The policy implications of everyday energy consumption:

The meanings, temporal rhythms and social dynamics of energy use

Submitted by Nicola Hole to the University of Exeter as a thesis for the degree of Doctor of Philosophy in Geography

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Abstract

Traditional research into pro-environmental behaviour change has a tendency to be focussed on *either* the context in which practices are enacted or the cognitive processes that lead to particular behaviours. Research is often located within individual disciplines, with policy implications defined by (often) narrow interpretations of a problem. Despite increasing recognition of the ability of behaviour change to significantly contribute to the reduction in emissions required to meet UK targets, policy is so far failing to encourage 'normative' low carbon practices in many areas of life.

Based on theories of social practice, this thesis attempts to redress the relationship between individuals and behaviour in order to discover how energy practices are developed, maintained and reconfigured. Specifically, it develops a phenomenological approach to energy consumption by exploring how energy practices are experienced by individuals on a daily basis, based on the premise that much human behaviour is driven by individuals' perceptions of their actions. The study highlights the importance of the meanings and associations that individuals possess in relation to their energy practices and how these are implicated by their experiences, past and present. Furthermore, it contends that practices are influenced by social interactional dynamics and normative frameworks within the home, as well as by the form and frequency of social relations external to the home.

With energy consumption so closely interlocked with the practices with which individuals engage in a daily basis, this thesis suggests that policy needs to be more in tune with the everyday experiences of energy consumers. It concludes by setting out a form of policy-making that has the potential to reduce everyday energy use by being sensitive to the experiences and well-being of individuals and society.

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Acronyms

AYDYB	Are You Doing Your Bit?
BIT	Behavioural Insights Team
CCC	Committee on Climate Change
CCS	Carbon Capture and Storage
CERT	Carbon Emissions Reduction Target
CSA	Community Supported Agriculture
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
ECCC	Energy and Climate Change Committee
ECO	Energy Company Obligation
EEC	Energy Efficiency Commitment
GDP	Gross Domestic Product
GHG	Greenhouse Gas
IPA	Interpretive Phenomenological Analysis
IPCC	Intergovernmental Panel on Climate Change
LSOA	Lower Layer Super Output Area
MSOA	Middle Layer Super Output Area
NEF	New Economics Foundation
NSMC	National Social Marketing Centre
OA	Output Area
ONS	Office for National Statistics
SPT	Social Practice Theory
ToE	Tonne of Oil Equivalent
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UKERC	UK Energy Research Centre

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1 Introduction

There is currently great interest in, and benefit to be obtained from, the acquisition of a better understanding of different aspects of human-environment interactions. As a result of European expansion overseas during the 17th and 18th centuries, attention began to turn to the human capacity to change the natural environment (Goudie 2006). While the desire to understand more about the relationship individuals have with the environment is not new, this long-running interest has become especially salient in recent decades as the true extent, and consequence, of human involvement in the natural world has revealed itself.

Mary Somerville and George Marsh were some of the first to document the effects of human behaviour on the environment and their work is considered to mark the start of the environmental movement (Marsh 1864; Somerville 1848). While humans have always taken advantage of their natural surroundings, the mid-19th century (and the industrial revolution) saw a step change in the benefits society was able to gain from exploiting resources from the natural environment. However, it has only really been since the middle of the 20th century that increasing attention has turned to both the scale and consequence of human interaction with the environment and the impacts of the exploitation of natural resources. Since then, the environmental movement has evolved, marked by the creation of environmental organisations (e.g. Friends of the Earth in 1969 and the Worldwatch Institute in 1975), the publication of key texts (e.g. Silent Spring in 1962, Limits to Growth in 1972 and The Brundtland Report in 1987), the formation of major global bodies (e.g. The United Nations Environment Programme in 1972 and The Intergovernmental Panel on Climate Change in 1988) and the consequent development of international agreements (e.g. Kyoto in 1997 and The Amsterdam Declaration in 2001).

Momentum in the environmental movement, as recorded in these key texts and by these key organisations, has developed primarily out of an awareness of environmental implications of the human-environment relationship. From urban air pollution to contaminated land, water shortages to biodiversity depletion, a variety of environmental problems pose a serious threat to environmental

sustainability and human health. These publications and global bodies have made clear that the health and well-being of future generations rests on our ability to manage and protect ecosystems in the present day. Encouraging development and prosperity while at the same time protecting and managing the environment is the challenge that faces today's global leaders.

Our relationship with energy resources has evolved significantly over a relatively short time frame. The industrial revolution, for example, was only made possible by the extensive consumption of coal. Fuel availability and energy infrastructures have been instrumental in shaping the practices and processes within today's society, from forms of communication, to agricultural practices and urbanisation. For generations, the exploitation of fossil fuels (and in particular oil, coal and gas) has provided the foundation for significant economic development. It has more recently become clear, however, that unchecked fossil fuel exploitation is environmentally unsustainable and that climate change resulting from CO_2 and other greenhouse gases (GHGs) poses a significant threat to human welfare: that not acting to reduce such emissions risks economic, environmental, human life and security threats of unparalleled magnitude (N. Stern 2007). The scale and immediacy of the climatic changes has stimulated global efforts to find the most effective and efficient ways to reduce greenhouse gas emissions. The willingness and ability of states to reduce carbon dioxide emissions and control greenhouse gas concentrations at a global scale will be crucial for climate stabilization (Fouquet & Pearson 2012). Since the energy system is both the primary cause of climate change and the primary means of mitigation, the future evolution of energy policy is, thus, of critical importance (Scrase et al. 2009).

This thesis is fundamentally concerned with how the energy system can evolve in a way that is sensitive to the environment while at the same time allowing individuals to lead healthy, happy and satisfying lives. Researchers and policymakers continue to seek an understanding of how changes to the energy system can contribute to the necessary energy transition. Energy research has traditionally focused on the technical aspects of the energy challenge but more recently attention has turned to the role individual behaviour can play in enabling the transition to a low carbon future. It has become clear that rather

than relying solely on new energy supply technologies, attention needs to be paid to the ways in which people consume and relate to energy.

There are clear parallels between general research into how and why human behaviour develops, which has been advancing with momentum since the 1960s, and more specific research into the energy consumption of individuals and households. Research investigating individual behaviour is prominent in the fields of psychology, economics and sociology, ranging from studies of cognitive processes at an individual level to analyses of the context and circumstance of behaviour. Most recently it has been behavioural economics (a discipline combining insights from economics and psychology) that has gained popular attention for the tools it can provide policymakers with when addressing issues related to behaviour change. Shortly after the general election in 2010, the UK government established a 'Behavioural insights Team', which utilised findings from behavioural economics. This so-called 'nudge unit' drew particularly from the work of Richard Thaler and Cass Sunstein on changing what they call 'choice architecture' in order to stimulate certain decisions, demonstrating the potential power of building a better understanding of the ways people behave.

Despite the success of several mechanisms that draw on popular theories of behaviour change (e.g. curb-side recycling, charges for plastic bags), uncertainty remains over the extent to which gains from incremental changes to behaviour can deliver the significant reductions in carbon emissions required to set the UK on the path to meeting the targets set out in the 2008 Climate Change Act. On the one hand, low carbon lifestyles need to be made as simple as possible. For this reason, unilateral government control (such as regulation) has an important place in policy-making. People live in very different ways and opportunities to cut down on energy consumption that can be undertaken independently of individuals and without extensive public deliberation (only allowing the sale of efficient boilers and energy saving light bulbs for example) need to be optimised. However, this thesis contends that we need to reconsider the way in which we approach the aspects of policy-making that require the engagement and participation of households. The following section sets out research questions that aim to deliver a more comprehensive understanding of

the multi-faceted nature of everyday energy use and presents the original starting points from which the questions were founded.

1.1   Reimagining the energy-lifestyle nexus

The following overarching research question underpins the thesis:

> How do households, as social units, configure their energy practices over time and in what way can policy utilise such understandings?

A further three, more specific, research questions have emerged which will shape the rest of the thesis.

1. What meanings, benefits and associations are bound up in the everyday consumption of energy?

2. Do energy practices have a temporal dimension to them and if so, how does this impact upon their performance?

3. How do the social systems in which lifestyles have become embedded and the social processes, interactions and arrangements within households shape and reinforce patterns of energy consuming practices?

The following section sets out the three original starting points of the thesis. In doing so, it provides a useful contribution to the literature around environmental behaviour, and delivers a discussion that enhances the debate around effective policy implementation at the demand side of the energy system. The three starting points are that:

- An occupation with individual behaviour in isolation has underplayed the importance of social dynamics within the formation of energy practices
- Practices are frequently considered outside of a temporal context, limiting an understanding of continuity and change
- Our understandings of behaviour and practices have been limited by a narrow methodological exploration of everyday life and the experience of individuals.

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The first point from which this thesis departs relates to the social dynamics involved in the formation of energy-related practices. A fixation with the individual has hitherto dominated the research agenda on environmental behaviour. While recognition of the 'social' is emerging in the literature (Tom Hargreaves et al. 2011; Warde 2005), this thesis attempts to reveal the depth of the social processes involved in the configuration of everyday energy practices and the complexities of the ever-evolving relationships between individuals that can impact on the way practices are both perceived and carried out. The social dynamics within families and friendship groups, and between an individual and those they encounter at work, in social settings and through service provision are all likely to have a bearing on the performance of practices.

The second starting point for this thesis is the temporal dimension of practices. Although many behavioural accounts focus on how behaviours change over time and the mechanisms that can be implemented for encouraging change, there is little in the way of analysis of the impact of time itself on behaviour. Given that individuals are largely a product of their experiences, it follows that particular behaviours are influenced by past interactions or encounters. Delving into the personal and social of history of individuals may be beneficial to the development of a more comprehensive understanding of the space energy practices occupy within the lives of individuals. Ignoring a temporal dimension and focusing only on the current conditions within which a practice is carried out portrays practices as static and incumbent rather than the dynamic and evolving entities they are understood to be. This thesis challenges this representation and instead considers how practices may be maintained or changed across a lifecourse.

The third contention from which this thesis starts relates to the dominant approaches through which information around behaviours, practices and lifestyles are currently accessed. The type of information that is gathered and the way in which it is acquired is influential to the types of understanding that develop from it. The thesis contends that a narrow methodological exploration of practices has served to portray practices in a manner that disregards the experience of everyday life and the dimensions of it. For this reason, the thesis applies a phenomenological approach to energy lifestyles. Phenomenology

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focuses on the experience of everyday life and adopting a phenomenological analysis offers an opportunity to investigate the ways in which individuals make sense of and interpret their day to day practices and the meanings they assign to them. Interpretive Phenomenological Analysis (IPA) places great importance on personal accounts of experience, which in this study will allow the meanings and priorities of energy use within people's lives to come to the fore. While social practice theory will provide a theoretical framework for the thesis, there is a discrepancy within this body of literature around the classification of meaning with regard to practices. Shove et al. (2012) point to a lack of agreement around how to characterise meaning, emotion and motivation relating to practices. This thesis argues that 'meaning' is acknowledged but underrepresented in the social practice literature and the implementation of Interpretive Phenomenological Analysis (IPA) therefore encourages a focus on the context and nature of lived experiences.

With these starting points and research questions, this thesis aims to contribute to knowledge within this ever expanding field of research and provide policymakers with a means to approach the considerable challenge of tackling the escalating energy demanded from individuals' lifestyles. The thesis will also focus on locating solutions that not only reduce energy demand but which also allow individuals and communities to prosper, recognising that low carbon lifestyles cannot be defined as sustainable if they serve to have a negative impact on personal well-being. Venhoeven et al., (2013) recognise the subjectivity of well-being in relation to pro-environmental behaviour and emphasise the importance of a focus on achieving the most positive relationship between pro-environmental behaviour and well-being. Likewise, the policy solutions posed within this thesis attempt to appeal to those who are increasingly concerned about the energy intensity of western lifestyles, but who also value the implications for the well-being of society.

1.2   Outlining the thesis

The thesis is made up of a total of eight chapters, including this introduction. Chapter Two begins by introducing the global climate and energy challenge and the implications of such a challenge for the UK. Specifically, the scale of the

emissions reductions targets is outlined with a focus in particular on the domestic emissions and the policy landscape currently dealing with the emissions arising from this sector. It is argued that the traditional classification through which emissions are accounted inadequately accounts for the scale of behaviour and lifestyle change that will be required if emission reduction targets are to be met. With households as the proposed unit of study, a more comprehensive definition of domestic energy use is put forward. For the purposes of the study, household energy use is defined as comprising the direct emissions one consumes within their home as well as energy used for personal transportation and the energy consumed upstream in the production of goods and services.

Chapter Two then outlines the theoretical context in which this thesis is situated by providing a comprehensive review of the literature around individuals and pro-environmental behaviour. Two major streams of work investigating pro-environmental behaviour are presented, first looking at individualistic representations of behaviour and then detailing more social accounts of behaviour. The chapter aims to utilise streams of thought from different disciplines in order to develop a rounded conceptualisation of behaviour and practices, sympathetic to both cognitions and the social situations in which they develop. Social practice theory (SPT) is chosen as an appropriate theoretical tool through which to address the behaviours of individuals at the middle level of the household. At the same time it is noted that the socio-structural level at which SPT is placed will need to be expanded for the range and depth of understanding sought within this thesis. The following section of the chapter explores two further dimensions of practice in more detail, in particular the social dynamics of practice and the temporal nature of energy practices. Based on the review of previous knowledge, the chapter concludes with a set of research questions, outlined above, that will shape the remainder of the thesis.

Chapter Three sets out the methodological foundations of the thesis arguing that a social constructivist philosophy is most useful in helping to uncover the processes by which specific groups or communities create their own social reality and routine. A phenomenological approach is argued to be the most appropriate methodological tool for exploring the experience of everyday life,

the focus of which being an individual's perceptions of their experience, based on the notion that much human behaviour is driven by what people perceive to be real. The chapter explains the choice of Interpretive Phenomenological Analysis (IPA) as the phenomenological research method. In dealing with the experience of the individual, IPA is concerned in particular with the *nature* of cognitions. This could be viewed as the antithesis of the practice theory framework presented in the literature review but the chapter explains that rather than studying the cognitions themselves, it is the social nature of cognitions, their meanings and values, and their evolution over time that is worthy of exploration. The chapter concludes by providing details of the in-depth interviews that provided the data for the study and the data analysis processes that were undertaken on this data. Finally, the chapter addresses questions around data validity and the ethical considerations of undertaking such a study.

Chapters Four, Five and Six then provide an idiographic (meaning the detailed exploration of individual cases) account of the interactions and discussions with individuals and couples within two communities in Cornwall. Chapter Four examines the stories and meanings behind people's energy use, investigating in particular the notion of nonmonetary costs and benefits associated with low carbon practices. The chapter considers the personal return individuals acquire from different practices in relation to the costs expended. This idea is expanded upon using example of connectedness to nature, time, pleasure, and notions of quality, comfort and convenience. The chapter ends by reflecting on current conceptualisations of 'spill-over' and specifically the way in which it is studied as occurring successively, with an environmental motivation as the connecting factor. An alternative perspective on spill-over is presented that suggests that it may be that underlying meanings in the wider context are more crucial to the take up multiple pro-environmental practices.

Chapter Five develops the concept of a lifecourse approach to energy demand. This provides a way of considering continuity and change in energy use throughout the course of an individual's life and allows the associations, interactions and connections between individuals and their energy practices to be traced over time. The chapter begins by considering the influence of socio-historic time on energy practices; that is, the impact on behaviour of the socio-

economic, cultural and political context of the influential years of early adulthood. The second half of the chapter explores how the stages or phases of life present particular opportunities and constraints with regard to different energy related practices. The chapter utilises the interviews in order to consider how practices can be a product of effectively harmonising the demands of everyday life.

Chapter Six presents an account of the 'social interactional' elements of energy practices. It begins by considering the interactional dimensions within households that shape the way practices develop. In particular, the chapter explores the way in which, when speaking of their energy practices, interactions between individuals would often be framed financially. This financial emphasis around individual interactions appeared to be significant in shaping the normalised performance of energy practices within households. The second half of the chapter explores the impact of social dimensions outside of the household to consider how energy related behaviour is organised around, and influenced by, the social environment in which an individual or household is situated. In particular, this section investigates the role of social capital in day-to-day lives and the potential for increased levels of social capital to lower the cost of co-operation within communities.

Chapter Seven brings together the findings of the previous three chapters to look at how policy can potentially benefit from redressing the problem of rising energy demand in a way that is more responsive to the experience of individuals with regard to their energy use. It begins by looking at the current policy priorities shaping the demand-side of the energy system and the objectives or values that direct these. It is then suggested that, alongside this more traditional stream of policy-making, there needs to be a set of policies that consider more effectively the experience of individuals. It is argued that a focus on building the core economy alongside an appreciation of the need for a more 'experiential' form of policy-making will likely lead to better outcomes for both policymakers and society more widely. The chapter uses the interview data to expand on the idea that a greater appreciation of the experience of everyday life will lead to policy-making that resonates with individuals. The final sections of the chapter use the examples of transport and food policy to demonstrate how

an application of experiential policy-making could lead to a healthier, better connected and more engaged society.

Chapter Eight concludes the thesis by addressing each of the research questions in turn and proposing that if policy is to successfully reconfigure the energy practices of individuals then social and temporal dimensions of practice must be acknowledged, alongside an appreciation of the meanings individuals ascribe to their everyday behaviours. This is based on the premise that much energy-related behaviour is undertaken in order to reach personally and socially valued end states. The concluding chapter considers the policy implications of this by setting out a strategy that aligns societal and environmental goals.

2   The energy challenge: people and practices

The following chapter comprises a review of the key literature relating to energy demand, individuals and pro-environmental behaviour. In doing so, it provides a theoretical rationale for the thesis. Section 2.1 begins by outlining the emissions reduction challenge faced by the UK, with a particular focus on the role of people in the demand for energy. Section 2.2 goes on to explore the treatment of behaviour within the disciplines of economics, psychology and sociology and the way in which theoretical representations of human behaviour have been applied to policy-making. Section 2.3 then situates the study by examining the 'household' and conceptualisations of it. Applying social practice theory to energy practices at the household level, it is argued that there has been inadequate exploration of the role of meaning and value with regard to people's energy practices. Section 2.4 goes on to investigate the social and temporal dimensions of energy practices at the household level, arguing that they have been under explored with relation to the impact they can have on energy practices. The chapter concludes with the research questions that shape the remainder of the thesis.

2.1   UK emission reductions and equity at a global scale

In order to contain the threat of climate change, global emissions need to be cut by about 50 per cent by 2050 according to the Committee on Climate Change (CCC 2008), for which global consensus and rapid action is imperative. International agreement is required as to the steps to be taken by individual countries, based on historic emissions and future growth needs. In many of the world's poorest nations there is a development imperative to expand access to modern energy services; safe, clean, reliable and affordable energy is widely recognised as critical for advancing other development objectives. For example, in order to meet the Millennium Development Goal of halving the proportion of people living in poverty by 2015, almost 1.2 billion additional people need access to electricity and 1.9 billion people need access to modern fuels, according to estimates prepared for the United Nations Development Programme (UNDP & WHO 2009). Alongside providing basic energy services to those without access, there are a group of countries with rapidly expanding

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economies undergoing major growth within manufacturing and energy-intensive production. As these societies industrialise, demand is likely to rise from other energy sectors as the lifestyles of those citizens within them change. Globally, population and income are two of the most powerful forces behind the rising demand for energy. With population projected to rise by 1.4 billion over the next 20 years and real income likely to rise by 100 per cent over the same period (BP 2011), the world is facing significant growth in the production and consumption of energy.

