudel, but with an emphasis on the *longue durée*: institutions, unlike projects and programmes, do not contain an idea of their own obsolescence or completion. Yet in their practices, distant future benefits are often discounted in favour of the immediate institutional work of maintenance and survival. Plans and programmes focus on the short to medium term, as highlighted in Lewis and Weigert's concept of institutional time (1981). A better understanding is needed of how the *longue durée* of

institutions is embedded in mundane practices and processes, and how an extended concept of institutional time may facilitate or act as a barrier to the generation and implementation of transition programmes. Such research should examine both the tradition of institutions - what exactly is it that is embedded and sedimented within them? - and their potential trajectories, the 'possible worlds' (Ricoeur, 1991) they are capable of opening up. As Ricoeur puts it (2008), such research is both archeological and teleological. At root, it could help to address the question of whether institutions are capable of the radical changes needed to usher in a low carbon future, or whether the institutional paradox that opened this study, the paradox of the guardians of stability seeking to be agents of change, is ultimately irreconcilable.

10.5 Final reflections

10.5.1 The research journey

As mentioned above, this study has evolved over three years of reading and fieldwork. In several ways it has broadened: from an initial focus on institutional narratives of low carbon futures to a broader concern with interpretations and sensemaking; from a focus on urban policy through the lens of 'anchor' institutions to a concern with the nature of institutions; from the impacts of policy to the effects of logics. This broadening has inevitably been at the expense of some areas of relevant theory and research. The research has become more exploratory and less explanatory.

There are no definitive findings that say, in so many words, that because of X we now know Y. They do, however, provide a better sense of why: why changes that appear so obviously necessary to so many are so difficult to achieve; and why responses to the continuously evolving problem of climate change require as much attention to the embedded long-term logics of society as to the policies and programmes necessary to achieve immediate reductions in carbon emissions. The findings respond to my research questions by highlighting both the constraints and the creative tensions generated by the

interplay of recursive logics that militate against change, and an interpretive process that reopens possibilities of change (see Chapter 9).

My research methods, with their focus on qualitative interviews and discourse analysis, have enabled a broad approach to three case studies but at the expense of the deep exploration of situated interactions that might shed more light on the use of logics and interpretive processes at an intersubjective level. The necessary use of individual 'gatekeepers' has both facilitated and limited access, and it would be interesting to discover whether interviewees would have responded differently to questions in the absence of a gatekeeper. Such an approach - assuming that individuals would be willing to participate - might encourage more critical reflection from participants and better expose the multiple logics of actors. However, it is unlikely that senior officers would have been willing to take part without agreement at an institutional level. Increased criticality might be achieved at the expense of a balance of informed participants. A more embedded study would encounter the same dilemma, as access would almost always require organisational approval.

My own position has also been modified in the course of this study. My initial standpoint of 'green pragmatism' (see Chapter 3, section 2.1) has become, in a sense, both more green - in terms of understanding the limitations of the 'ecological modernisation' range of approaches - and more pragmatic, in recognising that most change is incremental. I now view the obstacles to change as much more deeply embedded, in the form of institutional logics that not only prioritise institutional perpetuation, but are also challenging to adapt to new purposes.

10.5.2 Limitations of the research

In Chapter 9 (section 5) I discussed some of the limitations of this research. The disciplines of time and space have led me to exclude some theoretical perspectives that have much to offer. I outlined these in Chapter 3 (section 4).

My focus on interpretation and culture has, inevitably, put questions of power and politics slightly to one side - although I would argue that power and

politics, rather than being explanatory factors in themselves, are themselves products and processes that need to be explained. Cycles of interpretation and the persistence of logics may help to explain how effects of power and politics arise and spread, although there has not been space to address such questions in this study. Similarly, the question of 'just sustainabilities' (Agyeman et al., 2016) - the linking of sociotechnical transitions with issues of social justice and democratic accountability - has had to be left unexplored, although an examination of approaches such as *Buen Vivir* in Bolivia (Escobar, 2011) would provide a rich source of contrast and critique to set against the narratives emerging from the case studies in this inquiry.