The scale and complexity of the climate and consequently energy challenge requires co-operation at the international, national and individual level. In an effort to prevent dangerous anthropogenic climate change, the UK has committed, through the 2008 Climate Change Act, to an 80 per cent cut in greenhouse gas emissions by 2050 compared to 1990 levels. The Act is legally binding on current and future governments and is complemented by the formation of an independent Committee on Climate Change (CCC) who recommend a system of carbon budgets through successive five-year periods. For the UK to successfully meet these targets, a clear strategy for sectoral emissions reductions is essential, as is a policy framework that can deliver them. There is cross-party agreement in the UK that in order to reach the legally binding targets of the 2008 Climate Change Act the UK energy system needs to be revolutionised. One aspect of this will be the decarbonisation of the power sector and the end of the UKs reliance upon fossil fuels. This, in turn, will be made possible by the development and deployment of new technologies and through harnessing less environmentally harmful sources of energy. A new energy system must be capable of enhancing the diversity, reliability and independence of national energy supplies. Both the previous and current UK government have signalled a commitment to a low carbon development path, with future energy supply often envisioned as a mix of renewable energy alongside nuclear power and carbon capture and storage (CCS) (HM Government 2009). Whilst this study does not explicitly focus on the potential pathways for UK energy supply, the implications of the path taken will undoubtedly have knock-on effects for the rest of the energy system. The focus of this thesis is instead on the UK's demand for energy and in particular the opportunity for energy demand reduction to function as a key component in the

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transition to a low carbon future. Tackling energy demand has slowly been gaining momentum as an important element of a path to emissions reductions at reasonable cost (CCC 2008; Ekins et al. 2010; HM Government 2009), with many now clear that the only way to achieve significant cuts in emissions is through 'ambitious per capita demand reduction' (HM Government 2010:34). While energy demand reduction will be required from all sectors, it is the consumptive activities of individuals that have the potential to return the greatest gains to emissions reductions targets, as is explained within the following section.

2.1.1 Domestic sector energy demand

Total final energy consumption in the UK domestic sector (excluding energy from transportation) was 43,152 thousand tonnes of oil equivalent[1] (ktoe) in 2012, accounting for 29 per cent of total UK final energy consumption (DECC 2013). In the UK, the period between 1990 and 2004 saw an 18 per cent increase in energy use in the domestic sector. From 2004, where energy use peaked, until 2009, there was a general decline. This is prior to the recession and coincided with steep energy price rises for the residential sector (Boardman 2010 p. 74). Being heavily influenced by external temperatures, significant increases in 2010 and 2012 are thought to be due largely to colder than average years. Prior to these hikes, improvements in energy efficiency are also thought to have played a part slowly reducing total domestic energy consumption in the UK. The figures also reflect an increase in the number of UK households in 2012; up 20 per cent since 1990, with UK population increasing by 12 per cent in the same period (DECC 2013). Space heating represents the

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[1] The tonne of oil equivalent (toe) is a unit of energy: the amount of energy released by burning one tonne of crude oil, approximately 42 GJ.

primary use of energy at the household level, accounting for roughly 60 per cent, with the remainder being used for water, cooking and lighting and appliances. At a national level, the number of households, UK population and disposable income are all thought to be significant factors in determining domestic energy consumption. Official projections suggest that the UK population will grow from levels of around 62 million in 2012 to 66 million in 2020 and 71 million by 2030, with average household size likely to fall from current standing of 2.3 people to 2.1 people by 2030 (CCC 2010). Although uncertainty around the global economy makes economic predictions difficult, it has been estimated that annual real household disposable income growth will average 2.0% over the period 2011 to 2026 inclusive (National Grid 2011). These figures highlight the necessity of achieving deep cuts from the residential sector if national CO_2 reduction targets are to be achieved (Boardman 2007). Rising energy prices, the increasing problem of fuel poverty and concerns over energy security have also served to raise interest in the opportunities to bring down domestic energy demand. It has been estimated that domestic sector emissions have the potential to be cut by 60 per cent between 1996 and 2050, with two-thirds of the reduction in this scenario coming from demand reduction and one third from low and zero carbon technologies (Boardman et al. 2005). In highlighting the extent to which domestic sector emissions contribute to the overall emissions landscape within the UK, the following section explores how the UK government has approached the challenge of reducing energy demand from within the domestic sector. It then shifts to consider the way in which research within the academic and wider community has and continues to inform policy implementation in this area.

2.1.2 Policy landscape for the domestic sector

It is widely accepted that the UK now needs to undergo a new energy transition on account of the current system being socially, economically and environmentally unsustainable. Historical energy transitions have taken many decades to unfold but have generally evolved quicker where there has been significant comparative advantage of the new technologies and practices compared to the incumbent ones (Grubler 2012). The current transition is one

driven by the externality issues caused by global warming and a desire for energy security. These benefits are long-term and intangible (POST 2008) and consequently, ensuring the transition will involve significant public policy intervention.

As part of the government's emissions reduction strategy, a plan has been set out to spend £3.2 billion by 2030 to help households become more energy efficient (HM Government 2009). Although the technological advancements necessary for meeting both renewable energy and energy efficiency targets appear achievable (CCC 2008), the government has so far had to rely heavily upon financial incentives and regulation in order to realise emissions savings in these areas. A variety of regulatory instruments have improved standards in the building sector and the introduction of efficiency labels on appliances has become commonplace in not just the UK but EU-wide. In 2002, the Department of Environment, Food and Rural Affairs (DEFRA) introduced the Energy Efficiency Commitment (EEC), a three year energy saving objective for domestic energy suppliers. The 2004 Housing Act established a target to improve residential energy efficiency in England by at least 20 per cent by 2010 from a year 2000 baseline. The EEC was renamed the Carbon Emissions Reduction Target (CERT) in 2008 and runs as a legally binding obligation placed on gas and electricity suppliers to spend a fixed amount per customer on efficiency measures or renewable energy technologies each year. Ancillary initiatives in place include Warm Front, designed to deliver energy efficiency measures to those on the lowest incomes, and various activities run by the Energy Saving Trust. Given that space heating accounts for the largest segment of household energy consumption (around 60 per cent), this is the area in which the majority of improvements have so far been made, via cavity wall and loft insulation and high efficiency condensing boilers (DECC 2012a).

Tackling levels of efficiency represents a cost effective and relatively straightforward step in reducing emissions. Tackling the emissions from the domestic sector, and buildings in particular, is thought to be more cost effective comparative to emissions cuts elsewhere, or compared to the cost of providing additional supply (HM Government 2009). The government has placed energy efficiency at the heart of a strategy to deliver low carbon buildings over the

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following decade (DECC 2012b). The coalition set out their approach to energy efficiency in the 2011 Carbon Plan (DECC 2011), which was followed by the Energy Efficiency Strategy, published in November 2012 (DECC 2012c). Achieving 80 per cent cuts in emissions means that all buildings, or very nearly all, will need to be zero carbon by 2050; requiring better insulation, more energy-efficient products and heating from low carbon sources (CCC 2010). This in itself is a huge challenge when one considers that at least 80 per cent of the homes that will be standing in 2050 having already been built, and that the UK housing stock is one of the least efficient in Europe (Boardman et al. 2005).

Within the Low Carbon Transition Plan released under the Labour government in 2009 (HM Government 2009), proposals were announced for a far more efficient housing stock by 2050, with the majority of heat and electricity in homes to be generated from low carbon sources. Shortly after the 2010 general election, Prime Minister David Cameron pledged that the coalition government would be the greenest government ever, and announced their flagship Green Deal and Energy Company Obligation (ECO) programmes as key elements of their energy strategy (HM Government 2010). The Green Deal and ECO were designed to overcome both the upfront and hidden costs associated with investing in efficiency improvements that are often cited as barriers in preventing consumers from realising energy saving opportunities (NAO 2003; Ofgem 2009). The Green Deal offers loans with repayments that are lower than expected savings and which are tied to properties rather than individuals. The response from homeowners would suggest that the scheme does not appear as attractive the government would have wished. Figures released by the Department of Energy and Climate Change (DECC) show that since the scheme's launch in January 2013, 626 finished installations had taken place by the end of December, with another 493 pending with plans signed (DECC 2014). These figures are significantly lower than was estimated; in March 2013, Greg Barker, the Minister of State for Climate Change voiced his hopes for 10,000 plans to be signed and ready to install by the end of 2013. The primary challenge for the Green Deal was in creating a mainstream market uptake for energy efficiency (UKGBC 2008). Although providing upfront capital goes some way in making energy efficiency instalments easier, it would appear as though less tangible psychological and sociological factors also need to be considered

when trying to overcome consumer inertia (McNamara & Grubb 2011; NERA 2007). Admittedly the Green Deal has only just ended its first year, but from the evidence so far it seems unlikely that it will be able to stimulate the 'step change' required in order for the full potential of household energy efficiency improvements to be realised (Ekins et al. 2010:357).

The market for domestic energy efficiency within the UK is complex and highly fragmented (UKGBC 2008), based on various inter-related policies and involving a range of decision-makers and stakeholders. There is a history of incremental updates in framework policies instigated by short-term politics that have served to unhinge a sector reliant on a stable and predictable policy landscape (Brophy Haney et al. 2010). Only a clear and stable framework for continued success with current policy initiatives alongside a dedicated framework for delivering low carbon retrofits of existing buildings will see efficiency potentials realised. The savings resulting from efficiency policies to date, although significant, have been less than optimal. This is due mainly to a steadily rising number of households, containing an increasing number of energy demanding appliances. An increase in the number of households in particular has meant that many of the gains made through technological and efficiency improvements have been unable to counterbalance the rising demand for energy. Between 1990 and 2009 there was a nine per cent reduction in energy consumption per UK household and yet, within the same period, overall domestic energy consumption increased by seven per cent (during which time the number of households in the UK increased by 18 per cent) (DECC 2010). Despite the array of policy mechanisms in place to encourage the adoption of efficiency measures, uncertainty remains over the extent to which the gains from efficiency improvements can be relied upon to deliver significant reductions in carbon emissions. In countries often thought to set standards on energy efficiency, such as Denmark and the Netherlands, there has not been the fall in emissions that you may expect considering their aggressive energy efficiency programmes (Keay 2005). Whilst the demand for energy services continues to rise, it will remain difficult for efficiency savings to lead to associated reductions in overall energy demand; clearly policy has to extend beyond efficiency in order for net energy demand to decrease.

2.1.3 The household as active energy users

The physical variables associated with energy use within buildings, such as surrounding climate, building design, and the efficiency of appliances were, up until the 1970s, considered the primary factors that could explain any significant differences in energy consumption between households. Individuals were assumed to be passive receivers of energy, having little impact on demand. The perceived potential for, and subsequent interest in, behavioural change with regard to energy use was therefore small in comparison with the possible savings to be found in building and technology design. The beginnings of research into the behavioural aspects of energy consumption came during the energy crisis of the 1970s. Energy shortages and price shocks led to a swath of government-backed research into previously overlooked aspects of energy demand. It became clear that there was a social aspect to the use of energy. The Twin Rivers Project, a study from the Princeton Centre for Energy and Environmental Studies has since become well-known for highlighting the importance of individual behaviour in determining energy demand, revealing that even under identical conditions, there is the potential for energy consumption to vary as much as two to one (Socolow 1978). For efficient technologies/installations to have a significant positive impact, social acceptance, widespread take-up and appropriate use were all noted as important factors to success (Constanzo et al. 1986). In order to reduce energy use in buildings it has become clear that as well as technical solutions, the behaviour of individuals needs to change (P. Stern & Aronson 1984). This has paved the way for more detailed investigation into how lifestyles shape energy use and has forced a previously sceptical engineering-orientated establishment, fixated upon a techno-economic paradigm, to include a social science perspective in research into energy demand (Janda 2011).

2.1.4 Beyond the household

Whilst the GHG emissions from the domestic sector account for a significant proportion of all the UK GHG emissions (at around 30 per cent), it is not the only area of emissions for which individuals are responsible. The classification of emissions to specific sectors is a product of the way the UK accounts for all

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of its GHG emissions. The UK GHG inventory, published by DECC, measures UK emissions on a 'territorial' basis which means it only includes those emissions which occur within the UK's borders. It is this territorial accounting that is used when reporting to the United Nations Framework Convention on Climate Change (UNFCCC) and the European Commission (EC) to track progress towards domestic and international emissions reduction targets (ECCC 2012). There is as yet no international consensus on the way to allocate emissions from aviation and shipping to national inventories and so these emissions are emitted from national totals. Territorial accounting is particularly problematic in that it doesn't take into account embedded emissions; that is the emissions embedded within the manufactured goods and services imported and exported to and from the UK. While the UK may be on a slow decline of territorial GHG emissions, emissions from a consumption perspective are rising with the gap between the two increasing year on year (Barrett et al. 2012; Peters et al. 2011). Consumption-based emission modelling requires additional and more complex forms of accounting and analysis. However, without this form of accounting, it is difficult to get a complete picture of the progress in regional and national emissions reductions which is a concern considering the significant variation in country level mitigation ambitions (Barrett et al. 2012).

Within the territorial emissions perspective, individuals appear accountable for the domestic sector emissions when in fact, from a consumption perspective, households are responsible for over three quarters of UK GHG emissions (Druckman & Jackson 2009). It has been estimated that embedded CO_2 accounts for over half of the average UK household's carbon footprint, with the average UK household emitting over a quarter of its CO_2 emissions in the pursuit of recreation and leisure (*ibid*). High quantities of GHG emissions come from indirect energy consumption. The food sector, for example, accounts for approximately 30 percent of the world's total energy consumption (FAO 2011). Within developed countries such as the UK, the energy demand for primary production of typically around 10 percent, for transport and processing around 15 percent, and for cooking and preparation up to 75 percent. These numbers highlight the importance of examining energy demand from a consumption perspective within this thesis. Rather than linking households only to the direct emissions they consume within their home (for space and water heating,

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lighting, appliances and cooking) my research will incorporate the energy used for personal transportation, water usage, waste disposal and the energy consumed upstream in the production of goods and services purchased by UK households. At an global level, it has been established that water, energy and food securities and interdependent and any strategy that focuses on one part of the water-food-energy nexus without considering its interconnections risks serious unintended consequences (World Economic Forum (WEF) 2011). Similarly, it would be ill-considered to analyse the process through which society can move towards sustainable lifestyles without considering the connected everyday practices that result in the consumption of energy. Exploring practices related to food, water and energy consumption will provide a more complete understanding of how individuals are responsible for over three quarters of UK GHG emissions and the potential difficulties and opportunities associated with reducing these emissions. The following section will investigate the role of people and their behaviour in creating demand for energy and the services it provides. It will begin with an exploration of the concept of behaviour change and the application of the term within theory and policy contexts.

2.2   Behaviour and practices: disciplines, theories and perspectives

The acknowledgement of household members as active energy users has paved the way for a different approach to demand reduction in the domestic sector. Alongside tackling energy efficiency and increasing low carbon energy generation, it has become clear that reducing energy demand through behaviour change will play a crucial part in the transition to a low carbon future. A previous policy reliance on technical solutions has given way to a government calling on substantial behaviour change from all sectors of society (HM Government 2009). It has been suggested that we need an improved and more robust theory of energy consumption, accounting for social contexts, the architecture of choice, the power of routines and habits and the inertia of the material environment (Harold Wilhite 2009). With appropriate policy action, the UK Energy Research Centre (UKERC) has estimated that social and lifestyle change has the potential to reduce carbon emissions and national energy use by 30 and 35 per cent below 1990 and 2000 levels respectively (UKERC, 2009)

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and that these changes have the potential to reduce the cost of delivering the 2050 target by up to £70 billion (Ekins et al. 2010). With households spending approximately £20 billion on energy each year, the value of possible savings to individuals is thought to outweigh the costs of programmes aimed at improving efficiency and reducing consumption many times over (NAO 2008). Reducing demand through behavioural change can also help to insure against barriers that may arise in technological deployment, such as failures with, or public resistance against, key supply-side developments (such as in wind, wave and solar technologies).

Intermittently, but for more than a century, social scientists have been interested in how society is motivated to use or conserve energy (Rosa et al. 1988). As set out above, the first major wave of research into household energy conservation began after the energy crises of the 1970s to prepare for the possibility of future oil shortages. The stimulus for investigation changed slightly in the 1980s when the negative environmental impacts of fossil fuel use became the principal motivating factor (Poortinga et al. 2003). More recently, it has become clear that reducing energy use in buildings is a critical component of meeting carbon reduction commitments (Janda 2011). The benefits of a social science perspective - considering how people use energy, how they think about efficiency, how their lifestyles are shaped by cultural practices, social norms and different values – have been substantiated and demonstrated in environmental and energy fields. Propelled by the increasingly acknowledged benefits of lifestyle change in tackling emissions reductions, research into pro-environmental behaviour continues to expand (Tom Hargreaves 2011). Investigations into human behaviour and the mechanisms through which it can be changed are scattered throughout an array of disciplines and utilised by a variety of practitioners. From psychology, sociology and anthropology to

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economics and engineering, the human factor in energy and environmental studies has become an unrelenting force. Researchers in many fields are active in trying to understand the ways in which pro-environmental behaviour[3] can be triggered and sustained.

2.2.1 Modelling human behaviour

In efforts to aid the application of new behavioural insights into policy, a variety of models have been developed across a variety of disciplines to try to encapsulate the factors upon which behaviours are based. These conceptual models are based on various underlying assumptions about the nature of human development and learning, emphasising different aspects of human behaviour. Put simply, they develop understanding around why people do or do not adopt pro-environmental behaviours. Many influential and commonly-used theoretical frameworks have been developed to help ascertain the factors, both positive and negative, that have an influence on pro-environmental behaviour. The effective implementation of policies that alter behaviours often rely explicitly or implicitly on these 'models' of what behaviour is and how it is influenced, shaped and modified. Models are generally built from a set of conceptual premises, and some form of causal relationship between dependent and independent variables (T Jackson 2005). The limitations of conceptual models relates to their often high level of complexity and subsequent lack of openings

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[3] Although various definitions exist I take Kollmuss and Agyeman's (2002) definition of pro-environmental behaviour to mean those that 'consciously seek to minimize the negative impact of one's actions on the natural and built world …' (p. 240).

for policy intervention. For this reason, hybrids often emerge that are developed or revised versions of earlier models or a combination of ideas from models spanning disciplines. Although acutely aware of the overlaps between research into the environment and human behaviour, economics, psychology and sociology are three key disciplines that actively research within this area. Each provides very different insights into behaviour based on the theoretical concepts that are at the heart of these subjects. Both economics and psychology are focused primarily on the individual and the cognitive processing of individuals that leads to different outcomes. Conversely, sociology has at its centre the context and conditions in which people exist. These generalisations do not do justice to the complexity of the subjects and the research within them into human behaviour. In fact, there are many cross-overs between disciplines and their off-shoots and understandings of behaviour supersede strict disciplinary boundaries. However, for ease of understanding, the following section will begin by presenting those theories of behaviour that lean towards the individual and processes of cognition before then moving on to explore theories more sociological and context-focussed in nature. The section will conclude with an investigation into the policy implications of the different research fields.

2.2.1.1 Individualist and cognitive representations of behaviour

In the last fifty years of pro-environmental behaviour investigation research has favoured what can be known as individualistic or cognitive representations of behaviour. This means that the individual, and in particular their cognitive processing, has been at the centre of most enquiries. The following section demonstrates the application of this representation of behaviour, in both economics and psychology, and comments on the way in which insights have been utilized by policymakers to date.

Economics has a long history within environmental behaviour research; the neo-classical theory of rational choice in particular has prevailed in policymaking. Rational choice theory was initially employed for modelling economic behaviour but it has grown to position itself as an overarching theory of human action. A theory of rational choice views individuals as motivated by things that express their preferences (Scott 2000). Based on the accessible

information, individuals will anticipate the outcomes of the available choices and act in a way that will be optimal to them, within the constraints of their situation (financial or geographical for example). In this way, they will be maximising their own utility or satisfaction. What distinguishes rational choice theory is its tendency to ignore all but rational and calculative action. In pro-environmental behaviour policy-making, the rational choice model is often utilised under the premise that providing individuals with the information required to make informed choice will lead to an optimum outcome. The policy application of models of rational choice tends to focus on rewarding, penalizing or incentivising particular behaviours in order to change the optimal outcome for individuals. In the sphere of environmental behaviour and in particular around the private provision of a public good, the rational choice theory would suggest free-riding and overconsumption would dominate (Olson 1965). It has no explanation for participation in activities that offer no individual gain, such as the voluntary protection of a common good.

Psychology has expanded upon the idea of the individual as a rational decision maker, with early research posing attitudes and underlying value orientations as predictors of behaviour and in particular the combination of egoistic, altruistic and biospheric values (Stern et al., 1993; De Groot, and Steg, 2008). It was the identification of a gap between action and underlying values – the 'value action gap' (Blake 1999) – that prompted researchers to explore the possibility of intermediary factors that could be impacting upon this relationship. Many psychologists have attempted to identify the internal characteristics of an individual that result in particular behaviours and subsequently, several nuanced models of human behaviour have formed on the back of rational choice theory. Expected outcomes and the values associated with them have been expanded upon to create models which present a more nuanced picture around the assumptions of rational choice.

Prominent psychologists Icek Ajzen and Martin Fishbein advanced knowledge around the rational choice model by focusing on the relationship between attitudes and behaviour in their *Theory of reasoned action* (Fishbein & Ajzen 1975) and *Theory of planned behaviour* (Ajzen 1991). They were the first models to consistently produce results that suggested a link between individual

attitude and behaviour. The TPB included measures of social norms and perceived behavioural control and the inclusion of different variables that recognised that individuals do not act in isolation. Models have progressed in levels of sophistication and a variety of influencing elements have been included within models. Space precludes a comprehensive review (see Stern, (2000) and Jackson (2005) for more detail) but these broader influences extend to the role of moral and normative concerns (Cialdini et al. 1990; Van Liere & Dunlap 1978; S. H. Schwartz 1977) and affect (Steg 2005).

The importance of habits to individual behaviour has been addressed within the social-psychology literature. Harry Triandis first included the role of habits in behavioural processes (Triandis 1977) and since then their role has been studied more extensively (Verplanken 2006). Routines and habits are non-reflective, repeated patterns of activity disconnected from rational thought. Routines often work as effective strategies for minimising the effort of organising daily life (Schäfer & Bamberg 2008), with many of us locked in to practices around the home (Hobson, 2003). Habitual behaviour is a notion that is implied in more recent work within the field of behavioural economics, in the literature on 'nudging' (Thaler & Sunstein 2008). The idea behind 'nudging' is that people go through much of their daily routine using their 'automatic system'. Therefore, if you want to address behavioural problems around finance, health and the environment for example, then the 'choice architecture' around individuals should be changed in order to help steer particular behaviours. Research around habits is one example of the way in which the 'value-action' gap within psychology has been addressed. It has fostered a greater understanding of the factors around deliberative cognitive processes that can impact upon individual action. Contextual factors have gradually been considered within the psychological literature on behaviour, as authors have recognised their role in moderating the processes between individual cognition and action. Contextual factors can be described as the physical, economic and social context in which individuals act. For example, the ability to recycle household waste will depend in some respect on the provision of a local recycling service and appropriate arrangements within the household (Guagnano et al. 1995; Ludwig et al. 1998).

This section has presented concepts in both economics and psychology that have been utilised in order to try and understand why people behave in particular ways. For ease, these have been presented separately, although it has been established within most research circles that both psychological inputs relating to the internal condition of the individual and economic theory on external constraints both have roles to play in targeting behaviour (P.C. Stern & Oskamp 1987). The following section will explore the literature around accounts of human behaviour that place more emphasis on external structure and context and less on individual cognition.

2.2.1.2 Social accounts of behaviour

Whilst behaviour has been extensively studied from an individualistic and cognitive perspective, another section of the literature locates people-environment relations outside of this viewpoint. Although efforts of sociologists and anthropologists (amongst others) to understand energy consumption have been more recent and less abundant than economic studies or research within social or environmental psychology (Bartiaux 2009), there are increasing numbers of authors interested in the social aspects of environmental behaviour. The contributions from sociology to environmental behaviour research have, unsurprisingly, been far more concerned with the role of context on an individual's behaviour. In fact, many theories within sociology are not behavioural at all and shift away from individual attitudes, values and decision making towards 'blocks' or 'patterns of action' (Southerton & Díaz-méndez 2012:21). The theory of social practice exemplifies this by adopting a more socially-orientated approach to environmental behaviour and has brought with it a change of emphasis from the consciously functioning individual to the practice of doing itself. Social practice theory has been described as 'a set of cultural and philosophical accounts that focus on the conditions surrounding the practical carrying out of social life' (Halkier et al. 2011:3). The elements that can constitute practices have variously been described as a combination of cultural conventions, infrastructures, institutions, socio-technical systems, social relations, materials, normative understandings and temporal organisation. In

this capacity, these elements are not simply appendages to a person's decision-making but core components of the formation of social practice.

Theories of social practice are increasingly being used to as a conceptual framework in studies on energy consumption. From mobility practices (Warde 2005) to heating practices (Kirsten Gram-Hanssen 2010), social practice theory has proved to be a popular way of theorizing environmental behaviours. These practice theoretical accounts of behaviour shift the focus from individual to collective aspects of doing, and rather than relating environmentally sensitive behaviour to the rational, co-ordinated outcome of values, beliefs and attitudes, practice theory places 'bodily movement, things, practical knowledge and routine' at the centre of its vocabulary (Reckwitz 2002:259). Sociologists Pierre Bourdieu and Anthony Giddens were prominent in the first wave of research into practices, demonstrating the importance of contextualising individuals in the day-to-day situations they help to constitute (Pierre Bourdieu 1979; Giddens 1984). The focus on *doing* positioned practices in the central line of enquiry, 'symbolic of social science research, the foundations of which are not based in the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time' (Giddens 1984:2). There has been renewed interest in practice theory within both sociology (Sahakian & Wilhite 2013; E Shove et al. 2012; Elizabeth Shove & Pantzar 2005; Warde 2005) and anthropology (Douglas & Isherwood 1996; Evens & Handelmann 2006). Whereas rational and reflective perspectives have continually emphasised conscious reasoning and individual action, the recent wave of interest into social practice demonstrates a belief in the untapped potential of theories of practice to understanding change (E Shove et al. 2012).

At the centre of this renewed interest remains the search for a middle path between the dichotomies of agency (the human ability to engage in social action and bring about change) and structure (the view that social structures determine individual behaviour). The question of whether individuals are free and able to make choices or whether actions are tied to wider forces is not new within social science debate (See Giddens, 1984). In taking practices as the point of reference, individuals become a part of an interlocking puzzle; no more or less important than the technologies, social processes, cultural frameworks, systems

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of provision and institutions that surround them. Instead, individuals become the carriers of practice, both captured by and reproducing practices (Elizabeth Shove & Pantzar 2005). A great deal of literature looks at the challenge of attaching practices to practitioners (Pred 1981; Reckwitz 2002; Warde 2006) and the way in which individuals play a part in reproducing and changing practices. To give an illustration, the practice of working an allotment has a long and varied history in the UK. Allotments have been in existence for hundreds of years; in the 19th century plots of land were handed over to the poor for the provision of food. This was a result of a rapidly industrialising nation and the absence of any form of welfare state. During wartime, the now infamous 'dig for victory' campaigns placed growing your own food as a practice of national interest and a way for everyone to do their bit. By the end of the First World War, land was made available to all and the practice of growing food used to assist returning serviceman, elevating gardening from the poorest sections of society. Since the 1950s, gardens have gone on to reflect trends within society and as such our gardens and the practices carried out within them have altered in relation to aspects of home ownership, affluence, leisure time, healthy eating and environmentalism. This demonstrates the way in which practices can be carried by different practitioners over an expanse of time.

The re-emergence of practice theory has had particular resonance within energy demand studies, where practices act as a buffer between the supply of energy and the individual. Many studies relating to behaviour and symbolic consumption practices tend to refer to a form of discursive consciousness (reaching a conclusion through reason rather than intuition), whereas many environmentally sensitive energy actions relating to energy use are hidden in the habitual undertakings of the everyday (practices of lighting, heating and travelling for example). As a result, energy practices can occur from embedded routines rather than active choice (Tukker 2008). Although applied within a range of disciplines, addressing a variety of problems, there remains no clear, unified approach through which practice theory can be articulated. The most recent attempt to utilise practice theories to better account for change has come from Shove et al. (2012), breaking practices down into three elemental parts in order to conceptualise stability and change:

- Materials – the technologies and things that are a part of practice formation, maintenance and reconfiguration
- Competencies – encompassing practical understandings, skills, embodied know-how or socialised knowledge
- Meanings – including symbolic meanings, ideas and aspirations

Rather than an expression of values and attitudes, the three elements above represent the observable expression of social phenomena (Spurling et al. 2013). Utilising practice theory highlights a different set of constituent parts that go in to forming the activities of lifestyles, much of which is side-lined when analysing behaviour as the outcome of individualistic cognitive processes. Taking showering or bathing as an example as Shove et al. (2012) do, it is possible to use a theory of practice to demonstrate how a shift in practices over time has come about because of cumulative differences in the elements of which it is formed. Firstly, certain material components are required: clean water obviously, but more recently a shower, bath or wet room and the cleaning products that are currently associated with normal everyday bathing. As well as these materials, certain competencies are required. Competence in self-cleansing is obviously needed, but also, to successfully perform the practice, knowledge of when, and how often to perform the practice. Competence is therefore intrinsically related to cultural conventions around cleanliness. The need to appear well presented at a business meeting but the appropriateness of an unkempt, muddy appearance at a music festival are a product of socially shared expectations and meanings. This multi-layered conceptualisation of behaviour demonstrates the difficulty in applying policies that tackle single elements of behaviour alone. Understanding that there are different elements that comprise the practices of consuming energy (routines, conventions, resources and aspirations for example) allows policy intervention to be reframed from a practice perspective. This three-way model of understanding social practices, and it's relevance to the energy behaviours of individuals, is explained in more detail in section 2.4. Applying a theory of practice may help to develop a more complete picture of the energy demand system and the way various incumbent actors, materials and systems help to construct current lifestyles and obstruct or enable new practices. As a theoretical approach, it

removes the focus both from individuals and from the 'pro-environmental' nature of practices, potentially leading to a more systemic understanding of the embedded nature of current lifestyles and therefore the type and extent of changes that are required to encourage more sustainable lifestyles in the future.

2.2.1.3 On merging streams of thought

Having presented these separate areas of enquiry around human behaviour it is necessary to consider how the existence of these different streams of research impact upon policy. In particular, clarity is needed around how policy-making benefits from, or is hindered by, the insights from separate disciplines. There will always be (healthy) disagreements among researchers. Psychology has been criticised for `an emphasis on individual behaviour change (which) may not be the most effective way of tackling society's relationship with climate change' (Uzzell 2008:4) and sociology condemned for being 'overly structural and undifferentiated…offering little in the way of practical solutions to pressing societal problems' (Whitmarsh et al. 2011:258).

There is an encouraging array of research being undertaken into ways in which individuals and practices can shift in order for demand reduction to play a significant role in a more sustainable future. An increasing quantity of research within a variety of disciplines has the potential to be beneficial in widening understandings of people, practices and change. This belief appears to be reiterated in the form of increased calls for interdisciplinary research from both research councils and policymakers. There are still issues of contention – whether or not, for example, it will be possible to find harmony between contrasting theoretical paradigms. On the one hand it has been argued that multiple perspectives and approaches offer a complementary and more complete understanding of a subject (*ibid*). Opposing this, it has been stated that contrasting paradigms are incommensurable, in that they shape problems, execute methods and collate evidence in ways that are incompatible (E Shove 2010, 2011). There is no doubt that a problem is defined by the very nature of the way in which it is imagined and this framing and other assumptions regarding cause and effect will shape the way in which a problem is tackled and solutions are posed. This is something that needs to be taken into consideration

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when policymakers look at the challenges they are faced with; the need to ensure that future pathways are not being restricted through the disregard of all but their own, or popular, interpretations of a problem. Having said this, the issue we are currently faced with, and with which this study deals, is one of bringing down energy demand. This isn't the definition from the realms of a particular worldview, rather one of the only solutions to significantly reducing emissions within the UK. This is the point of departure from which policy needs to be made. This study aims to broaden understandings of lifestyles and the role of energy within them to achieve just this; policy relevant discussions around multi-level and multi-faceted aspects of energy demand.

2.2.2 Policy application of behavioural models

Policy often seeks to encourage a change away from conduct seen as undesirable, whether related to the environment, human health or anti-social behaviour. There is a long history of enacting policies aimed at altering environmentally sensitive behaviour, ranging from the tax on landfill to the Climate Change Levy. Despite all of the above models and conceptualisations of behaviour, the attempts of UK policymakers to change behaviour within the environmental sphere has been confined to a few key ideas. Policymaking on energy demand reduction and pro-environmental behaviour change has, to date, been dominated by the persistent utilisation of a linear, rational and cognitive model of behaviour. The most common application of this model has come in the form of education and information provision. Environmental awareness campaigns have been popular within the UK, the most famous being '*Are you doing your bit?*' (AYDYB) but including others such as '*Save It*', '*Helping the Earth Begins at Home*' and '*Do a little, change a lot*'. A review of AYDYB by DEFRA concluded that 'personal motivation to act appeared less strong and there had only been small changes in consumer attitude or behaviour' (DEFRA 2003:10). These campaigns are built on the assumption of 'information-deficit' where it is assumed that people do not have enough (or the correct) information. A related linear model of persuasion is also frequently adopted by government in order to try and change attitudes towards issues such as climate change. Again, this is thought to result in an ultimate change in

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behaviour to fall in line with an attitude. Policy based on these models of change frames pro-environmental behaviour change as a straightforward choice that all individuals or businesses are able to make (HM Government 2009 pp. 36, 143, 170). The endurance of an information-based approach can be partly explained by the simplicity of any related intervention. For government, in the same way that using market based instruments, labelling and minimum standards to achieve efficiency gains achieved is considered politically safe (E Shove 2004), viewing behaviour change as achievable through increased and tailored information avoids difficult questions concerning individual needs and how resource intensive lifestyles may be managed.

Although information, in both an educational and persuasive capacity has a role to play in the creation of sustainable lifestyle, too narrow a conception of the link between information and action belies the complexity of individual behaviour. It has become more widely accepted that barriers to action do not lie primarily in the lack of information or understanding (Owens 2000) and that relying on an 'informed and accepting public' (Macnaghten & Jacobs 1997:15) is a weak and ineffective strategy. In fact, within much academic research, the power of information in changing behaviour has been largely rejected (Agyeman & Angus 2003; Lorenzoni et al. 2007). In light of this, interventions based on social marketing have gained in popularity in recent years. Social marketing is the process of influencing human behaviour on a large scale using marketing principles with the purpose of societal benefit rather than commercial profit (W. A. Smith 2006). It draws heavily from psychology and the tools the discipline has identified as useful in changing individual behaviour. Community-based social marketing, a variation on social marketing, was developed in an attempt to change the behaviour of communities. It is based on the premise that initiatives to promote behaviour change are often most effective when they are carried out at the community level and involve direct contact with people (McKenzie-Mohr 2013). Within the UK, the National Social Marketing Centre (NSMC) is the centre of excellence for social marketing and behaviour change in the country. It was established in 2005 to provide guidance across government using the 'the systematic application of marketing concepts and techniques to achieve specific behavioural goals relevant to a social good" (French & Blair-Stevens 2006:39).

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In 2010, the UK government showed a renewed interest in the power of behaviour change interventions to achieve policy goals with the launch of the Behavioural Insights Team (BIT). In particular, the Behavioural Insights Team championed the role of 'nudging' (see 2.2.1.1) as an additional tool in promoting more desirable behaviours (Thaler & Sunstein 2008). In practice, utilising the concept has involved subtle persuasion, incentivization and some intelligent changes to the environment in which people live. While 'nudging' may have a role in changing certain behaviours, it has been argued that the nudge perspective is inadequate to deal with all the behaviour change challenges facing society. In particular, it has been argued that choosing to support a doctrine such as 'nudge', at the expense of evidence around the effectiveness of different interventions targeting specific behaviours, is like applying a one-size fits all approach to behaviour change (West & Michie 2010). Intervening at a policy level in order to try to achieve a change in behaviour will always be complex and quite often contentious. Models that have been guiding behaviour change interventions are, by definition, based upon very simplistic conceptions of why people behave in the way they do. All models go some way in explaining part of the process that can lead to pro-environmental behaviours, but none can encapsulate all the factors influential in shaping and determining behaviour.

While policymakers are attempting to influence the behaviour of individuals within society, the most striking observation around the policy approach to sustainable, low carbon lifestyles is the disconnect between government claims regarding the scale and nature of change required on one hand, and what is being invested in through current policy initiatives on the other (T Hargreaves & Restorick 2006). This may be due to trepidation on behalf of policymakers between an association between demand reduction policy-making that involves individuals and their behaviours and lifestyles, and threats to individuals' freedom around the consumption of goods and services (DEFRA 2008). Research has indicted that while there appears to be general support for supply-side energy system change, there is greater ambivalence around specific aspects of demand-side interventions (Butler et al. 2013). This research is supported in practice by the slow up-take of the Green Deal.

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It has been established that a positive public perception of policies is helpful to their acceptance (Corner et al. 2011). A 2012 Ipsos MORI study investigating the public opinion on behaviour change policy (across a range of behaviours, related to heath, the environment and saving money) found high levels of support for behaviour change interventions, although less acceptability for behaviour where freedoms were perceived to be lost (Branson et al. 2012). The report went on to highlight that acceptability was not the whole story and rather public preparedness played a big part in the public response. Preparedness includes acceptability but alongside measures such as recognition of the issue, an understanding of potential benefits of action and the effectiveness of any measures proposed (*ibid*). The government talk of the substantial structural and behavioural change required to drive down demand for energy across society (HM Government 2009) and argue for 'shunning the bureaucratic levers of the past and finding intelligent ways to encourage, support and enable people to make better choices for themselves' (HM Government 2009:7). Yet, with existing political and economic structures prioritising solutions based within energy production, it is likely that we will need to see a shift in the social and political attitudes to consumption before the full policy potential of energy demand reduction can realised (Eyre 2011).

2.2.3 People and practices; finding a middle ground

Section 2.2.1 presented contrasting theoretical approaches to pro-environmental behaviour and social change. This thesis aims to develop understanding around the processes through which people consume energy, and in order to do this, a theoretical framework upon which to base findings was required. A practice theoretical approach was deemed the most suitable fit given its emphasis on the significance of communities and networks as crucibles for changes to social practice. It can be predisposed to viewing practice change from a socio-structural level; that is, noting the changing notions of practice over time rather than the differences in individual elements of practice at any one point in time. The project therefore loosely adopts a framework of social practice theory with the caveat that there may be instances where the data and research aims of the project require a challenge to certain

underpinnings of the theory. The following section will adopt a theory of social practice and in doing so explore how the configuration of practices is related to both social and spatial location.

2.3 The social and spatial location of practice

Practices are inherently spatial and temporal. That is, they are a combination of elements that are reproduced at particular moments in time and space (Strengers 2010). The following section will explore in more detail the spatial aspects of practice formation with particular reference to the household. Although the household is often adopted as a unit of measurement with regard to patterns of carbon emissions and energy use, it remains underdeveloped with regard to the processes that exist between members of the same household and how this affects engagement with environmentally sensitive practices. The section below will initially explore various conceptualisations of the household before exploring how households maintain and transmit dominant social practices.

2.3.1 Conceptualising households

The household has been a unit of prime importance in social investigation for a wide range of disciplines for almost half a century (Souvatzi 2008).Although there is discrepancy in the depictions and definitions of a household it can loosely be described as a group of people who live and engage in certain social and economic functions together. Historically, from an economic viewpoint, households have been defined as unified, decision-making entities. Members are assumed to behave in a way that optimises the outcome for the collective of individuals living there, adhering to the utility-maximisation hypothesis. This unitary model has been criticised for being at odds with individual rationality (where people would act in their own best interests) and overlooking entirely the processes through which decisions are reached within households (Daly & Cobb 1989). Subsequent theories have arisen around household bargaining and collective models of household behaviour, taking into consideration the possible variations in preferences of different members of a single household (Chiappori 1997; Manser & Brown 1980). Despite these advances, there is

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doubt as to whether these collective models describe household behaviour any more comprehensively than the unitary model due to the empirical propositions derived from the model often depending on intra-household data that can be difficult to observe (Snyder 2000). Many practices are bound up in routines that have developed gradually over time and that are typically viewed as private. The lowest scale at which (widespread) data is publically available on domestic energy consumption relates to 'lower layer super output areas'[4] but still this data reveals nothing of the social processes through which energy comes to be consumed within households. This chapter argues that an overemphasis on the role of technology and economics has served to conceal the complexity of household behaviour (H. Wilhite et al. 1996; R. R. Wilk & Wilhite 1985) and that of equal importance are the interactional processes within the home.