The research methods imposed their own limitations. Empirical investigation of meaning-construction ideally requires a deep embeddedness within a context of social interaction, paying attention to the fine detail of everyday conversations to track the development and morphing of meanings. Zilber (2017, pp. 143-147) highlights the need to explore the 'micro levels of logics', attending to their character as 'socially constructed meaning systems'. Such investigation has been beyond the scope of this thesis, although it would be a fruitful area for further research.

Conducting interdisciplinary research poses the additional challenge of conceptual commensurability. In this research I have highlighted how interpretive, institutional and transition scholarship can be brought together to provide a richer understanding of a research topic. But the parallels are not exact and the conceptual backstory within each discipline is different. I have not had the space to explore each concept's full archaeology, but have sought to be as precise as possible in reading across from one discipline to another.

Gaps are inevitable, however. Even within a field such as institutional theory, leading academics sometimes appear unaware of each others' work: Lowndes and Roberts (2013) and Thornton et al. (2012), for example, scarcely reference each others' back catalogue, while Fligstein and McAdam's institutionalist-informed fields theory (2012) appears to miss the literature on institutional work (Lawrence & Suddaby, 2006). I have no doubt that I have passed over areas of scholarship that, given time and space, would add depth

and weight to this study. The challenge has been to consciously choose, as far as practicable, which gaps to leave.

Opportunities for real-world application are, inevitably, contingent on the situations into which the research might be applied. A PhD thesis offers no straightforward pathways towards informing policy and practice, although I have been conscious of the possibility of informing policy in developing the transition model presented above. Attention to institutional logics helps to reveal how policy may become more 'sticky', becoming ingrained in the outlook of actors and ordering their working lives. To be of practical use, however, the research needs to be summarised in a way that makes sense to people working in an institutional environment. As part of my initial discussion with gatekeepers at each case study organisation, I offered to produce a summary report of my findings. These are currently being prepared.

10.5.3 Back to Utopia

While increased policy activity, coupled with technological advances, may be sufficient to achieve significant reductions in carbon emissions, this is unlikely to shift the norms, values and ambitions that gave rise to the emissions in the first place. This suggests that the problem of environmental damage, even if the issue of greenhouse gas emissions is successfully addressed, is likely to arise in new and equally challenging forms. Simply demanding new values, mindsets or cultures is naive. The issue is how to divert the embedded logics through which society operates. That calls for attention to the cognitive and normative processes through which cultures are established and maintained. The critique and destabilisation of society therefore needs to be at a more fundamental level, with an acknowledgement that such processes are long-term, hard-fought, and often invisible in their short-term effects. The object of critique thus shifts from the political to the epistemological.

From such a position, utopian imaginaries take on a distinct role. They become, as Ricoeur says, ways of critiquing the real: of challenging the legitimacy of existing orders. In Boltanski and Thévenot's terms (2006), they set out new orders of worth. They provide a basis for a continuing dialectic over

the status function and driving logics of society's core institutions. That dialectic, to use Ricoeur's expression, does not resolve aporia but makes aporia productive. It provides a way of leaving future generations not with solutions, but with more helpful problems.

What cannot be factored into this approach is the shifts at a landscape scale that Geels (2002, 2004) suggests are necessary in order to achieve lasting transitions. The paradox of researching the future is that we cannot predict what exogenous events will arise or what impacts they will have, or how exactly they might develop from the traditions and trajectories of today's world. The dilemma of wicked problems is the unknown unknowns, the constantly mutating risks (Beck, 1992) that limit predictability.

I would suggest, though, that acknowledgement of risk and uncertainty, coupled with a closer attention to the persistence and mutability of institutional logics, offers a way of expanding the focus of climate policies. Instead of producing a succession of short-term responses to long-term problems, scholars and policymakers might start to critique the long-term logics that have led us into the current climate crisis and might, if recast, lead us beyond it. By finding ways to live with an ever-evolving crisis we might also learn how to avoid catastrophe.

Word count: 87,683

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Appendix A: Topic guide

Anchor institutions and low carbon transitions: draft questions for case study interviews

1 making sense - what's the story?

where did involvement in low carbon/environmental activity start for you?
what is the organisational story you became part of when you arrived here?
what metaphors or images come to mind when you think of your role here?