Studying the household is proposed as a way of overcoming a focus on either the macro level (of institutions, infrastructure and services) or micro level (of attitudes, values and beliefs) exclusively. The household represents a middle, or 'meso', level where the micro and macro collide to produce socially constructed practices. To demonstrate within energy demand studies, a macro-level focus may identify top-down approaches, policy solutions and the overall functioning of a system gleaned from highly aggregated data (Focacci 2003). Opposing this, a micro-level perspective would attend to individuals as single elements, with little regard to the social context or broader societal conditions of a system. Whilst these dominant perspectives may both be useful, in terms of policy outcomes it has been suggested that top down and bottom up models tend to arrive at different outcomes (Unruh 2000). There has, however, been

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[4] Output Areas (OAs) are created for Census data and is the lowest geographical level at which census estimates are provided. Lower Layer Super Output Areas (LSOAs) contain 4-6 OAs with a population of around.

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some work that has taken the meso-level and studied it in greater depth with regard to the energy system, attempting to create a different construction of the reality of energy demand. Schenk (2006) suggests that meso-level analysis describes the energy system from an intermediate aggregation level, acknowledging the mutual coherence of groups of actors. As summed up by Reid et al., (2009:320) 'examining the role of the household as an institution of the meso level, one is recognising that households incubate interactions between micro and macro levels and, importantly, that understanding those interactions can also aid the understanding of pro-environmental behaviour.' Meso-level analysis, therefore, can be seen as a theoretical field where the structural mechanisms and the interactions between macro and micro levels can be observed, avoiding an often polarised representation of the energy system (Haanpaa 2005). The following section will explore in more detail the social elements of practice formation at the meso-level of the household.

2.3.2 The social dynamics of practice

While social practice theory (SPT) has a strongly social element within it, this is generally conceptualised at the societal scale. The attention within SPT is on 'normality rather than novelty' (Tom Hargreaves et al. 2011:9) and therefore it is more difficult, under a SPT approach, to understand sources of change. There is less consideration given within SPT to the social elements of the everyday (e.g. interactions, roles and relationships) that impact on the understandings of, and negotiations around, the enactment of practices. Hargreaves (2011) acknowledges the absence of such dynamics within the social practice literature and calls for 'a greater understanding of the role of social interactions and power relations in the grounded performance of practices' (Tom Hargreaves 2011:79). Within this study, the home acts as an entry point to these social relations and their networks of 'activities, preferences, values, technologies and material structures' (Aune 2007:5363). As well as dimensions of material, competence and meaning, I would argue that there is a 'social interactional' nature to practices that warrants exploration. By this I mean the extent to which significant 'others' (whether family, friends or neighbours) can, at various points in the lifecycle, play a part in shaping the understanding, negotiation and

performance of practice. It has been argued by Warde (2005) that many philosophical accounts of practice are problematic when attempts are made to transpose them into empirical analysis. In particular, he suggests that they are 'insufficiently attentive to the social processes involved in the creation and reproduction of practice' (2005:135). To take an (energy-related) example from the household, Silverstone and Haddon (1996) highlight the different meanings and significances of appliances in the domestic sphere, and the way in which their use rises out of complex processes of social negotiation. The way in which individuals use their heating system, for example, is a result of what the service of heat means to people, how they experience the service and the role of the service in their everyday lives and relationships. Such a conceptualisation suggests that the integration and use of appliances within the home is as much related to a social interactional dimension as it is to material objects. With this in mind, comprehending the energy consumed from appliances becomes a task of understanding how people appropriate the ordinary technologies of the everyday that form the backdrop to many aspects of home life (Green & Adam 2001 p. 174).

Conceptualising practices as social phenomena means taking seriously the idea that the spoken and unspoken interplay between individuals will influence the learning, establishment and reinforcement of practices. In this way, the formation of practice can be described as situated learning; a process of learning that is a function of the activity, context and culture in which it occurs (Lave & Wenger 1991). To take an example, the situated learning of a group of housemates around heating practices will be dependent upon social interactions within the household and will be a product of the merging of individual beliefs and behaviours (relating to notions of adequate warmth and financial feasibility for example). This form of learning brings with it the possibility for variation amongst community members and even intra-community conflict. Acknowledging that many everyday practices are significantly influenced or co-shaped by others underlines the importance of understanding the forms of interplay that can exist between actors.

When practices have become established, roles developed and meanings and engagements around them matured, household practices (and all that they

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entail) could be described as normative frameworks. These frameworks may become the rules that structure everyday behaviour. It is the shared understandings of normality in particular that matter in the reconfiguration of consumption and practice (E Shove 2003). A particular cultural conformity exists around general patterns of domestic life; a set of social expectations through which men and women attempt to communicate positive messages to the outside world in order to show that they are successful, respectful, fashionable and socially desirable (Chapman & Hockey 1999). An understanding around how households maintain and transmit dominant social practices is something that SPT lacks. It has been established that we need further research on the dynamics of household energy cultures 'to shed further light on micro-scale household interactions and dynamics' (Tom Hargreaves et al. 2013:133). Practices of everyday life are highly integrated with each other (K. Gram-Hanssen 2011), embedded within lifestyles and linked to a range of actors, structures and networks. Utilising SPT at the meso-level allows for the depth of examination into energy practices that is required if policy is to be successful in curbing rising levels of energy demand from society. The following section explores elements of SPT in more depth in order to ascertain the contribution it can add to the literature on energy consumption behaviour.

2.4 Social practices at the meso-level

This chapter has so far identified social practice theory as a useful tool in analysing the energy behaviour of individuals. This was followed by an account of the representations of the household that have been envisaged within different research areas. The following section will explore the possibility of integrating a theory of social practice with the 'meso' level of the household in order to better understand the processes, at all levels, within and around households that lead to the formation, endurance and restructuring of energy practices. Acknowledging micro-, meso- and macro- levels and the dimensions of social practice and the connections between them gives a comprehensive picture of the personal and social conditions in which people are consuming energy. There have been attempts to promote the importance of meso-level with regard to the environmentally sensitive practices which occur within them,

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in particular highlighting the diverse needs, interests and concerns of individuals within a household (Grønhøj & Olander 2007; Lahiri-Dutt & Harriden 2008). Despite this, exactly *how* households come to consume and act in the way they do is a largely undeveloped area of study (Gentry et al. 2003). Gronhoj and Olander (Grønhøj & Olander 2007) describe a failure in acknowledging intra-household dynamics when analysing household energy behaviour akin to - borrowing an analogy from Sprey (1971:252) – 'understanding the game of chess by only looking at the outcomes of each game, ignoring entirely the strategies used by each player'. Re-positioning focus on the household will allow for the dynamism of social units to come to the fore. The following section explores in more detail the possibility of different elemental layers of households and how the combination of these layers can impact on the practices that transpire within them. As set out above, (2.2.1.2) and in line with the writings of Shove et al., (2012), three dimensions of social practice are proposed; materials, competencies and meanings. While the three elements of practice are closely intertwined, in order to successfully analyse the contribution of each to the configuration of practice Shove et al. (2012) acknowledge the importance of temporarily separating elements. The following section explores each of these in more detail to highlight how they each contribute to our understandings of pro-environmental behaviours.

2.4.1 Materials

As an element of practice formation, technologies have been given a great deal of attention for the role they play in increasing our everyday demand for energy but also their potential to function as objects for instigating change. From mobility practices, to laundry and cooking practices, much energy expended by individuals has been replaced by that of time-saving appliances over the last century. From domestic appliances alone, electricity use has more than doubled between 1970 and 2010 (DECC 2012d). An ever-increasing number of appliances and technologies available for the home, combined with likely increases in disposable income, single person households and a rise in the overall UK population is set to have a significant impact on practices and related demand for energy within the domestic sector. Around the materials of practice,

emphasis is increasingly being placed on the role that designers can play in shaping new paradigms of energy consumption (Pierce et al. 2010), and the responsibility of actors at the design and planning stages to ensure that the human aspects of low carbon technologies are considered.

As well as technologies at the local level, there has been great interest in the role that technologies, as part of larger systems and networks of infrastructure can play in the creation of new practices and the continuation of old. Following the purely social theories of practice of Bourdieu (1977) and Giddens (1984), the role of technology in constituting practices has been picked up more recently in attempts to re-materialise social practice theory and conceptualise the impact of objects, equipment, bodies and things as components of practice (Reckwitz 2002; Schatzki 1996; Elizabeth Shove & Pantzar 2005; Urry 2000).

Technologies and infrastructures play a significant part in mediating and co-shaping demand (Van Vliet et al. 2005) and placing such objects and systems at the centre of practices creates a policy landscape that includes a far wider range of human and non-human stakeholders and allows analysis of the way that they can deliberately or inadvertently shape and shift practices over time (Strengers 2010). As it is, technologies and infrastructure represent just one area of practice formation and therefore just one aspect in the persistence or restructuring of practices (K. Gram-Hanssen 2011). The following section examines the role of competence in serving to maintain stability or transform practices over time.

2.4.2 Competence

Shove et al. (2012) define competence in their threefold breakdown of practices as encompassing skill, know-how and techniques. In this way, it includes both explicit or conscious knowledge and 'ways of doing' (such as the skills and knowledge needed to prepare and cook a meal) but also more unconscious or tacit knowledge (such as the social etiquette entailed in having guests over for a party) (Leonard & Sensiper 1998). Knowledge and its implementation into practices is provisional, mediated and socially constructed (Berger & Luckmann 2011; Blackler 1995). For many everyday energy consuming practices, there

are unarticulated, often subconscious ways of doing. Credited for first introducing the concept of tacit knowledge into philosophy, Michael Polanyi (1958) has suggested that the majority of knowledge that goes in to forming practice is tacit. Wenger (1998) breaks the concept of practice related knowledge into two similarly defined areas. His concept of practice is concerned on one hand with the 'language, tools, documents, images, symbols, well defined roles, specified criteria, codified procedures, regulations and contracts that various practices make explicit' and on the other the 'implicit relations, tacit conversations, subtle cues, untold rules of thumb, recognizable intuitions, specific perceptions, well-tuned sensitivities, embodied understandings, underlying assumptions and shared world views' that are undoubtedly present beneath the surface of practices (*Ibid*:47). The household unit is likely to contain an amalgamation of such unsaid conventions and embodied understandings, elements that manifest themselves through practice. These understandings are more than likely learnt through informal processes. Recognising households as dynamic and evolving entities suggests that there are points at which tacit assumptions, understandings and perceptions can change. Policy-making can be guilty of a narrow focus on somewhat abstract environmental knowledge, that is, knowledge that bears little resemblance to people's everyday experiences. However, competencies within the SPT literature is more inclusive in its definition and therefore more useful in understanding the formation and change of practices as it seeks to understand how tacit knowledge travels and may be transmitted from one cohort of practitioners to another (E Shove et al. 2012).

2.4.3 Meanings

The third and final of the three elements relates to the social and symbolic significance of engaging with a practice at any one moment. Social practice theory addresses the shared social meanings that help constitute practice, such as the notions of mobility that are associated with car ownership or notions of freshness connected to daily showering. People do not participate in social practices in identical ways but rather, practices are internally differentiated in many ways on different dimensions (Warde 2005). These are related to the

previous two dimensions of practice, with three co-existing alongside each other. So, for example, the practice of cycling to work will hold different meanings to people based on both the materials available to them (type of bicycle, cycle paths) and also their competence in carrying out the practice. Alongside these the third element, meanings, will be affected by other factors such as social support, competing practices and previous experience for example. Rather than viewing practices as an expression of attitudes and values, practices are instead considered to be bound up in socially shared meanings, expectations and cultural conventions.

In order to make headway in understanding the continuity and change in everyday practices, Shove et al. (2012) acknowledge their radical simplification of certain aspects of social practice formation. I believe that these areas of simplification benefit from being unpacked for the purpose of gaining an understanding around how households come to configure their energy practices over time. First, the social practice literature underplays the relative, situated and emergent nature of attributions of meaning. This is something that is explored in more depth in the following section (2.5). Second, the social practice literature is focussed on those practices around which interpretations and symbolic associations are relatively unchallenged. While this may encompass many energy consuming practices (you could argue that the way individuals shower and launder is relatively similar across the country), there are many energy consumption practices that are undertaken in very different ways precisely because of differing interpretations of meanings (around how much 'stuff' we consume, where we purchase from, how hot our homes 'should' be, for example). A focus on established interpretations of practice therefore discounts many important (and contested) aspects of 'doing' that are required to change if lifestyles are to become low carbon. The social practice literature views meanings as elements that simply 'have' just emerged (possibly over time) and which are bound up in the practices that recruit practitioners. While the simplification allows discussion to progress to the broader diffusion and circulation of practice it is less helpful when trying to understand the 'how' in relation to the association of meaning to practices. Understanding the details of this process will be of most use to policymakers wishing to understand the formation of links and association. I would argue that we need to know more

about the processes by which particular practices come to be bound up with particular sets of 'meanings' and how practitioners come to accept or reject such meanings.

This is even more pertinent when you consider that households are often made up of multiple individuals who all have personal associations with energy consuming practices. In a household context, personal associations can be muddied by the meanings significant 'others' in the household attach to particular practices. Associations at a household level come bound up in many other factors unique to the household. The meanings associated with water conservation will differ greatly between a retired couple in their sixties and a professional couple with two young children. It may be that the older couple have more time to reflect and change their habits (bringing the effort costs down) and additionally, experience an increase in benefits (monetary savings may be better received in a household with less disposable income; energy conservation may come naturally to those with a more frugal upbringing and an increased concern for future generations).

Based on these observations, the thesis will attempt to discover both the meanings that have come to be associated with different energy-related practices but also uncover how (the processes by which) particular practices develop associations with particular sets of 'meanings'.

2.5   Temporal elements of energy practices

The previous section explored the dimensions of material, competence and meaning in relation to individual's energy practices. The following section investigates the temporal aspects of practice and the role of time in configuring the different elements of practice.

Shove et al. (2012) outline four different framings of time in relation to practices. The first framing is of time as a resource for which practices compete. In this representation, time is seen as limited and the competition for it impacts upon the dominance and continuation of some practices and the decline of others (the increase in time devoted to work has left less time for practices of parent-led childcare for example). The second framing is of time as a marker for the

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completion of particular practices. They acknowledge the existence of inscribed temporal injunctions that dictate the rhythm of practices across a day. Individuals subsequently have to weave practices into existing rhythms. Both of these framings have implications for the possible uptake of low carbon practices. With time as a limited resource and with many individuals with limited amounts of time 'free' from prescribed activity, new practices need to find a place within such temporal rhythms or have the ability to displace established practices. The relative, situated and emergent nature of meanings and associations of practice (as discussed in the previous section) will cause the take up of practices to vary across time, or at the individual level, across a lifecycle.

In relation to energy consumption, different energy-related practices will be more or less salient at specific moments in the lifecycle of a practitioner. The time 'phase' (and accompanying opportunities, obligations and outlooks) within which an individual is situated will make different energy behaviours more or less accessible, valuable or viable and therefore make individuals more or less disposed to carrying particular practices. Household transport practices, for example, will vary greatly across the lifecourse of individuals as there are changes in geographical location, access to public transport, car ownership, income, dependant family members and proximity of relatives (to name just a few). Evidence would suggest that at least some individuals going through such life stages seem to reassess forms of mobility, shopping and eating (Bamberg 2006, 2007; Schäfer & Bamberg 2008). A recent focus on household 'phases' has examined whether or not life 'events' - be it the birth of a child, relocation or retirement - can create conditions where individuals or households are more receptive to an adjustment in their behaviour (Grønhøj & Thøgersen 2009; Euehun Lee et al. 2001). Various events during the lifecycle of a household may disrupt and impact upon the way a household operates and influence the dynamics between different individuals. In this way, life events may present themselves as windows of opportunity for making adjustments to social practices, although whether or not change actually occurs will likely be affected by a variety of additional factors. The New Economics Foundation undertook a review for DECC of the evidence for a 'moments of change' hypothesis in 2011 and concluded that a promising amount of evidence suggested that significant

life events provide opportunities for breaking existing habits. However, they found empirical evidence hard to come by and most of the anecdotal evidence, confined to transport behaviour (NEF 2011).

The third temporal framing relates to the ebb and flow of practices and the acknowledgement that practices are rarely continuous. Rather, they are active at times and at other times dormant. From this conceptualisation, it is interesting to question how dormant practices continue to exist and be revived at different points in both space and time. The final dimension reverses the dynamic between practice and time and frames practices as the providers of time in that time is born of the practice itself. Taking a child to a weekly dance class, for example, creates a specific slot of time between the start and the end of the activity. In this example, time is known and experienced through the performance of a particular practice.

Based on these exploratory investigations, the thesis will explore the temporal nature of energy-related practices and in particular, the way in which practices are adopted by practitioners at particular phases of life. Alongside this, the thesis study will explore how, at different socio-historical phases in time, materials, meanings and competence can all interact to produce various shared ways of undertaking different energy-related practices.

2.6   Summary and research questions

If demand reduction is to play a key role in contributing to the cuts in emissions demanded over the coming decades, there needs to be a substantial shift in the way energy is consumed on a daily basis within the lives of individuals living in the UK. In response to a comprehensive review of the literature, this thesis proposes that social practice theory has allowed studies of human behaviour to develop beyond the cognitive reasoning of individuals to incorporate both agency and structure into understandings of practices, allowing for a valuable appreciation of how practices both endure and transform over time. The central argument from the current chapter is that social practice theory, applied at the meso-level of households, allows an enquiry into energy practices that facilitates the exposure of often-hidden elements of everyday energy practices.

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The chapter argues that rather than viewing meanings as elements that have simply emerged, more needs to be known around the processes by which particular practices come to be bound up with particular sets of meanings. Not only this, there is also insufficient attention paid within the pro-environmental behaviour literature to the importance of social dynamics in shaping energy practices and the impact a 'social interactional' dimension can have upon the formation of practices. The final viewpoint to come from the chapter was that time plays an important role in the configuration between different elements of practice and in order to understand its role, an investigation is needed into the relationship between time, the different elements of practice and the practitioners who carry particular practices at particular times. These arguments have led to an overarching research question that underpins the thesis.

- How do households, as social units, configure their energy practices over time and in what way can policy utilise such understandings?

A further three, more specific, research questions have emerged, which will shape the rest of the thesis.

1. What meanings, benefits and associations are bound up in the everyday consumption of energy?
2. Do energy practices have a temporal dimension to them and if so, how does this impact upon their performance?
3. How do the social systems in which lifestyles[5] have become embedded and the social processes, interactions and arrangements within

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[5] A lifestyle, from here on in, is considered to refer to the patterns of practical and symbolic behaviour. As well as providing for basic needs and requirements, a lifestyle allows one to express him or herself through the meaningful choice

households shape and reinforce patterns of energy consuming practices?

of items or patterns of behaviour and as such, lifestyles occur at the intersection of individual agency and social structure (Edgar & Sedgwick 1999).

3 Methodology

A review of the literature has revealed gaps in our understanding of how it is that the construction of lifestyles and the energy practices bound up in them are implicated by the interactions that take place in social environments and across timescales. This thesis intends to increase understanding around these dimensions of practice, and this chapter describes and provides rationale for the methodology employed to these ends.

The chapter will be set out as follows. Initially, social constructivism as an overarching philosophical assumption will be explained, followed by an introduction to phenomenology, the theoretical basis of the methodology employed in the empirical work reported in the thesis. The third section will describe Interpretive Phenomenological Analysis (IPA) and explain the rationale behind adopting it as a research methodology and the way in which it enables the overarching objective of the study to be fulfilled.

3.1 Philosophical assumptions

Commonly referred to as a way of understanding and explaining 'how we know what we know', the epistemology, or theory of knowledge that underpins this study, will be intrinsically embedded within both the theoretical perspective and the methods used for data collection. Under a positivist paradigm, 'an apprehendable reality is assumed to exist, driven by immutable natural laws and mechanisms' (Guba & Lincoln 1994:204). Research within this positivist stance is based upon quantification, prediction and verification and for a long time has been heralded as the scientific method most reliable in forging an understanding of how both human and physical events occur. The dominance of positivist research remains strong in both the natural and social sciences and continues to be heralded as a reliable paradigm in which to base scientific research. Within the social sciences, the dominance of positivism has called for researchers to reduce the subjective nature of human experience into quantifiable, measurable constructs. A typical exploration into environmental behaviour under a positivist epistemology for example, would involve the implementation of a hypothesis followed by a testing of variables thought to

have a causal influence on behaviour. While this approach is useful for revealing the strength (or lack thereof) of the relationship between different variables in relation to environmental behaviour, it is less effective in understanding the nature of phenomena.

A constructivist philosophy, with its emphasis on the generation of knowledge and meaning from the interplay between an individual's experiences and ideas, may be better suited to exploring the experience of individuals with regard to their consumption of energy. The last couple of decades have seen the constructivist philosophy gain in popularity within the social sciences, developing through the amalgamation of various elements from psychology, education and sociology. In its simplest form, constructivism implies that there is no universal truth imprinted on people, rather that individuals construct their own knowledge, through cultural, social and historical norms. Constructivism highlights the processes that exist between readily available information and an individual's own knowledge. Rather than viewing knowledge as objective and independent of humans, constructivism highlights the key element of interpretation that takes place at a personal level, influenced by an individual's historical and cultural norms. In taking a *social* constructivist worldview, the emphasis is on the dynamic and on-going process in which specific groups or communities create their own social reality and routine. Those engaging in qualitative research using an epistemology grounded in social constructivism will seek an understanding of the world and the processes within it rather than an explanation of the 'true' state of affairs. Constructivist researchers will often study the particular contexts in which individuals live or work in order to comprehend the cultural, historical and social influences upon them.

A constructivist philosophy has the potential to challenge our normative assumptions around determinants of environmental behaviour. In an attempt to move beyond the hurdle that has been faced in reconciling people's environmental values, attitudes and beliefs with their behaviour, the constructivist paradigm appears sympathetic. It provides a space in which recognition is given to the seemingly irrational ways in which individuals behave, recognising the 'multiple, varied and subjective meanings of their experiences' (Creswell 2009:7).

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3.2   A phenomenological approach to energy practices

Phenomenology is a stream of philosophy located under a constructivist umbrella that has its origins in the work of Husserl (1970) and later Heidegger (1962). What some would describe as pure phenomenological exploration can be traced back to the beginning of the 20th century and the original founder of the philosophical movement, Edmund Husserl. Husserl played a fundamental role in the shaping of European philosophy and considered phenomenology an essential tool in exploring philosophical questions about the essence of being and the experience of everyday life (Husserl 1982). The focus of this school of phenomenology lies with individual's perceptions of their experiences, based on the notion that much human behaviour is driven by what people perceive to be real. In trying to uncover the essential components of lived experience, Husserl advocated a form of 'bracketing out' of all personal fixed ideas and expert knowledge in order to negate the influence of the researcher, seeking to describe the topic free of hypotheses or preconceptions (Husserl 1970) and create what can be described as a 'disciplined naïveté, bridled dwelling or disinterested attentiveness (Finlay 2008:12). According to Husserl, this approach would ultimately lead you to the true essence of an experience. The aim then would be to recognise the attributes that were common from across participants and draw from these some generalisations.

Hermeneutic phenomenology also pursues the lived realities of experiences, the primary difference being the way in which exploration develops. One of the foremost representatives of hermeneutic phenomenology was Martin Heidegger (1889 – 1976), a student of Husserl, who aspired to go beyond the essence of experience to find the meanings embedded within practices. Rather than an exclusive focus on what people know, Heidegger investigated the situated meaning of experiences; cultural, historical and social (Solomon 1987). Heidegger coined the term 'life-world' to represent the way in which an individual's reality is influenced by the social, cultural and political environment in which they live. It is an approach that removes emphasis from the 'pure content of human subjectivity' and places value in what individuals' narratives imply about their experiences of the everyday (Lopez & Willis 2004:729).

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With phenomenology's focus on the experiences of everyday life, it has been a popular approach within health and nursing studies. Adopting phenomenology within these fields has allowed practitioners to gain insights into the experiences through the eyes of a patient (*Ibid*) with the exceptional and the mundane aspects of everyday life treated with the same levels of significance. The aim of adopting a phenomenological approach to energy consumption is to gain an understanding of the way individuals use energy, relating to how energy practices are experienced in consciousness and how people construct meaning out of their practices. As a strategy for research, the emphasis will be placed on personal knowledge and subjectivity and the importance of personal perspectives and interpretation. This focus is deemed to highlight the content and nature of lived experiences (Creswell 2007). The advantage of a phenomenological approach within the context of environmental behaviour lies in its pursuit of lived contextual realities, starting from the descriptions of individual's subjective experiences and eschewing any form of measurement or explanatory analysis. So rather than assuming or attempting to identify a link between a variable (environmental concern for example) and the energy practices of an individual, phenomenology promotes an understanding of the experience as it is lived by the participant.

In contrast to positivism, phenomenology places emphasis on subjectivity, description and interpretation and generally deals with people's meanings, beliefs and/or emotions (Denscombe 1998). Phenomenology adequately provides an effective strategy for understanding the personal and social experiences of individuals in relation to their energy use. It allows focus to shift from the causes, per se, of energy demand and attends to an understanding of how energy use is experienced, first hand, by individuals. In terms of informing the overarching question of how households configure their energy use, a phenomenological approach considers energy use from the point of view of the individual; how they interpret their energy practices and how social dimensions are both impacted by and impact on this relationship. The following section describes the phenomenological research method adopted for the thesis, Interpretative Phenomenological Analysis (IPA), and explains why it provides an appropriate methodological and theoretical orientation for addressing the central research question of the thesis.

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3.3 Interpretive Phenomenological Analysis (IPA)

Interpretive Phenomenological Analysis, or IPA, has a relatively brief history as a distinctive research method. The advent of IPA came on the back of a call for an approach within psychology that allowed for both a qualitative and experiential dimension (Jonathan A. Smith 1996). Pure phenomenology, hermeneutics and a commitment to personal accounts of experience all shape the theoretical basis of IPA and its distinct research methodology. IPA also draws on symbolic interactionism (Denzin 1995) and ideas around the importance of personal and social worlds in creating meaning for individuals. Based on these underpinnings, IPA has become a popular tool within the phenomenological tradition for exploring lived experience and the meanings which people attribute to their experiences.

IPA, again, has been particularly pertinent in the field of health psychology, in considering the constructed nature of illness (Brocki & Wearden 2006). While this study is firmly located outside of the field of health, I would argue that IPA has much to offer the field of pro-environmental behaviour and energy use studies, fostering an interest in the way in which individuals make sense of and interpret their day-to-day practices and the meanings they assign to them. Within the literature review, it was argued that our relationship with, and use of, energy is strongly social. The way we think of and consume energy is a product of the meanings we prescribe it, which is influenced by those around us and our previous experiences. If this is the case, then a method of data collection that allows us to explore subjective experiences and helps us to describe and understand the participants' account of the processes by which they make sense of their practices presents a new and potentially valuable interpretation of people and their behaviour.

The adoption of Social Practice Theory as a theoretical framework within the thesis denoted some conviction in the power of studying practices over mental processes in order to understand the energy behaviours of individuals. However, IPAs focus on the personal world of individual's calls for a representation of cognition. Rather than focusing on a link between cognitions around a subject (pro-environmental behaviour for example) and behaviour in that regard however, IPA instead explores the nature of cognitions, where they

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come from and how they are influenced, in order to develop a picture of an experience for an individual. IPA links up the cognitive, linguistic, affective and physical aspects of an individual and assumes a chain of connection between people's talk and their thinking and emotional state (J. Smith & Osborn 2008). So while there is a difference between IPA research and quantitative methods common to psychological approaches to pro-environmental behaviour, there is clearly an aspect of theoretical convergence between the two that can facilitate a valuable discussion around the complex problems of sustainability.

There are two key dimensions to IPA, rich description and interpretation. The first stage of the process involves gathering rich descriptions of lived experience, often within an interview scenario. The interview is most often inductive and exploratory, exploring not what reality is but what it is perceived to be. While this initial rich description is the first stage of the methodology, Larkin et al. (2006) highlight the common misconception of IPA that it is simply descriptive. In fact, first order analysis is actually only the first step of IPA, seeking to then take findings to a theoretical or conceptual level. IPA considers an understanding of the meanings individuals ascribe to their practices as attainable only through the addition of an interpretive process. This interpretive element of IPA links its phenomenological base with hermeneutics, with the intention to produce 'rich experiential description' that confronts phenomena in ways which 'participants might be unwilling or unable to do themselves' (Eatough & Smith 2008:189). Initially the participant is asked to make sense of phenomena and following this, the researcher is collecting the experiences of participants, only to become the primary analytical instrument, interpreting and making sense of data through his or her own experience values and knowledge. This interpretive aspect of IPA leads to what is known as the double hermeneutic (Jonathan A Smith 2004). The following sections will move on to explain the practical elements of undertaking IPA within this study, the methods of which are grounded in the theoretical underpinnings set out above.

3.4   Undertaking IPA

There is no single, definitive way to do IPA but approaches have to be able to manage varied real-life accounts of individuals' experiences. As a result, the

data collection process is required to be flexible and accommodating to the different experiences of individuals and the meanings they attach to them. In-depth interviews were considered to be the most appropriate data collection process for capturing an understanding of the meanings and social interactions of energy practices, and the changes in these over time. The following section will expand on this data collection process, firstly exploring the process of gathering participants for interview followed by an explanation of the process of interviewing and comment on the issue of researcher positionality.

3.4.1 Sampling

Within IPA, participants are examined in a thorough, case-by-case manner. As explained above, the aim in doing so is to try to gain an insight into a unique set of individual experiences rather than find the links between them. For this reason, any form of random or representative sampling (often used in order to be able to generalise and apply results to a population) is not desirable. Instead, sampling within IPA research is purposive, with the aim of gathering a group of interested and participants who share a similar experience of the researched phenomena. Since the topic under investigation (the consumption of energy) is frequently engaged with by the majority of the population, the participants were not restrictively defined and the boundaries of the sample were wide. The only stipulation for the participants, in order to retain relevance to the research question, was that they lived in a multi-occupancy household. In light of this, it was decided that multi-person interviews would be desirable, where possible, in order to help uncover the social interactional dimensions of household behaviour that had the potential to be lost in one-to-one interviews. The household is more than a vehicle for energy use but many things at once; 'a social group, a network of tasks, roles, responsibilities and relationships…a pattern of social, economic and ritual activity and a system of social relations' (Souvatzi 2008:1). With energy use tied up among these patterns and functions, which are often socially constructed, it seemed only sensible to make, where possible, the understanding of them a social process by undertaking multi-person interviews.

The interviews were all undertaken between August and December 2011. From a practical viewpoint, it was not easy to arrange joint interviews. Both persuading participants that more than one individual would be beneficial to the enquiry and finding a mutually convenient time was a difficult aspect of the organisation of the interviews. Ultimately, 48 individuals were interviewed for the study involving 28 households. The ages of household occupants ranged from approximately 30 to 60+ years. Of the 28 households, nine fell into the 30-40 years category, eight into the 40-50, eight into the 50-60, with three falling into the 60+ grouping. Prior to the interviews, 15 events, including community meetings and steering group gatherings, were attended in order to incorporate myself within the two communities and begin the process of gaining access to the individuals living within them. Eight of the 28 interviews took the form of one-on-one and the remaining 20 interviews included two participants, which included the initial contact and most often a partner (there was one instance of a daughter present). This interview style sought to help uncover the social structures that prop up different roles in specific contexts. Roles relating to energy consumption may not always be obvious to those playing them and it was hoped that this interview technique could highlight social processes that may be overlooked or more difficult to uncover with a one-on-one interview.

Having to produce a single collaborative account of experiences involved negotiation and mediation between couples and allowed the interviewer to side-step the version of reality provided by a household spokesperson and explore the production of household relationships and shared realities. The interview became a forum through which individual members could challenge and discuss previously uncontested ways of behaving, revealing a more nuanced understanding of how the context in which practices take place can be so influential in restricting or fostering new ways of behaving. It has been suggested that interviewing more than one household member can increase the complexity and sophistication of the accounts; add depth to the research by revealing elements of negotiations and conflict; give social and cultural context to accounts of practices; and enable the dynamics of relationships within households to be explored (Milburn 1995 p. 36). There was the possibility that this household interview approach risked introducing power imbalances during the data collection process, something advised against within group interview

research such as focus groups (Krueger & Casey 2000). However, the insights from a single participant interview could be seen as being too one-dimensional, originating as they do from a single contact person in each household. Considering that the research was focused on the social dynamics of household energy use, it was decided that the existence of evident power dynamics within the interviews could shed interesting insights into the role of power within the home and the implications for the consumption of energy within it.

After deciding upon a suitable tool for data collection, it was clear that a strategy would be necessary in order to acquire a set of households willing to participate in the study. There were two energy projects running locally to the University campus in Cornwall, both of which had recently received funding to assist in the organisation and start-up of the projects. The first project was the Illogan Green Ripple, a scheme aimed at engaging a whole community with the benefits of domestic renewable energy installations. The Ward at which the project was aimed represents a Lower Layer Super Output Area[6], with a population of around 1390 across 612 dwellings. Contact was made with the local authority and the local organising committee running the project and nine months was spent engaging in meetings and events relating to the project. The start date of

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[6] Following the 2001 census, the Office for National Statistics (ONS) developed a set of stable hierarchical geographical building blocks to facilitate the collection and publication of Neighbourhood Statistics. At the midpoint of the scales are the Middle Layer Super Output Areas and Lower Layer Super Output Areas (MLSOAs and LLSOAs) formed by an average population of 7200 and 1500 respectively . Within the English MLSOAs are 32,482 LLSOAs containing a minimum of 1000 people.

the project was stalled at various stages due to administrative delays but this time provided the opportunity to contact with various members of the local community and to pilot informal discussion in the style that would later be adopted for the interviews. Notes of conversations were kept and ideas related to carrying out in-depth interviews with the community were made. An example of the worth of these conversations became clear when responses from participants started to follow a particular pattern. It became apparent that a direct emphasis on energy, when talking about practices, tended to lead to a narrow report of experiences, often focussed only on cost or the environment. With the financial and environmental implications of energy use regularly highlighted in the media, it was understandable that conversation would take this direction. While this was interesting, it did not help to uncover the experiences and interpretations of practices from the perspective of individual. As a result of observations such as this, the interview style was refined accordingly, with a new focus on the practices of the everyday.

The villages of Ladock and nearby Grampound Road, in the west of Cornwall, UK, approximately six miles north-east of Truro, were the other communities from which participants were drawn. At the time of the interviews, a joint venture between the villages had resulted in a successful bid to the UK Government's Low Carbon Community Challenge, a project designed to aid a transition to lower carbon living. The parish of Ladock has a population of around 1500 which incorporates Grampound Road, on the border of Ladock and nearby Probus. The energy project in Ladock and Grampound Road was established prior to my collaboration with the project team and a keen group of interested residents had formed a successful steering committee. However, both projects were in the process of using project funds to install a range of renewable energy and energy saving technologies. More detailed descriptions of both energy projects (Ladock and Grampound Road and Illogan) can be found in Appendix 1.

There was the opportunity to attend a number of engagements in both locations, including transition meetings, launch events, weekly markets, consultation meetings and engagement activities. This raised the profile of the researcher within both communities and initiated the process of gaining access

to households for interviews. Within Illogan, households were recruited through a process of door knocking, where individuals were given a brief overview of the project and at the same time asked whether or not they would be willing to discuss their energy use with a project team member. In Ladock and Grampound Road the process of recruitment was slightly different in that, with an established project, there was already a proven network of households who were willing to take part different aspects of the energy project. In this instance, key individuals in the community were able to provide me with a list of contacts that could be contacted for the opportunity to take part in an interview. By making myself known in both communities and attending numerous events relating to the energy initiatives, there were many instances of informal conversations with programme organisers and local residents which were both informative on their own and beneficial for arranging follow-up meetings.

3.4.2 Semi-structured interviews

Within IPA-led research, semi-structured interviews are the most commonly used of the data collection tools and have been referred to as the exemplary method for IPA (J. Smith & Osborn 2008). Their popularity within IPA relates to their ability to allow the lived experiences of the individual to come to the fore. The flexibility of semi-structured interviews affords the researcher the ability to respond and adapt to different interview scenarios. A researcher adapting IPA is likely to eschew asking set questions in a particular order and instead utilise the freedom within interviews to follow the participant's attention and explore interesting areas as they arise within interviews. Avoiding hypotheses and the need to gain answers to defined questions, IPA regards the participant as the experiential expert (*Ibid*) who broadly directs the route of the conversation. In this way, the method facilitates the participants' ability to tell their story in their own words, a central premise of IPA (Smith et al. 1997).

The purpose of the interviews was to gather rich data on the experience of consuming energy through the practices of the everyday. Adopting a flexible and participant-led discussion facilitated a collective and deliberative exchange, allowing for a more comprehensive understanding of a range of social processes, interactions and arrangements within households and the meanings

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bound up in energy practices. In those interviews that involved two individuals there would often be occasions where the partner would interject, challenging or modifying the given account, causing the topic to be expanded upon or fresh themes for discussion to arise. This often resulted in reduced requirement for interviewer intervention and allowed a more 'true to life' account of experiences. Undertaking a proportion of multi-person interviews does not infer superiority to any other form of data collection under IPA. However, it did highlight the multiple elements that can influence particular relationships within interviews and ultimately affect the telling of particular stories. In both joint and single person interviews, situations occurred where participants were more disinclined to elaborate on the details of their practices. This may have been connected to their perception of the value in revealing such details or perhaps related to issues of privacy. In these situations, more time was spent putting the participant at ease before steering the conversation towards their personal everyday experiences. In hindsight, these more abstract 'preparatory' conversations covering a range of opinions and perceptions often ended up being very insightful and relevant to the research questions.

The format of the interviews was designed to best provide a rich description of the experience of the individual(s) and based on the insights gained from informal conversations with individuals in the weeks and months leading up to the interviews. A log of the participant interviews can be found in the Appendices. Interviews were most often undertaken at the participants' home, although six interviews took place in communal spaces, such as the village hall. The length of interviews ranged from 20 to 90 minutes with key areas of discussion related to waste, water, food, transport, heating and leisure practices. True to the phenomenological tradition, conversations were predominantly led by participants. A very broad list of practice-related questions was taken into the interviews as a prompt, where necessary, for obtaining the participants 'feelings beliefs and convictions about the theme in question' (Welman & Kruger 1999:196). Conversation was allowed to flow and change course as the participant saw fit, with the interviewer querying any areas that were of specific interest to the research questions. Adopting IPA allowed for the interconnected, complex and at times contradictory nature of individuals interactions with energy consumption to surface. Under IPA, the participants are

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considered to be the expert and so discussions began free of preconceptions, hypotheses and existing theories. In doing so, space was created for new understandings of the ways in which energy use practices are constituted, shaped, maintained and changed over time.