1a your organisation: how do you see a low carbon/sustainable future?
prompts:
ask specific questions about each organisation's known initiatives
'low carbon business as usual'? [same world, different technologies]
socio-technical realignment? [a social shift/evolution led by carbon reduction]
a different set of values? [low carbon as a means to a socio-political end]
1b personal: what kind of future do you imagine for yourselves and the places you live in?
what ideas of the future inform your work?
what factors affect how that works out in practice?

2 taking action

how urgent do you think the issue of climate change is for your organisation?
what specific actions are you involved in that are moving your organisation towards a low carbon future?
prompts:
examples of innovation
why is this innovative?
how does this fit within the organisation's wider role and purpose?
prompts: specific questions about each organisation's known initiatives
what actions are you involved in at a wider scale within your city but outside your own organisation? (issue of 'anchors')
what actions would you like to take in future but can't right now?
are there actions you have started but not been able to continue?
what sort of factors or issues get in the way of action?

3 forming associations

how do you communicate and persuade others of the importance of what you are doing?
within your organisation
within your locality?

at a wider scale?
who is involved in that process of communication?
which colleagues or networks?
at what level of seniority or role?
who is included or excluded and why?
how do those networks operate?
do you think others within your organisation see the future in the same way as you?
who sets the agenda on low carbon issues?
how do you disseminate and promote innovation and 'good practice'?
what successes and challenges have you encountered?
prompt: examples
what changes or progress have you been able to observe?
what influence do you see your organisation having over low carbon transitions at an urban/wider scale? ('anchor' question)
do you think other organisations in your city/network see the future in the same way as you?

4 challenges

what challenges or difficulties have you encountered in advancing low carbon thinking/action?
within your organisation
within your locality?
at a wider scale?
what types of challenges?
resources?
power/influence?
information?
capacity?

5 resolutions

have these difficulties been resolved?
if yes, how?
if no, why not?

6 reflections

having had this conversation do you have any other thoughts or reflections on your/your organisation's role?

7 reflective post-interview questions

what implicit assumptions are revealed through this interview - about my questions and the responses?
where are the gaps and silences?

what questions didn’t get asked because of time pressures or attitude of the interviewee?
what do I need to do to fill the gaps?

Appendix B: Topic guide for focus group discussions

Aim: to consider the dynamics of change within each organisation, and to explore the limits and constraints on change in the context of institutional logics.

Drivers of change

- within your organisation, what factors are most important in influencing environmental change?
- what factors from outside your organisation are most important and why?

Extent of change: institutional boundaries

- what parameters does your organisation set around what changes are possible, given its function and context?
- who or what most influences these boundaries?

Understandings of change - re-reading the institution / openness

- what kind of low carbon futures are possible in this organisation's context?
- what different understandings of the institution's role, mission and objectives are possible?

Scales of change

- in what respects does the urban location constrain or focus what you can do?
- how do knowledge networks and peer learning beyond the urban scale influence your organisation?

Landscape effects

- looking at national or global scales, what factors are most important in triggering change in your organisation or limiting it?

Appendix C: Information sheet

Research project: urban 'anchor institutions' and low carbon futures

About this project

This PhD research project focuses on 'anchor institutions' and low carbon futures. The project seeks to explore how some of the main stakeholders in a selection of UK cities can lead the way towards a low carbon society. Julian Dobson will be the researcher and will conduct all interviews and focus group discussions.

The project will investigate how organisations are conceptualising low carbon futures; how they are communicating these narratives to staff, colleagues and key stakeholders; and how they are influencing wider networks both at an urban scale and beyond. While I am interested in specific carbon-reduction actions that are being taken within organisations (for example, on energy use) the prime focus is on how the organisation's culture is being generated, developed and changed in order to achieve the wider changes necessary to make the transition from a fossil-fuel based society.

Purpose of the study

The purpose of the study is to generate transferable learning on how some key institutions in British cities are rethinking their roles in order to prepare for a low carbon future. While I am undertaking the project in order to achieve a PhD qualification, I am also doing this in the hope of helping to inform public debate and urban practice within the UK.