While the majority of the analysis takes place following the conclusion of the interview, there is a role for analysis in the collection stage, though active listening, prompting and encouraging further disclosure on selected topics (Brocki & Wearden 2006). In IPA, the level at which one explores and probes down a particular avenue is left to the discretion of the researcher (J. Smith & Osborn 2008). An interviewer must maintain a commitment to the participants story but should recognise the potential interest of following up on novel avenues of inquiry. The depth and length of some interviews demanded almost immediate reflection in order to capture initial thoughts, impressions and interpretations. This would often take place in the car before leaving the community. It was useful to return to these ideas when analysing the transcriptions, providing an 'of-the-moment' insight into previous feelings around the individuals and their personal worlds.

3.4.3 Researcher Positionality

The relationship between the researcher and the researched differs between positivist and constructivist accounts of the world. Positivism finds all knowledge based on perceptual experience, and rejects the existence of introspective and intuitive knowledge. While a positivist approach aims towards objective, impartial accounts of a subject, a constructivist approach seeks to develop meaningful and beneficial connections between the two. IPA, under an umbrella of constructivism, places a large degree of emphasis on interpretation and recognises that the researchers own conceptions play an important part in the interpretive process. The double hermeneutic that exists within IPA means that accounts of experience are inevitably influenced by the identities of both the researcher and the researched. There is no direct conduit to the experience of the interviewee; the best that can be achieved is an explicit awareness of self in the data collection process. Reflexivity on the part of the researcher is seen to offer transparency to the methodological process and enhance the credibility of

the interpretive stage of analysis by going some way to negating the effect of bias and assumption. Furthermore, the Interpretive Phenomenological approach sees the idiosyncrasies of the individual researcher as an asset rather than a liability where 'different persons have different styles and sensibilities which, in turn, lead to different perspectives and sightings of the same phenomena' (Seamon 1983:122). This isn't to say that researcher positionality is never a problem within IPA. Within studies adopting this methodological approach it is seen as critically important to have data collected by someone who is not only a competent researcher but also an interested and subjective actor (Plummer 1983; Stanley & Wise 1993). The researcher is challenged to critically and reflexively evaluate how any pre-understandings inform the research (Finlay 2008), something that may only be possible once the interpretation is underway. Remaining mindful of one's personal context and experience throughout the data collection and analytic process and the potential implications of this on research outcomes is therefore vital. The challenge is to remain reflexive without reaching a point at which it overrides the value of the research questions. In light of this, the analytical process described below attempts to promote and encourage the reader towards an awareness of positionality and the fragile nature of any understanding (Bennett 2000).

3.5   Analysis

Of all the interviews, 24 were recorded and transcribed verbatim. For the remaining four interviews, individuals requested not to be taped prior to interview. Notes were taken during and immediately after the discussion in these instances. Once the interviews were transcribed, processes typical of qualitative analysis were utilised to sort the data. In line with IPA, this involved taking an idiographic and inductive approach, at first considering cases individually, allowing themes and ideas to develop naturally and progressing to a comparison among cases, recognising commonalities and differences across the data set. This process is described in more detail in the sections below.

3.5.1   Idiographic analysis

IPA studies focus on achieving a thorough understanding of the life-world of the participant, often through a small amount of in-depth, detailed interviews as an idiographic mode of inquiry insofar as the focus is on specific individual and their experience of events. This sets IPA apart from the traditional nomothetic approach often favoured within psychology (Denzin 1995), where quantitative and experimental methodologies are adopted and analysis is at the group or population level.

One option for organising ideas at the analytic stage would have been through the use of computer software such as NVivo. With the research questions focussed on social interactions and the nuanced details of the organisation and meanings of the everyday, the risk was that important but seemingly insignificant details may have been missed by employing such a programme. For this reason, it was decided that manual coding would be more appropriate and more valuable to the analytic process. Moreover, much useful analytic activity can occur during the process of coding data. Upon a first read of a transcript, a process of cumulative coding allowed initially significant comments to be highlighted within the text. For each interview, notes were made in the transcript margins and potential themes headed each transcript once it had been read through. While connections and preliminary interpretations sometimes happened at this stage, it was generally used as an initial attempt at identifying insights from each interview. A fresh reading of each transcript ensured that insights were not missed nor meanings misinterpreted. This then allowed key themes to be verified for each interview and captured on post-it notes, often accompanied by sentences or words that supported the theme in question. This process would allow themes to be supported from the text; indeed Osborn and Smith (1998) highlight the importance of presenting evidence in IPA research, attesting to the validity of the study. Once on post-it notes the themes were analysed through a process of theoretical ordering. Sense was made of the connections between themes with an attempt to find some superordinate concepts. This process was repeated for each of the transcripts, with an aim to 'respect convergences and divergences in the data-recognizing ways in which accounts from participant are similar but also different' (Smith & Osborn 2008:73). This was an iterative process, returning to

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past interviews in order to re-evaluate them in light of any new themes that had occurred in subsequent transcript analysis.

After this process had taken place for each of the interviews, the analysis moved on to explore the possibility of any higher-level intersections between superordinate concepts. Within IPA this is considered to be a form of integrative coding, where patterns of meaning are generated across a set of transcripts. It allows a researcher to look for connections, contradictions and patterns. This level of coding is not always undertaken within IPA studies but doing so allows the author to engage in abstract interpretation and draw on existing theoretical concepts to develop theoretical and conceptual coherence in the material. After further cross-referencing between interview transcripts, resultant themes, ideas and concepts were supported by verbatim quotations from the participants. Referring back to the interview data all the while ensured that this high level analysis was still grounded in the words of participants and in the context of the original text.

3.5.2 Interpreting the data

A successful analysis of the interviews should lead to a rich description of the personal and social world of the participants, which should aim to be as true to the experience of the individual as possible. What it seeks to avoid is moving on to any form of explanatory evaluation. Rather than try to explain and hypothesise around the cause of particular behaviours in general, IPA allows the individuality of households to be highlighted. This is not to say that IPA is opposed to general claims when the sample size and results call for such, rather the commitment is to provide in-depth analysis of individual cases. Moreover, under IPA, complexities and contradictions can be stressed for their impact on the ability for practices to become established or reconfigured. By their nature, and as explained above, interviews are never going to be able to provide a first-person account of experiences; reality is co-constructed between the interviewee and researcher. The objective at this stage was to produce a 'coherent, third-person and psychologically informed description' (Larkin et al. 2006:104) as close as possible to the experience of the participant.

In order to be able to conceptualise findings, the second stage of the analytic process required a critical and speculative consideration of the data. In reality, no such division exists in the analytic process, and sustained engagement and interpretation was required throughout (Smith & Osborn 2008). However, this integral part of the analysis allowed me to elucidate the implications of the descriptions that had been gathered on the meanings and social interactions around energy use. Hermeneutics, or the theory of interpretation, is the central analytical element of IPA and this stage of analysis allowed descriptions to be situated within a wider, theoretical context. Consideration was given to 'what it means' for interviewees to have made claims, expressed their views and interpreted experiences in the way that they did. In fact, a main purpose of *Interpretive* Phenomenological Analysis is to give consent to the researcher to use considerable interpretive range to construct a theoretical framework based upon the participants own terminology and conceptualisations (Jonathan A Smith 2004). Recognising that social life is constructed by those who participate in it, it became clear that experiences were unique to individuals and households and therefore multiple realities were able to exist around the same event. Having said this, a phenomenological viewpoint does not suggest that there are as many social realities as there are individuals, but necessarily they are shared between groups, cultures and societies (Denscombe 1998). It is this acknowledgement that promotes the identification of convergences and divergences within the data and allows for a rich and varied presentation of life-worlds.

3.6   Validity and quality in IPA

While the validity of qualitative research is often measured in terms of the ability to generalise and apply resultant themes to broader populations, IPA makes no attempt to achieve a representative sample or provide replicable conclusions. It is important to emphasise that the sample interviewed for this thesis have qualities specific to the personal, social and geographical situations in which they were interviewed. Cornwall, for example, and indeed the UK more generally, has specific traits with regard to energy supply and demand that will not be seen elsewhere and while this makes for interesting data, it will be

problematic for those wishing to transfer results to a larger, or markedly different, population.

To re-emphasise, the aim of the project was to provide a rich description of experience from which it would be possible to review and reassess the potential within current and future policy-making around energy demand reduction. In light of this, I adopt the following four dimensions put forward by Yardley (2011) for assessing the validity and quality of the research within this thesis. As Yardley emphasises, validity criteria should serve to highlight quality research rather than act as a strict checklist that restricts freedom and flexibility. This attitude was taken throughout the research process. Sensitivity to context is the first dimension that Yardley (2011) proposes as critical within IPA research. For this reason, participants and their personal contexts were treated with complete understanding. As a researcher, it was important to remain sensitive to different views, experiences and interpretations of personal behaviours. With social desirability having the potential to influence self-reported behaviour, an open-minded and tactful approach was of benefit in order to lessen the likelihood inaccurate re-counting of experiences. Commitment and rigour is the second critical aspect of IPA research, visible when researchers immerse themselves in a topic and sustain a prolonged level of engagement with ideas. By remaining true to the research questions and persevering through glitches and obstacles in the research it has been possible to reach comprehensive research outcomes that significantly add to the literature on pro-environmental behaviour and energy use. The third criterion relates to transparency and coherence and, in effect, the level of breadth and depth of the project contained within this thesis. The main chapters of the thesis aim to present each step of the research process in a logical and comprehensible manner while at the same time providing a clear and coherent argument with a strong degree of consistency between the research questions, philosophical perspective, method of investigation and analytic process. Finally, Yardley (2011) argues that the real validity of research lies in whether it informs the reader of something interesting, important or useful. However, these qualities are largely subjective and a product of the objectives of the research and community for whom the findings were intended. In light of this, attempts were made to stay abreast of the research community throughout the period of time over which this study was

undertaken, as well as to remain focused on the policy relevance of any findings throughout.

3.7 Ethical considerations

The nature of the methodological process required consideration to be given to the ethical issues of data collection. In particular these related to issues of consent and anonymity. From the introductory meetings with members of each energy project, this research and the related interest in becoming involved with the projects was made clear. Equally, when meeting potential interviewees, the background and a brief synopsis of the project were given, making every effort to inform individuals in the communities that participation was voluntary and whether or not they were interviewed had no bearing upon their involvement in the energy project as a whole. Consistent with the ethical guidelines provided by the University of Exeter's College of Life and Environmental Science (CLES) informed consent was requested from each individual, ensuring that individuals knew the exact nature of the research. When recruiting participants on the doorstep, the project was discussed and letters were distributed explaining methods of participation and contact details for further information on all aspects of the study. The other key ethical issue to address was anonymity. Although the interviews were not intending to cover sensitive issues, it was explained that responses would not be linked to individuals own names nor details that would associate them with any of the quotes used. Participants were asked to sign a consent form (see Appendix Two) allowing the use of the interview transcripts for the thesis and publications that may arise from it.

3.8 Conclusions

This chapter has summarised the methodology, data collection and analysis process adopting in exploring the questions underpinning this thesis. Phenomenology has been used to guide the methodological process, which it is argued, is appropriate for investigating the lived reality of energy consumption practices. The next section of the chapter presented Interpretive Phenomenological Analysis as the research strategy, and as a means of

gaining an in-depth and comprehensive understanding of how individuals experience and prescribe meaning to their energy use. It was argued that IPA has a great deal to offer studies into household energy consumption, providing the opportunity for deep exploration into how exactly households use energy, how they engage with, process and act on conflicting elements of their lifestyle and how they interpret their behaviour. The chapter then went on to explain the methods of data collection including details on the sampling and interviewing processes. The analysis procedure was then expanded upon, followed by a consideration of the issues of validity and ethics within the study. The following three chapters set out the results and analysis to come from the data collection process.

4 Energy-related practices and their 'value'

The methodological process described in detail in the previous chapter aimed to elicit information regarding the meanings and associations of energy practices, the social dynamics that helped to form them and the impact of circumstantial changes over time on particular energy practices. With 'meanings' represented as a key element of understanding stability and change in practices over time (E Shove et al. 2012), the following chapter develops this component of social practice theory in order to aid understanding around how it is that particular practices come to hold intrinsic value and meaning that goes beyond their utilitarian attributes. In particular, this chapter addresses the first of the three research questions proposed at the end of the literature review (*What meanings, beliefs and associations are bound up in the everyday consumption of energy?*) and aims to examine the processes by which particular practices come to be bound up with particular sets of meanings. It is expected that an understanding of this will shed light on how it is that some energy-related practices are easily adopted and prevail over time, while some are persistently discarded or exist temporarily in the daily lives of individuals.

To begin, the chapter explores the notion of (nonmonetary) costs and benefits associated with low carbon practices using examples of connectedness to nature, time, pleasure and notions of quality, comfort and convenience.

4.1 The stories and meanings of energy use

Many aspects of human behaviour have been understood and modelled by using standard economic theory, as explored within the literature review (section 2.2.1). Energy, and its use as a consumable good, is very often analysed through a lens of behavioural economic theories. Of interest to the results that came from the current interviews is a particular behavioural economic theory developed by Diekmann and Preisendorfer (1992). The low-cost hypothesis puts forward the idea that environmental behaviours are more likely to be aligned with environmental attitudes where the costs for individuals are low rather than where the costs are high.
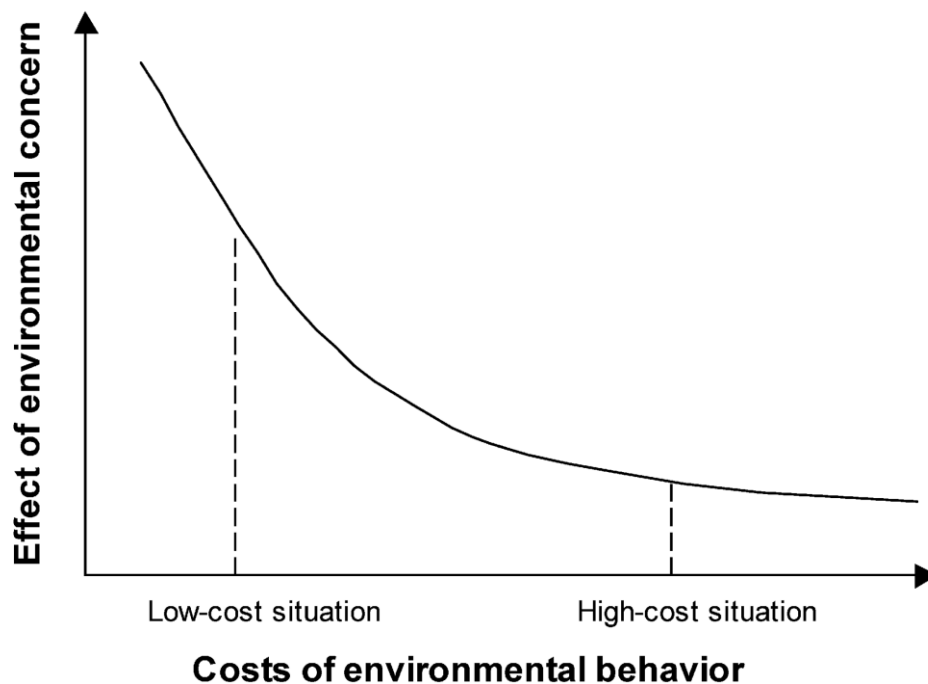
Figure 1: The low cost hypothesis

Source: *ibid*

The costs in Diekmann and Preisendorfer's graph are implied in the broadest sense, so are not just monetary but also capture costs such as time and effort. Their overall conclusion is that environmental attitudes are more likely to translate into environmental behaviours where it costs little to enact the behaviour in question. While Diekmann and Preisendorfer focus on the costs of environmental behaviour, the interviews revealed the importance of the personal return to individuals. The environmental psychology literature and policymakers have for a long time spoken of 'barriers' and 'motivators' for environmental behaviour (DEFRA 2008; McKenzie-Mohr & Schultz 2014) but there is a distinction that needs to be made between the classification of 'motivators' that commonly exists within much literature and the personal return that is investigated within this chapter. In trying to motivate individuals, policymakers tend to focus on providing external rewards. These may, for example, be financial (avoiding a charge) or based on social gratification (being seen to have the lowest energy use on a street). The following chapter argues that there is a lack of attention paid to the personal return (or internal gratification) that can be gained from undertaking particular practices. Data from

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the interviews revealed that certain low carbon practices did require effort, time or monetary cost but at the same time gave a high personal return on this investment (such as internal pleasure, benefits to health and family payback). Where there is perceived to be a high personal return for an individual from undertaking a pro-environmental practice, then it may be possible that this overrides the costs perceived in undertaking the practice (such as costs relating to information requirements, equipment needs and time demands). So the practice of cycling to work instead of driving, for an individual with average levels of environmental concern, may be seen as high cost as it can require more time, organisation, motivation and workplace support than driving a car to work. The participants spoken to that cycled to work or had done previously all reported high levels of personal return or benefit from the activity, with health, financial savings and mental well-being all cited as positives to come from engaging in the practice.

The following section uses examples from the interviews to suggest a form of means-end theory in relation to high cost environmental behaviours. Individuals and households are proposed as being goal-orientated when using energy. That is to say that the consumption of energy or conservation of it may have close links to the achievement of larger goals relating to personal, social, emotional, economic and moral values. Although these values are often thought of as personal in their nature, they are likely more strongly influenced by social norms and what society deems as a valued enterprise or goal. It is this reality that will offer policymakers an opportunity to influence the personal benefits individuals and households attempt to achieve in their lives. Personal goals can range from the pursuit of health and self-improvement to increased connectedness in the local community. These larger goals and purposes can influence the way individuals organise and shape their lives, which will consequently impact upon the way they interact with and use energy, both directly and indirectly. As explained in Chapter Two (2.1.4) it is the service that energy provides that individuals and households require. This service can be either direct, in the form of heat, light or transportation or indirect in the form of food and leisure practices. While the dimensions of practice theory incorporate 'meanings', these are attributed to the practice itself rather than any individuals, which leaves little opportunity for understanding the discrepancies between the

practices different individuals engage with. Understanding meanings and associations of practice from an individual viewpoint allows us to consider the personal, social and structural elements that impact upon these meanings and associations and the way in which an understanding of these can allow policy intervention, where possible, and appropriate. In order to avoid any theoretical slippage between the two concepts, the following will briefly outline the difference in this chapter between the ideas of 'meanings/associations' and 'benefits/returns'. 'Meanings' represent the (sometimes shared) understandings that provide a justification for practice (for example the meanings of health and natural farming practices associated with eating organic food). The 'benefit' accrued represents the subjective individual substantiation of the experience of enacting a practice (for example the perception that their family and the environment is healthier for enacting organic food purchasing). The following section takes the first step of analysing the benefits and return households achieve through the specifics of practices, both low carbon and energy intensive.

4.1.1 The private benefits and costs of energy use

Government policy frequently emphasises the environmental and financial benefits that stem from adopting low carbon practices. Whilst some practices may bring monetary savings, encouraging pro-environmental practices for self-transcending reasons (such as for the sake of the environment and future generations) has proved a more problematic approach, brought on by issues such as climate change scepticism and conflicts with self-interested behaviour. For environmental principles alone to cause significant changes in behaviour there would need to be significant changes in the perceptions of environmentalism, such as faith in the consequences of new behaviours and trust in the providers of the environmental good or service.

Shifting the emphasis of policy away from environmental protection, although still promoting environmental and social principles elsewhere, and towards increased wellbeing could be beneficial where pro-environmental practices are deemed to have personal or social benefits. Focussing on the engagement that comes from the presence of internal benefits to individuals can have the

advantage of avoiding the distrust, confusion and ambiguity that can surround environmental products and services. Being aware of the meanings of different low carbon practices can help government channel resources into those which have positive benefits for society, showing a commitment to demand reduction *alongside* societal wellbeing. If low carbon policies can provide a wealth of additional environmental, social and economic benefits then this will have an impact on the perception of the cost and acceptability of climate change action. It has been argued that the co-benefits alone would justify much low carbon policy, without a threat of climate change (A. Smith 2013).

Despite highlighting the long-term benefits of sustainable lifestyles, reducing our demand for resources is sometimes associated with a restriction on freedoms and pleasures associated with higher energy use. The way we organise our lives at the everyday level conveys a lot about us as individuals. This happens internally, giving a sense of purpose and self-worth, and externally to others (Deaux 1993). The stories and meanings that we attach to practices and routines are the details that shape our ability and desire to change different elements of our lifestyles. The following interview extract gives an example of the meanings people create around their energy practices.

> *'It is definitely nice to know, especially now we're feeding him [their young son] things, like when the season kicks in we can feed him a lot of our own stuff....and for the first time this year, I'm trying desperately hard not to use chemicals because I was a girl who used to think, oh well, stuff it, if it's between me and the caterpillar then the caterpillar is going to get it. But now I'm desperately trying to garden without anything, including slug pellets and all that because of him [her child]. So we've been using coffee granules [as insecticide] and so it's not too bad.'*

> ***Harriet, 30-40***

So for example, for Harriet and Stu growing food at home had become a practice that was linked to healthy and natural parenting rather than an effort to reduce their carbon consumption. Of course, opinions around different lifestyle elements (health, parenting and relationships for example) can be highly emotive. In this scenario the benefit of growing their own food was related to the

notion of healthy eating and giving their son a healthy start in life. So a practice that she acknowledged to be environmentally sustainable was for their family more significant because of the role it played in their concept of good parenting and healthy living. Understanding the attached meanings to practices gives insight into the potential of the multiple indirect benefits to be found in sustainable everyday practices. Another example of this is the references to health benefits of different low carbon practices that arose during the interviews. The practice of cycling to work was spoken about as a great way to keep fit during a long working week and avoid having to run two cars alongside a way of decreasing your carbon footprint. This largely repeats something we already know: people are motivated largely by self-interest. The big difference is that the self interest in these scenarios centres on benefits that are widely acknowledged as being effective in creating healthy and happy societies, such as those spoken of in the extract below.

> *'Yeah we are extremely good at recycling, everything gets recycled. We shred up business papers and they go in the wormery...in the garden at the moment we've got about 7 compost heaps on the go which we use on the garden, we're very keen gardeners...you've got the exercise, you've got the quality of the food, you know what's gone on. And you're saving money… And it's very rewarding'*

> **Don, 50-60**

For Don, the opportunity to talk about their waste practices led to him quickly on to talk about the time they spent gardening and the importance of it to their well-being. This conveys the multiple meanings that can be attached low carbon practices. There is pride in reducing waste and being ordered; the shredding of private documents needs doing anyway; the creation of compost which is satisfying; improving the appearance of the garden; the exercise; the quality of food produced; the money saved.

The importance of the meanings behind practices was reiterated for those practices that are a one-off. The following extract demonstrates that the environmental benefits of practices, such as energy efficient renovation, can often come alongside, or even secondary to other benefits.

'We worked with the people who designed the conservatory so we could get what we wanted. What we really wanted was the ability to look out over there, without any glass in between so we can use the telescope or what-have-you'

Timothy, 60+

Timothy had recently had a fairly basic conservatory replaced with a double glazed version, substituting the corrugated translucent plastic roof with double glazed panels. It was a cold extension that was exactly suitable for energy efficient renovation but it was only through further conversation with them that their primary motivation was revealed for the work. The perceived presence of co-benefits appeared to be the prompt for many one-off energy related behaviours.

Bob: '... and I mean we have showers rather than a bath. We took the bath out and replaced it...

Sue: yeah we had the bath out and I decided I didn't want a bath or shower cubicle because I think well I'm getting older and do I want to be cleaning one [a bath] or that there all that chrome around the shower cubicle and in the ledges....so in the end we got a walk in floor level thing.'

Bob and Sue, 60+

While Bob and Sue were talking about their water usage they explained their decision to remove the upstairs bath and replace it with a shower cubicle. Efficiency was part of the decision for the replacement, as was their limited use of the bath it became clear that there were other personal motivating factors behind the decision. For Sue, it was part of a simplification of their home that would suit them as they got older and make everyday life easier. There is always the concern that self-reported, retrospective commentaries on behaviour may be skewed. In this instance, it would seem unlikely that reasons for practices, other than environmental, would be fabricated, as it would seem that the desire to appear 'greener' would be the distortion most likely to impact on reported behaviours.

I would argue that when people are undertaking, or planning to undertake energy-related practices, whether these practices would be regarded as sustainable or unsustainable, they are often highly engaged with their behaviour. It is not so much that they are disengaged with the sustainable aspect of practice, rather that they are, in fact, highly engaged but with engagements centred on other types of meanings. The following extract, regarding the use of the train, demonstrates how unconnected 'environmental' concern can be around a seemingly sustainable practice.

> *'We will go on the train down to Penzance or St Ives but that isn't so bad, because it only costs me and under-5s go free. So if I'm taking two or three of them then it only costs me and I think last year I went and it only cost me £3.99 or something. And children don't go on trains a great deal so it's nice for them too. I got a sister who lives in Penzance and so we can get on and go down to see her easily which is quite nice you know.'*

Trudy, 40-50

On using public transport and in particular the train, Trudy made no claims about environmental motivations to avoid car use and made it clear that the choice was based on a mixture of pleasure for the children and financial logic. Explanations from many participants were highly personalized to families and individuals. In this instance, Trudy was undertaking a low carbon practice for personal benefit and similarly, high carbon practices should not be mistaken for apathy towards the environment. The experiences that individuals have with their energy consuming practices can often be unrelated to finance, the environment and social gratification. Recognising this provides very different opportunities for policy action than those that current policy-making is based on. Veering away from a policy approach based on a narrow definition of motivation will allow policies to be put in place that resonate with the individual's experience of the everyday. With this in mind, the following section explores the how a greater understanding of particular personal benefits of engagement could be useful to policymakers promoting low carbon lifestyles. The section begins with an investigation into the role connectedness to nature can play in shaping the practices of individuals.

4.1.1.1 Connectedness to nature

Individuals presented a variety of associations with the environment and in some instances a link was made by participants between their accounts of their practices and their accounts of their relationship with the environment. Along these lines, studies have been undertaken examining how individuals relate to the environment, for example, connectedness to nature (Davis et al. 2009; Mayer & Frantz 2004; P. W. Schultz 2002), environmental identity (Clayton 2003), and commitment to the environment (Davis et al. 2011). Within this latter research area, it has been hypothesised that individuals who derive greater pleasure from the environment are likely to feel more committed to it, which in turn is associated with greater willingness to sacrifice for the environment (*ibid*). This strand of enquiry is particularly pertinent to the current study as it links the personal benefits of practice with behaviour towards the environment. Davis et al. (*ibid*) suggest a dimension where individuals weigh up the immediate self-interest of a task versus the future wellbeing of the self that is dependent upon the environment. Their research then suggests a shift in the value of pro-environmental actions in which such acts become personally advantageous rather than being self-transcending. Interviewees in the current study could be seen on numerous occasions to make a connection between their own environmental practices on one hand and the pleasure they received from the environment on the other.

> *Charlie: 'I've always done environmental stuff, I was in Greenpeace years ago and always been that sort of way inclined really...*
>
> *Sammy: ...and you've always surfed,*
>
> *Charlie: yeah and that gives you an idea of what's going on.*
>
> *Sammy: 'yeah I think that's what it is because we're both outdoorsy people aren't we and it really winds me up when I see rubbish on the floor'*

> **Charlie and Sammy, 30-40**

The implication here is that there was personal value (i.e. a cleaner more appealing environmental to spend time in) in environmental actions to be gained

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through keeping one's environment clean. Similarly, after explaining a commitment to the environment, the participant below justified it with an example of his involvement with the environment.

> *'I dive a lot so I know and understand the fish and I think from that, I can see the thinning out of the bay at Mevagissy, the direct impact we can have on the environment'*

Stephan, 50-60

Stephan brought up the subject of how his understanding of the environment had been impacted by the time he spent in it. Examples such as this go some way in substantiating research that implies a connection to the environment has implication for individuals' concern for nature, ecological behaviour, and identity as environmentalists (Mayer & Frantz 2004). In the same discussion, Stephan went on to talk about his use of the natural areas around him and how important they were to him, expressing dismay at the prospect of this not being normal for many people.

> *'Most people just sit in, in the evening, watching TV. I bet very few people even own a local OS map.'*

Stephan, 50-60

Within this account of his connection to place, Stephan constructs his own view of what it means to have a link with the local environment. Within this he implicates material artefacts, both as having a positive and negative impact on individuals' relationship with the environment. For Stephan, a television is a material artefact that is bound up with restricting access and enjoyment from the environment while he contrasts this with the ownership a local OS map, which, although he does not expand on his perceptions of associated practices, one can speculate that they involve a range of things (such as hiking and orienteering). From this, it is possible to see not only how practices have their own material elements (such as OS maps and surfboards) but also how these material elements affect wider meanings associated with other practices. Owning an OS map or a surfboard for some people may have associations with an environmental concern. Materials, meanings and competence as elements

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of social practice, are therefore not just interdependent but are also mutually shaping (Shove et al. 2012).

With the majority of interviews taking place in the house of the recipient and, if not, the local vicinity there were references to place as an important dimension of meanings relating to the environment. As can be seen in the extract below, an attachment to place was perceived to be prerequisite to environmental practices.

> *I think really, you have to love where you live, and people don't always realise, or value, what's great about where they live.*

Stephan, 50-60

Home is a multidimensional concept that with a variety of meanings for different individuals. Whether it is perceived to be a place, space, feeling, practice or state of being (Mallett 2004) reflections on self and a connection to nature are likely to be implicated by the relationship between an individual and their sense of home.

> *'The moment I really realised (that human activity was altering the natural world) was in 2005. I know the exact day and I was outside wondering where the swifts were. They are always down nesting under the viaduct each year and this year they were really late to arrive'*

Brett, 50-60

Brett lived in a property that allowed him regular access to the environment with a large outdoor space connected to the property and claimed his interest stemmed from this connectedness to a specific place. Many participants could be seen to build accounts of everyday practice that positioned the meanings of their behaviours in relation to notions of connectedness to local place. What is more, this very notion of connection to local place was, itself, bound up in other types of practices, such as leisure activities like surfing. These extracts demonstrate how interconnectedness to the environment was constructed by some participants in relation to an engagement in particular place-located leisure practices such as surfing and walking. In those accounts, the connectedness to nature was an 'enacted' one.

A sense of connection to nature was also generated by some participants in more psychologised, internalised ways, as an aspect of *identity*.

> *'I wasn't brought up with it actually, but like all these interests in life, you look back on it and think where did it come from? I'm a very sort of earthy person and I do love the outdoors and nature and that sort of thing and I suppose it's just a natural progression really'*

Killan, 40-50

The reference to identity seen here, and in earlier accounts in this section (being 'outdoorsy') is lived out at a practice level, where participants engage in particular activities, but also at an emotional level, where a link is made to the type of person one defines themselves as. Interestingly, Killan talks of a natural progression from a love of nature to her engagement with pro-environmental practices. The interview participant claims that their experiences in nature over time had led to the development of an environmental identity.

It is argued that initiatives must tap into the emotional connection that may be present for many individuals. It has previously been suggested that individuals may be more responsive to changing their behaviour when their own personal relationship with nature is involved (Kaplan 2000). Research into emotional affinity with the environment has found that the more of an affective connection with the environment there is the greater one's intentions to engage with it (Hinds & Sparks 2008). The preceding section has highlighted the importance of considering the ways in which practices are linked to one another, recognising the importance of place and material elements as a part of this. Practices of surfing, walking and diving appear to become linked to practices of engaging in pro-environmental behaviour by virtue of the fact that the former practice is enacted in a particular landscape, which in turn shapes the *meaning* of that activity in 'pro-environmental' terms. It might be that this changed meaning can have positive repercussions for the link between environmental concern and environmental behaviour. Research has found that participation in outdoor recreation is positively associated with both environmental concern and behaviour, with the level of concern/behaviour implicated by the type of recreational activity (Teisl & O'Brien 2003). Environmental organisations can be

seen to be utilising this connection; Surfers Against Sewage (SAS) are an environmental charity who appeal to users of the oceans and beaches around the UK to support them in protecting these assets. Policymakers can also utilise this information, emphasising the importance of protecting the landscape in which other (valued) practices are enacted; practices that are central to fledgling 'green identities'. An example of this could be envisaged for food consumption. An emphasis on 'returning' to the high street or local undercover market for food consumption could be connected to both the environmental and health benefits of doing so but also connected to protecting the valued space of the local town centre. A high street full of discount shops and betting outlets would unlikely provide an ideal location for browsing, window shopping and meeting friends. Linking valued practices (healthy nutrition and high street shopping) serves to emphasise the added value that can be associated with low carbon practice.

4.1.1.2 Time

Time was a prominent issue in many of the interviews. The most common reference to time came in the form of individuals highlighting a shortage of it, which consequently impeded their ability to reduce their direct and indirect energy use. Participants spoke of their ability to cater for the time commitments of pro-environmental behaviour in a way that suggested there were limited spaces for practices that did not have a fixed position in the daily schedule. Southerton (2006) characterises a day as being constituted by practices that have a fixed position, those that are more malleable, with a stock of practices that can fit into empty slots (2006:451). Work responsibilities, parenting duties and leisure activities were all cited as fixed practices that impacted on the time that was able to be allocated to pro-environmental activities. Part of the reason that pro-environmental practices are difficult to maintain over time may relate to the fact that, for many, they are yet to hold a fixed position in the sequence of practices that make up the temporal rhythm of a day. Southerton (2006) cites practices that hold a fixed position as those that 'tend to require the co-participation of other people, obligation and personal commitment. Work was cited as a fixed practice that changed the nature of particular environmental

practices. Food shopping was referred to as a practice that took on a different tempo and different meanings when the practice of work took a different form, as can be seen from the extract below.

> *'We tend to use the supermarkets once a week, but if we're not working we'll go to farm shops'*

> *Charlie, 30-40*

Although not mentioned explicitly, the quote above suggests that food shopping takes the form of a leisure activity when work commitments are removed from their schedule. The meaning of a practice is reframed as a result of a shift in time resources. Something that may have previously been constituted as a routinized practice that was set as a practice with a fixed allocation has become disconnected from that routine in a way that renders its meaning completely different. It is now a 'leisure activity' that one performs during holidays from 'the weekly grind'. Parallels can be seen here with Shove's (2012) analysis of the social pathway of driving and cycling as practices. In this she shows how driving used to be for 'leisure' (by a few) and has now become part of the daily grind for most whereas cycling used to be part of the daily grind for most and is now used (more often, in the UK) for leisure by a few.

Similarly, a permanent reduction in working hours also appeared to change the meaning of everyday practices. The following extract demonstrates how this meaning was mediated by the availability of money.

> *'I don't know if we have always been the way we are now. Well a change of career when we got married – and cut my wages by over a half so that had a big knock on effect. It was a big pay cut so that did have a big knock on effect to be fair and I think since then, we had more time for thinking about things...and now even more since we've had a baby, because we're thinking more about his future and things so yeah probably a combination of the two, but the change of career in particular, that made a big difference.'*

> *Stu, 30-40*

The meaning of pro-environmental practices appears to have changed for Stu as a function of changes in the availability of both time and money. In Stu's case, having a child also changed the meaning of pro-environmental practices from something self-transcending, to a practice that benefitted his offspring. The following extract also demonstrates another way in which the meanings associated with environmental behaviour can be shifted as a result in a shift in the allocation of time.

> *'I mean when me and my wife were both working full time, we did make choices that were different. We were donating money, we would switch supplier to a more ethical brand because we could afford to do so'*
>
> **Jimmy, 30-40**

While they were both engaged in full time employment, Jimmy and his partner perceived their 'pro-environmental' choices to be different to those that were available when only one of them was working. He cites more charitable and ethical contributions as their habitual 'environmental behaviour' when two salaries and a healthy disposable income allowed this. Upon giving up work, these behaviours ended but other new behaviours were adopted. Jimmy spoke of the pleasure he gained in acting out behaviours that he deemed to be more purposeful, acknowledging that when they were both working, there contribution was relegated to financial means.

> *I think if, I'm not being critical but I think if you're buying renewable energy because you think it represents something you agree with then that's great but in a sense all you're really doing is paying for that, you're not really contributing in a way that makes you part of a movement almost, because it just comes out of your bank account, there's not necessarily much value to that, apart from, because I think a lot of this stuff is like, I think there's quite a lot of guilt attached to being green,'*
>
> **Jimmy, 30-40**

The implication from Jimmy was that he felt more attached to and as though there was more meaning in the new practices they were able to undertake since giving up work. There is the sense that there has been an emergence of an

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environmental identity that was not present when environmental contributions were limited to being monetary. Whereas an environmental identity was seen to be enacted through practices located in landscape in the previous section (5.1.1.1 - such as surfing), in this instance, the formation of an environmental identity comes through the physical enactment of environmental practices, rather than practices performed through (invisible, non-embodied) financial means.

4.1.1.3 Pleasure

As well as finding meaning and stories behind low carbon activity, it was clear from the conversations that there were also meaningful narratives to be found behind practices that were environmentally undesirable and carbon intensive. It was a fairly common trend in the interviews to find high carbon practices that appeared to go against a household's general approach to energy use. In many instances there was value held in high carbon activities and pursuits and this value was able to override the value in conserving or avoiding energy use. This appeared to be because, in many instances, the value stems from the connection to other valued practices (such as those relating to socialising, leisure activities, or unwinding).

> *'We have one car, when I retired I kept my company car, which I kept until it was 9 years old. We have another one now. We use very little public transport, because our main interest is bird watching, so we want to go off early in the morning and they don't tend to run buses to the sort of places we want to go to, so we have a problem there and so we'll use the car and then park and ride also, because we have free bus passes.'*

> *Timothy, 60+*

Timothy can be seen here to use a common device to account for one's own non-environmental practices. He uses the language 'so we have a problem there', which allows him to reframe the behaviour as a matter of practical concern rather than a problem directly related to the choices or ideological principles of himself and his partner. Accounts of a behaviour that appear to be describing the world and the situation within it are deemed to be more

persuasive than accounts which are motivated by particular interests or psychological dispositions of the speaker (Gill 1993; Potter & Wetherell 1988) but also go some way in separating the speaker from the practice or behaviour in question, and creating a form of 'out-thereness' (Potter & Wetherell 1988). Timothy's language appears to send out the signal that he is just describing the world as it is and disconnected himself from any responsibility to change such behaviour. Timothy also links their practices to meanings of 'entitlement to an enjoyable retirement' which are not always of a pro-environmental nature. The practice being referred to in this instance is bird watching but as a significant amount of driving is closely linked to this, driving becomes linked to the same practice. This situation resonates with Shove's (2012) definition of 'complexes' which occur when two or more practices are knit together (in this case the driving and bird watching), creating sticky forms of co-dependence (2012:87). This co-dependence can make the reconfiguration of practices more difficult and complex than when practices are perceived as individual entities.

Through an understanding of the stories and meanings that individuals attach to their practices there is the opportunity for insightful, specific and innovative approaches to both preserving and encouraging low carbon behaviour, and reducing and adapting high carbon activity. When the discourse around behaviour is largely ignored, there is the risk that you will disregard the personal and social meanings people hold around their practices and the ways in which these meanings tie certain practices together. Consequently, solutions that don't take these 'stories of practice' into consideration will only maintain the status quo and do nothing to catalyse a shift towards sustainable lifestyles. It is unrealistic to present the solution to creating sustainable lifestyles as anything but as complex and nuanced as the lifestyles we are trying to change.

4.1.1.4 Quality, comfort and convenience

Having touched upon time costs that were perceived to be present for certain behaviours, there also appeared to be benefits or costs related to the quality of a low carbon product or service. This relates to a belief put forward by Fouquet (2012) on energy transitions that services need to be of better quality or with improved characteristics in order for a modification to occur. This feedback from

the interviews strengthens the notion that low carbon products and services need to be at least equal to and preferably improved versions of their less environmentally-sensitive counterparts. We can take, from the interviews, the example of eco-disposable nappies as an instance where this has not been the case. Eco-disposable nappies are, according to manufacturers, more likely to be made with sustainable materials and to have been treated with fewer chemicals. The manufacturers often have a more sustainable approach to packaging and some may decompose faster than conventional disposable nappies. When the experience of using an eco-disposable nappy fails to match the experience of a conventional nappy, the practice was quickly disregarded by one interview participant.