The study will clearly place demands on your organisation in terms of making time available for interviews and focus groups and responding to queries, and I will keep participants fully informed of the likely commitment involved. Individual interviews should last around one hour and it is unlikely that any individual will need to be interviewed more than twice. Focus group discussions are likely to last no more than an hour, and I hope to carry out two focus group discussions in each research location.

In return for your participation, I hope your organisation will benefit from the opportunity to reflect on its approach to a key social and economic challenge, and from sharing learning with other organisations playing similar roles in different locations. As well as producing a PhD thesis from my research, I also intend to produce a readable summary document that will be made available to your organisation and can be freely shared among your networks.

Timescales

Most of the fieldwork for the study will take place between October 2015 and September 2016. My PhD thesis will be submitted in mid-2017 and further outputs in terms of articles and reports are likely to take place from 2017 onwards.

Confidentiality

All participants will be offered the option of being identified by job title, by pseudonym, or entirely anonymously. Audio recordings will only take place with the permission of interviewees (in the case of focus groups, all participants will be asked for permission before recording takes place). Organisations will be offered the option of being identified by name, by pseudonym or generically (for example, as 'a housing organisation in the north of England'). However, throughout the study participants will be able to provide information in confidence, and in such instances the informant will not be identified in any way. Participants will be given notes from interviews and focus groups for feedback and clarification and at this time will be free to ask for comments not to be attributed.

Data will all be stored on Sheffield Hallam University's secure systems and retained in accordance with prevailing regulations on privacy and open data. Transcripts of all interviews and focus groups will be anonymised and any confidential material redacted. Any anonymised data stored temporarily (for example, on a flash drive) will be securely erased after it has been transferred.

Right to withdraw

Under EU legislation, all participants have the right to withdraw from the research and have their data removed from the study within two weeks of their last engagement with the research. Participants do not have to give any reason for choosing to withdraw.

Once the initial findings from each organisation have been written up, participants will be given the opportunity to comment on and clarify any relevant findings as they emerge.

Research questions

The overarching question in this research is how urban 'anchor institutions' in the UK articulate, advocate and influence potential transitions towards a low carbon society through their visions and concepts of possible futures. Specifically, it will address the following questions:

1. In the face of the challenges of climate change, how are potential transitions to a low carbon society conceptualised, transmitted and contested through discourses of possible futures?

2. How are discourses used to frame and narrate concepts of low carbon futures, and what are the characteristics of such discourses?

3. What connections are being made both within and as a consequence of institutions' discourses on low carbon futures, and how do these enrol and mobilise stakeholders in support of particular goals, visions, or interpretations of reality?

4. How do institutions compete for position and influence through their narratives of low carbon transitions and their networks of support; and what light does this throw on wider issues of power and dominance?

Fieldwork

The fieldwork for this project will be conducted between autumn 2015 and summer 2016, with the possibility of a small number of follow-up interviews in late 2016. The research will take place in three locations in the UK, each focusing on a different 'anchor institution'.

As participants you will probably be involved in no more than two interviews of about one hour's duration, and no more than two hour-long focus groups. It is hoped that on completion of the research an event can be arranged to share and discuss findings.

Uses of the research

The information gathered from the fieldwork will be primarily used to inform a PhD thesis. There will also be a readable summary document that research participants will be free to use and share, and I hope to be able to arrange an event where research participants can discuss the findings.

Research findings will be disseminated through a variety of channels: articles in academic journals, presentations at conferences, and articles in relevant specialist magazines and newspapers. Forms of dissemination will depend on the findings of the research, and participants will be kept fully informed of plans as they develop.

I also hope to produce a blog on emerging questions and issues during the course of my research. The content of the blog will be thematic rather than specific to particular organisations, and no participant or institution will be identified in anything that appears in it.

Contact information

If you have any queries you can contact me at Julian.Dobson@student.shu.ac.uk or on 07545 874556.

If you have a question or problem that you do not feel able to discuss with the researcher you can contact Peter Wells, the research supervisor:

Professor Peter Wells
Centre for Regional Economic and Social Research
Sheffield Hallam University
City Campus
Howard Street
Sheffield
S1 1WB
Tel: 0114 225 3073
p.wells@shu.ac.uk

Appendix D: Consent form

Consent Form: Research on anchor institutions and low carbon futures

Please answer the following questions by ticking the response that applies

	YES	NO
1. I have read the Information Sheet for this study and / or had details of the study explained to me and understand that I may ask further questions at any point.	☐	☐
2. I understand that I am free to withdraw from the study without giving a reason. If I change my mind I should contact Julian Dobson on 07545 874556 or at Julian.Dobson@student.shu.ac.uk up to 14 days after the interview date.	☐	☐
3. I understand that I can stop the interview at any point or choose not to answer any particular questions and this will not have any impact on me or my organisation.	☐	☐
4. I understand that the information collected will remain confidential, unless I say anything that makes the researcher concerned that there is a risk of harm to me or someone else. In these circumstances I understand that the researcher must report this information to the relevant agency that can provide assistance.	☐	☐
5. I understand that my personal details such as my name will not be shared outside this project.	☐	☐
6. I agree that the data in anonymised form can be used for other research purposes (e.g. writing articles in journals).	☐	☐
7. I agree to take part in the interview for the above study.	☐	☐
8. I agree for the interview to be audio recorded and to quotes being used, attributed as agreed (either by job title, pseudonym or anonymously). I understand my name won't be used.	☐	☐
9. I agree to information being attributed as follows [please delete those that do not apply]: **by job title only** / **by pseudonym** (e.g. "Jo Smith") / **anonymously** (e.g. "informant X")	☐	☐

If you have any concerns about any aspect of the study that you wish to discuss with Sheffield Hallam University, please contact:

Professor Peter Wells
Centre for Regional Economic and Social Research
Sheffield Hallam University
City Campus, Howard Street
Sheffield S1 1WB
Tel: 0114 225 3073
p.wells@shu.ac.uk

Name of participant	Signature	Date
Name of researcher	Signature	Date

Appendix E: Coding schema for interview analysis

Stage 1: 'molar coding'. Chunks of text were extracted from interviews, anonymised, colour coded, and re-filed according to five categories:

a) Prefiguration - imaginaries of the future
b) Configuration - conflicts between imagined futures and current realities
c) Refiguration - resolutions to conflicts, moves towards a changed future
d) Institutional logics - evidence of overarching logics and their effects
e) Networks and relationships

Some text fitted two or more categories, in which case it was pasted into more than one document.

Stage 2: 'granular coding'. Each category was then analysed to identify strong themes and areas of interest. This granular analysis is illustrated by a list of themes emerging under the 'prefiguration' category:

a) Personal drive, inspiration
b) Contextual factors or 'landscape' issues
c) Entrepreneurship
d) Institutional direction
e) Internal rationale of organisation
f) Effects of networks and relationships
g) Concepts of transition
h) Making meanings

An example of this coding of the 'prefigurative' material from one interview with a senior manager at Gentoo is included below.

Interview E - senior

I'm, erm, specifically asked to look at innovation, and, er, strategic influence and a way to then use that, I suppose, influence, wider - both, both with similar organisations, housing associations, into government, but then maybe with new partners, people who we necessarily we wouldn't automatically appear to have a relationship with, and as the agenda, as the agenda changes.

JD: So when you say from the top, was it the board, or was it the chief exec?

The chief exec, from X, from X right out from the front end. You were, er, you were - you just heard that, that **here was a CEO who, who had a determination not to just play at greenwash, to drive through, and, and that mirrored other aspirations he had for the organisation as well, you know, about the art of living, and how that whole bottom line needed to be understood and reflected and acted upon now. Not, not just as I say, playing at it, touching it, greenwashing it. Fundamental change, how we do stuff for the better.** *[coded: personal drive, inspiration]*

…**in 2005 it probably very much was about ISO14001 and being compliant. But very quickly as the organisation grew up, developed its own personality, this, this thing wasn't just left on the limb**, on, the responsibility of the health and safety manager and the environment- - you know, as many organisations do have, that one person doing like health and safety and environmental manager, and it's part of his day job, you know he's got seven other things going on *[coded: institutional direction]*, and... But here it was actually placed right in the heart of it. And that's been consistent.

I would say I would act as a translator. That, that I get that, erm, people necessarily don't understand carbon, or, or, green is still a little easy to misrepresent, not buy into because it's, it's not what I do, I'm not green. So I, I act as a translator. You know, OK, that's all right but by doing what you do in a way that you'll have to change slightly, you still deliver what you want, you still improve, I don't know, productivity, you still improve the lives of the people in the homes you're responsible for, you still achieve an x percent saving in pounds and pence as it's your efficiency, so it's, it's that role to allow people to see the value they have in our journey. That, that - but not without changing what they do essentially. You still have to be an accountant, you still have to be a builder, you still have to be this, but, but if you can, if we can still allow you to do what you do but we will just look at it, you know. We'll add that third dimension and we'll count something different to what you're already counting. Without - it's, it's then you start to see attitudes changing, people engage with because you, you're giving them an extra value, you're allowing them to take responsibility, ownership, and for an improvement which you are looking to achieve, and, and that improvement might have pounds and pence importance to that person, but behind that is the, is the carbon data we need. So it's that, it's that, it's decarbonisation by the back door. A dirty secret as it almost were, you know the elephant that dare not speak its name, but you know… *[coded: making meanings]*

We have to fundamentally change how people live. Fundamentally change how people live. And that's how they - and I'm, I classify it in three ways. How you live, how you move, and how you eat. So where you're living, how you're living, how you're moving around where you're living, and how you're eating. *[coded: ideas of transition]* Because there's huge carbon in water, capturing that and, I mean I don't have these conversations on a daily basis, because they are, they are, it's not a subject you brace [broach?] easily when you're talking carbon, you're making, trying to make that much of an inch

[gestures] difference, and to talk such…

What - on a much grander level, it's the nuances of - it's what I always say is the coalface of sustainability, as it were. We're at that coalface. [laughs] You can have that better engagement because you've got evidence to point at, to say, you know to say we've done the big stuff for you, now if you do this… And, and you see it, you see the conversations about VW, er, Shell in the Arctic, the deinvestment of coal, and ten years ago that just wouldn't have happened. And fracking - you know, the, the campaign for [against?] fracking - that's, that's aligned the crusties and the colonels. It's, it's the edges are now blurred now, no longer the preserve of the dreadlocked hippy. *[coded: making meanings]* It's, it's, people are campaigning from the streets.

I think re-engineered's a better word. I don't - you know, people will still need power, people are still going to need homes, and 80, 80 per cent of the homes we've built will still exist in 2050, or are already built, so you know we're not going to just, just wipe out cities and rebuild, you know it's a re-engineering. *[coded: ideas of transition]* It's, it's a - what would be interesting for me is, is the, and I can never get my head round it, is the retrofitting for grey water, the concept that we, you know, I have a head full of stats and the one that always sticks is, all drinking, all water in this county is produced to drinking standard yet we drink 1 per cent.

On the big organisations, and if you look at some of the, M&S, Unilever, Coca-Cola, they are - they're really thinking big about how do you take water out of their system or move people better or allow people to work nearer to where they live, and yes, that is changing as - and that's, you can really feel the conversation, the mood changing, the, the aspiration changing, you know the government today saying to deinvest in coal by 2025, the fact that most power stations will have gone pop by 2025. *[coded: contextual drivers]* It's not, it's irrelevant. How it is badged I don't care, but that's huge…

I mean I really think five, and you know I've been working professionally as an environmentalist for fifteen, and the first part of that, the first ten years, the six to eleven years was all just about compliance, but now in the last five it's, I think people's expectations have changed, as, as in the Joe Public's expectations have changed, I think companies who have a social consciousness are, are coming to the fore, and, and, you know seeing value in the brand, again are

they doing it for the environmental cause or are, are they doing it for the strength of their brand, you know how they do it, if, if it delivers environmental improvements you know, it's, that's not the consequences but it's a real selling point, a real positive effect. *[coded: making meanings]*

I don't think Gentoo is sat there waiting for others to prove the point, I think they're part of the mix and are saying actually, we're just going to do it because it's the right thing to do, and it has, it's spiralled out a load of social issues [unclear]. If you think one of the programmes we're involved with specifically is boilers on prescription, that was only ever born out of, because we'd spent two years trying to really understand the environmental impacts, impacts, of home improvements. And while we were looking for pound and pence savings or energy consumption reductions or carbon reductions, what we were actually being told is huge health benefits to the families that live in those homes. *[coded: institutional direction]*

There is. I mean, there is the, there is the Planet Smart programme, and that's, you've probably heard from the previous interviewees, it's, it's… this almost privately owned programme. You know it's, we didn't come up with it, we didn't design something and then pass it to the rest of the organisation, this is, this how you're going to be green because we don't know what you do, in the nicest possible way. Only you know you best - you can come up with it - and I genuinely, **I genuinely believe by nature we are all environmentalists. We just choose to recognise that something else within ourselves. We've spent and trying to take the time [to recognise] what other people recognise it as, and then as Gentoo tried to create a programme, it has taken us further and faster and in directions we could never have designed** from Green. *[coded: entrepreneurship]* We could never have suggested how this, how this would have taken off.

Everything's done on a five year cycle so - but in an organisation like ourselves and the others who are doing it, you know there's evidence to say actually this is the right thing. What you want is happening within this space, you know, and you know in things like the boiler on prescription programme, you know it will help with your NHS targets. You take it and you run with it and basically it will help with the NHS targets but ultimately it will improve the housing stock as well… *[coded: institutional direction]*

…we want things to happen, we want things to happen fast, and who has the ability to, to do that, that's at the exec level. It's the nature of the beast. If

you want change, it's no… you know, and possibly that's how I understand you if I have to understand very quickly, you know, can you effect change, because if not I need to have that conversation with the person who can, and you might be looking at me and say can you effect change, how much?

Appendix F: Documentary material examined from case study organisations

Gentoo

Boiler on prescription (n.d.)
Gentoo Group board member recruitment pack (n.d.)
Greening your organization (n.d.) (presentation)
PAYS: A Government backed retrofit programme by Gentoo (n.d.)
Planet Smart Journal: third edition (n.d.)
Retrofit reality: a dissemination report by Gentoo (n.d.) (3 documents)
The Energy Saving Bundle Report (n.d.)
The Green Deal: A community approach for all housing providers (n.d.)
Environmental strategy and action plan 2007-2010
Environmental policy: Making the world Planet Smart (2012)
Group annual report (2012)
Footsteps: A sustainability impact report by Gentoo, 2012/2013
Creating planet smart 'street champions' to help reduce fuel poverty for all: Green Community Behaviour Change Programme 2013
Art of living: Responsible business report 2014
Sustainable procurement policy 2014-2017
Customer annual report 2015-16
Annual report and accounts 2016
Boiler on prescription trial: Closing report (2016)
Warm homes for health: End of study briefing (Bangor University, 2016)

Manchester Metropolitan University

About Manchester Metropolitan University. (n.d.) (website content)
Birley Campus Sustainability Trail (n.d., brochure)
Environmental sustainability policy (n.d.)
Carbon management plan: Creating a greener future (n.d.)
MMU and the environment (n.d.)
6 Monthly Report on MMU Carbon Management Plan (2011)
Environmental sustainability policy (2014)
Environmental sustainability strategy 2014-2020
LED lighting and control: the MMU story (2015) (presentation)
MMU annual environmental sustainability statement 2008-2009
Annual environmental sustainability statement 2009-2010
Annual environmental sustainability statement 2010-2011
Annual environmental sustainability statement 2012-2013
Sustainable procurement policy (2014)
Environmental sustainability statement 2014-2015
Environmental sustainability statement 2015-2016

Nottingham City Council

Connecting Nottingham's Businesses to Low Carbon Energy - Join the Movement (n.d.) (Enviroenergy brochure)
Ultra low emission city prospectus (n.d.)
Nottingham Sustainable Urban Development Plan (Department for Communities and Local Government, n.d.)
A Waste-Less Nottingham: Waste strategy 2010-2030 (2010)
Energy strategy 2010-2020 (2010)
Nottingham City Council Carbon Management Plan 2011-2016
The Nottingham community climate change strategy 2012-2020 (2011)
Green Nottingham Partnership terms of reference (2012)
Nottinghamshire and Nottingham Replacement Waste Local Plan: Waste Core Strategy (2013)
Nottingham Authority Monitoring Report, December 2015
Nottingham City Council: Council plan 2015-2019.