> *'Sometimes it's just practicalities. We did have some eco-friendly nappies, but they were rubbish, they didn't work [they leaked]…and then if we use non-disposable nappies, we have to wash them'*

> **James, 30-40**

The discourse around products branded 'environmental', from this example and others, was that compromising on the functional purpose of a product is not tolerated by a knowledgeable and choice-rich consumer base. There are also other, often financial, costs associated with environmental products and services that can restrict engagement from sections of society. Aside from the effectiveness of a product, there are other, more subjective ideas of quality from a product or service. The standards different vegetables have to adhere to before they are 'shelf-ready' for a supermarket appears to be slowly changing on account of changing associations between the appearance of vegetables and their quality. More variation in the shape and appearance of vegetables has come to be associated with notions of 'local' and 'organic' whereas uniform vegetables are associated with greater amounts of human interference. While disposable and washable nappies may have associations of being environmental and beneficial to a child's health (with less chemicals), the effort and time involved with the practice of using them may be too high to bring about widespread adoption. In the case of dirty and misshapen carrots there it may be that less effort and adequate internal gratification has led to more prevalent acceptance.

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Alongside the quality of a product or service, the comfort provided by a practice appeared to be equally as important in shaping the meanings held around different behaviours. In the following extract a discourse of comfort is drawn on to validate a regular behaviour.

> *'I don't put the dishwasher on every day...but I've had the tumble dryer on today [it was a sunny, dry day outside] because actually, I've bought some new towels and I've just washed them up and I thought well if I put them out there on the line before we use them then they are going to go like cardboard aren't they...so I thought oh, I'll just put them through the tumble dryer. Even in the summer I'll put the washing out and then put it through the tumble dryer just to make them feel nice, even if they are completely dry. You see I ain't one for fabric softeners in with the washing it's just something I've never used'*

> *Sally, 40-50*

Sally appears to abandon both convenience and financial restraints in order to obtain the comfort (specifically constructed here in relation to 'feeling nice') she associates with towels in particular. There is little logic to the meanings of comfort that individuals ascribe to particular practices. In this instance it would have been just as logical for another household to avoid using the tumble dryer at all costs. Understanding the variety of meanings associated with practices and how different individuals gain value from engaging with particular 'ways of doing' allows more opportunity for new meanings and values to be nurtured for practices associated with less environmental impact. In the case of Sally, above, there is an argument for dispelling the perception of towels being more comfortable to use when they are fluffy from the tumble dryer. Nurturing positive associations towards line drying (such as redefined notions of air-dried freshness for example) alongside heightening awareness of the costs of tumble drying (not only financial but also related to the potential damage of tumble drying to clothes) may serve to shift common opinions and ultimately shift the meanings and associations of this particular practice over time. This approach is similar to a form of 'element mapping' developed by DEFRA using the '3 elements tool' (Darnton et al. 2011). This tool acts as a template onto which a practice or routine (such as line-drying washing) can be mapped. Mapping the

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systemic and socially negotiated dimensions of practice offers policymakers practical guidance for developing holistic and collaborative intervention based on the existing elements that support particular practices.

People also appeared to have developed what can be described as 'common-sense' notions around different ways of behaving. The extract below explains how one participant's personal meanings of laundering affected her ability to optimise a cheaper energy tariff.

> *'I try and do some stuff (at night). The dishwasher goes on sometimes at night and it [the use of the washing machine] depends on the weather, because I don't like leaving washing in the washing machine once it's stopped because I think it gets creased really badly and I don't like leaving towels in or the kids' stuff – it's less ironing isn't it!'*

> *Trudy, 40-50*

For some individuals, a tumble drier will be used for comfort reasons, for others, the weather will automatically denote the need to use it. Similarly, others will not have a dryer and consider it unnecessary. There are multiple meanings bound up in all of these practices. The alternative practice of drying clothes indoors may be associated with money saving and the environment, but it could also be associated with home maintenance and health (avoiding the creation of a damp atmosphere inside the home). The accounts of both Sally and Trudy represent the idiosyncrasies of behaviour and the difficulties in targeting behaviour change in a way that doesn't consider them. Equally, the same personal distinctiveness makes targeting more complex and difficult to administer. The policy chapter considers this dilemma in more depth and the possible strategies that could be used to create an approach in policy-making that allows for individuality yet is not hampered by it. In a smaller in-depth sample such as this, the explanations behind the habits are able to come to the fore. The costs associated with low carbon practices were very subjective; what caused difficulty in one household was not seen as a problem in another. Many practices appeared to be dependent on the meanings of the practices for different individuals.

To take an example of the practices around food, there was a healthy desire for new forms of procurement, preparation and consumption of food and individuals appeared to be highly discerning and receptive to theorising about potential changes in such practices. Within this area, one of the key issues that emerged was the need for the elements of these new practices to be able to be synchronised with participants' existing daily and weekly cycles of (other) practice.

> *'I would say that it [the farm lorry selling local meat and vegetables] tends to be around at the weekends when for a long time we were tending to be out birding, around at the sort of times it was about. We would prefer to shop on a Friday morning and do it once a week and that's it. ... but ideally if there was a local farmers market around regularly then I would use it for buying it all locally.'*

> *Annie, 60+*

> *'Well [I don't go there now] because they are normally only out on a Saturday and Saturday is the one day that I like to stay home...while everyone else is out!*

> *If there was one there all the time I probably would. If it was more regular and kept at the same sort of price, I would use them.'*

> *Carrie, 30-40*

> *'well yes I shop at Tesco as well because it's convenient and again I'm not – I don't really want to shop there all the time but life is busy and its more convenient sometimes…but I don't like doing it really.*

> *I must admit, when it's convenient for me to go to the farmer's lorry, then I'll go there instead but often at the weekends you're doing other things.'*

> *Tammy, 50-60*

The importance of the synchronisation of practices can be seen the extracts provided by Annie, Carrie and Tammy, above. It can also be seen that in Tammy's case, the inability of the material and temporal elements of the practice of procurement from the farm lorry to synchronise with her existing

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cycles of practice structures her behaviour in ways that actually contradict her stated desire to avoid the supermarket.

This section has highlighted the importance of meanings of quality, comfort and convenience in shaping practices and how subjective these meanings are. Often, a single practice is bundled up with other practices, which can make the reconfiguration of practices a complex and difficult task. The section has highlighted that complex meanings (in this sample relating to nature, time, pleasure and comfort) not only exist but play an important role in shaping everyday practices. The following section looks at how meaning-based knowledge may lend itself to a different approach to looking at what is often termed 'spill-over' across different types of environmental behaviours.

4.1.2   Reconceptualising spill-over

It has been suggested that 'catalyst' behaviours' have the potential to cause a 'spill-over' into change in other, often related, behaviours (Thøgersen 1999). Whether or not such spill-over exists remains contested. It has been argued by some that behaviours are so unique and multifaceted that it is unlikely that the performance in one domain will have any impact in another. Moreover, it has been argued that engaging in one pro-environmental behaviour may in fact be used as a form of *justification* for *not* engaging in another (often more difficult or costly) behaviour, thereby actively discouraging spill-over (Diekmann & Preisendorfer 1992). Understanding the meanings behind practices gives an opportunity to re-address the value of the spill-over concept and help to unearth links or commonalities within the range of pro-environmental behaviours with which people engage. It is possible that there are a range of common meanings that link pro-environmental behaviours and subsequently shape practice in different contexts. Harriet, for example, held meanings around gardening that held together separate practices; in this instance her water management and waste practices.

> Harriet: '...and every time we're at my mothers' we take a big tub of rotten, horrible stuff home...ha-ha...just for our future soil that's all!!'

> **Harriet, 30-40**

Nicola 'So how do you get your bath water out to the garden can I ask?'

Harriet: 'oh no, just Harry's, it's one of these small baby ones, so just tiny'

Nicola 'Oh, I had visions of you carrying buckets down....'

Harriet: 'ha-ha…no, no, not siphoning it off outside...'

Stu: 'She would do though'

Harriet: 'yeah I would do definitely! Well its water isn't it? It's precious.

Harriet and Stu, 30-40

A meaning-based approach to spill-over highlights the connections and commonalities between practices. Harriet's aversion to waste and her association with waste products and gardening act as a common meaning linking her behaviour around food waste and water disposal. In effect, the ability to instil particular meanings presents an opportunity to shape more than one practice at a time. Instead of viewing spill-over as occurring successively, with an environmental motivation as the connecting factor, it may be that underlying conditions (interests, lifestyle and living arrangements for example) in the wider context are more salient in the take up multiple pro-environmental behaviours. Extracting from the data, there was a link in several households between the behaviours associated with 'growing your own' food and practices around waste disposal. In the above example it would be more likely that the underlying interest in and meanings held around gardening has caused the uptake of multiple pro-environmental behaviours, rather than both being motivated by a pro-environmental attitude, per se. Practices were talked about around a range of areas of everyday life and links were made not on the basis of all being 'environmental' but rather between those that resulted in a consistent and meaningful order to their personal lifestyle.

In order to utilise such associations it will first be necessary to establish where the links in meanings are to be found across everyday practices. If the meanings and benefits behind behaviours are recognised as an important aspect of practice formation then exploring and subsequently emphasising positive associations of and between behaviours may give an opportunity to

promote such a process. Recognising, for example, that pro-environmental practices can spill-over from an active engagement with gardening may indicate that policy-making tackling waste practices should have some engagement with policies relating to urban planning, the allocation of unused council owned green sites and even the school curriculum for example. Behaviours linked by their meaning and the benefit individuals reap from engaging with them resonate with the research undertaken for DEFRA exploring catalyst behaviours (Austin et al. 2011). Within this research, participants were asked to categorise a list of pro-environmental behaviours, and most individuals classified on the basis of non-environmental constructs, such as saving money. They highlighted the multiple ways in which behaviours are related to one another and that the environment as a construct did not appear to be the common denominator of all the pro-environmental behaviours that individuals engaged with. The authors concluded, crucially, that if spill-over relies upon similarity relationships, then the absence of 'environment' as a common denominator would limit the possibility of triggering catalyst effects by flagging any individual behaviour as 'environmental' (Austin et al., 2011). The theories that underlie the spill-over concept are applicable when looking at commonalities but the approach to encouraging spill-over would vary. Encouraging and nurturing consistency across lifestyle priorities may be more worthwhile than assuming positive spill-over from information around self-transcending reasons alone. The areas around which individuals have strong feelings and passions help to define their sense of self and these are the characteristics that are most influential in shaping the way in which people go about undertaking everyday practices. Personal lifestyle constructs (how we view the parts of our lifestyles that define us) appear to be meaningful aspects of practice formation. For example, constructs around health and fitness; connections to a local community; being a food lover; being a nature lover; being an outdoors person; being well travelled. All of these are examples of constructs that came across as important from within the conversations with householders. Recognising the themes behind the priorities and purposes by which individuals organise their lives may provide new ways of thinking around, and optimising, different forms of spill-over.

Demand reduction policy has so far unequivocally favoured an approach that provides households with incentives, with these incentives being based by and

large on financial gain and improved energy services. This approach may work for problems that involve getting people to engage in a minor task that they otherwise would not be keen to carry out. One approach that may have a more prevailing result may be to try to relate and react to the meanings that people associate with their energy use. The evidence found in this chapter would suggest that policies that focus more on cajoling, pestering or enticing people into behaving in certain ways may have some serious limitations. This sample provides just some of the meanings that came out of interviews within two distinct communities. Learning more about the aspirations and goals that direct our relationship with direct and indirect energy use can lead us to solutions that really resonate with the lifestyles of individuals. The chapter has used examples of connectedness to nature; time and quality, comfort and convenience to show how meanings can play out in the everyday ordering of practice. It has highlighted that people seem to behave in ways that offer benefit to their personal and social life. Linking personal goals and well-being with our demands of quality, comfort and convenience, for example, will not be easy but represents the form of integrated approach to policy-making that is needed in the quest to bring down our individual demand for energy.

4.2 Summary

This chapter has considered the stories and meanings people attach to their practices that involve the consumption of energy, initially exploring the idea of costs and benefits attached to different forms of low carbon practice. The impact of connectedness to nature, time and definitions of quality, comfort and convenience were used as examples of how practices can bring private benefits to individuals. It was suggested that these private costs and benefits need to be understood in more depth to fully understand their role in maintaining old and re-establishing new forms of practice. Utilising this new focus for understanding behaviour, it was suggested that the established theory of spill-over could be reconceptualised around meanings of practice, with an awareness of how this could then be utilised for policymaking.

Overall, the chapter advocates a more comprehensive inquiry of, and understanding around, the small but consequential details that inform everyday

behaviours and lifestyles. Accepting that practices are formed from many heterogeneous elements relating to both individuals and the structures and systems around them allows a more appropriate use of policy to attempt the changes to lifestyles that are necessary for bringing down individual energy demand. Clearly, there is no single policy for each practice that would suit individuals collectively and the values and meaning people attach to behaviours can vary significantly within and between individuals. Rather, exposing commonalities will allow shared meanings to come to the fore and provide government with new directions in which policy can be focused.

While this chapter has focussed on the meanings and associations bound up in practices at a particular point in time, it is recognised that these can vary across cultures, times and locations. As the following chapter explores, time plays a particularly influential role in shaping the meanings individuals ascribe to their practices, related to both surrounding influences and personal circumstance. In particular, the chapter explores the way in which (socio-historical) time affects the context in which people learn to consume and (lifecycle) time can impact on the way they configure their practices.

5   A lifecourse approach to energy demand

The ways in which individuals relate to nature, the environment and ecology is far from straightforward and in order to understand this relationship, interactions need to be contextualised socially, historically, culturally and politically (Lertzman, 2008). The following chapter addresses the second of the research questions set out at the end of the literature review (*Do energy practices have a temporal dimension to them and if so, how does this impact upon their performance?*) and focuses on the impacts of different aspects of time on the energy practices with which individuals engage. In doing so, the chapter develops a 'lifecourse' approach that considers the long-term impacts of different experiences throughout a single individual's life and how experiences may also differ for cohorts born within different historical contexts. The origins of a lifecourse approach can be traced to Mannheim's essay 'The Problem of Generations' (Mannheim 1952). In this, Mannheim addresses key sociological issues around the nature of time, the relationship between biology and the social and socio-psychological connections of language and knowledge (Pilcher 1994). As a general analytic framework, the lifecourse provides an organising principle for the interview data. Both sections of the chapter take a historical and temporal perspective, recognising that dynamics evolve over the life span and across historical time.

Two aspects of the lifecourse approach will be utilised. Initially, the chapter will consider how the lifecourse of successive generations are impacted by socio-historical time. This approach acknowledges the influence of historical changes on human behaviour and the link between experiences early in life and later conditions in adulthood. This includes the impact on behaviour of the social-economic, cultural, and political context that an individual experiences during the influential years of early adulthood. The premise is that the socio-historical world into which a group of people (a cohort) are born can influence the social learning that takes place across different elements of life and can affect, in the long term, the practices with which that cohort engages. The chapter suggests that this holds true for an individual's energy behaviour and considers the impact of cohort behaviour (whether divergent or interrelated across successive cohorts) and the long-term consequences of this on energy demand.

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The second section of the chapter will use life stage transition as an organising concept, investigating how life events, in work, relationships and parenthood for example, can impact on energy practices. For all individuals, alongside the process of ageing, a single lifetime entails different phases and stages of life. While there is a substantial body of work investigating the possibility of a link between age and environmental behaviours (van Liere & Dunlap 1980; W. Schultz 1995), evidence is inconclusive and provides no significant correlation. This chapter will proceed, instead, to investigate how the capabilities, resources and responsibilities of individuals differ at particular stages of life and question how these varying influences can shape the energy behaviour of household. This approach recognises the importance of continuity and change in the path of individual lives and highlights the way in which associations, interactions and connections that individuals have with their natural surroundings evolve through the stages of an individual's life.

The simultaneous process of ageing (life stages) as well as socio-historical time location (cohort) is referred to by Abrams (1982 p. 240) as the 'mutual phasing of two different calendars'. This can make it difficult to distinguish the effect of either independently. With this in mind, the following section will separate these two elements of time for ease of analysis, in full recognition that the two temporal aspects are inherently linked to one another. The following section will begin by examining the language of different generational cohorts in relation to their energy use and in particular their food provision and management of direct energy practices within the home.

5.1   Socio-historical time and energy use

A vital element of survival is based on the human need to actively consume resources. This resource consumption has evolved significantly over centuries, shaped in part by changing customs and conventions. In 21st century Britain energy is consumed in a multitude of different ways, the most direct use being the lighting and heating of homes and the driving of vehicles. Energy is also consumed indirectly through the purchase of homes, cars, holidays and food.

How, why, how often and in what way we do all of this is directly related to the culture in which we are living at any one time; that is, the ideas, customs and social behaviour of society. Wilk (2002) describes such influences as the 'energy culture'. The investigation by Wilk (*ibid*) into the culture of energy consumption within different countries and the impact this has on levels of energy consumption demonstrates how ideas around normal levels of heating, the value of material wealth and accepted levels of mobility can all impact on energy consumption and efficiency. Within 21st century Britain, for example, it is expected that every household should at least have access to electricity and running water. The intricacies of how much and in what way energy should be consumed is not knowledge that individuals are born with, but rather something that is learnt through social contact with others. While some customs and conventions around the accepted ways to behave with resources are passed down through generations over time, definitions of normal are dynamic and evolve with changing conditions. In the social practice literature, the arrival of new elements, whether materials, competences or meanings, often lead to, and may in fact depend on, the demise of others (E Shove et al. 2012). So for example, the technical innovation that has led to the demise of the wood fire and the increase in electric and gas heating systems has resulted in the new forms of competence around heating practices (managing automated timer heating systems in thermally efficient ways for example). This has been accompanied by a change in meanings around normal levels of heating. No longer do households heat just one room, and many now consider a cold house to be inadequately heated whereas this would have been normal for previous generations.

5.1.1 Cohort generations

Ipsos Mori has undertaken a major study investigating differences between cohorts and the possible implications for public policy. They separate the current population of the UK into 4 sizeable and distinct cohorts; Pre War, Baby Boomers, Generation X and Generation Y. Obviously, this is an estimated grouping considering the disputes around generational definitions and cut off points. In studying the differences between cohorts they identify three drivers of

change in attitudes and behaviour across a population over time. Period effects are those that happen to all and are related to external events of general cultural shifts. Lifecycle events are those that are unique to an individual as they age and pass through different phases of life, and the focus of the following section of this chapter (5.2). Finally, cohort effects are those where opinions are set by the formative years of a generation, and thus aggregate opinion changes over time because the composition of the population changes (Skinner et al. 2013).

Recounting past experiences, inherited beliefs and influential periods in lives were all indicators from the interviews that the personal but also social-economic, cultural and political conditions in formative years can impact upon an individual's relationship with their energy use. Former experiences with different technologies, the uniqueness of family traditions and the different experiences within neighbourhoods and communities all appeared to contribute in different ways to the current actions of those individuals interviewed with regard to the resources they desired or felt they 'required'. The experience individuals will have had with all aspects of energy consuming practices appeared to vary greatly depending on the cohort (social generation) they were born within. A cohort will be used within this chapter to define a group of people who experience the same significant events within a given period of time, defined by Pilcher (1994 p. 483) as something of a 'social generation' rather than the more common definition of a generation as being within a family group. Karl Mannheim's aforementioned seminal piece, 'The problem of generations' (1952) explores the sociological meaning of a cohort proposing that generational location can lead to certain 'modes of behaviour, feelings and thought' (Mannheim 1952) from which these 'social generations', or cohorts are formed. Mannheim focuses heavily on the experiences of youth and late adolescence in particular in forming particular outlooks. Due to the informal and discursive nature of the interviews, there was no direct inquiring within the conversations about any distinct period within an individual's life. Rather, individuals and couples independently raised their own opinions on different shaping influences at particular times in their lives and this came, particularly, from the older individuals who had likely experienced more significant forms of change within their lives. The scope of influences brought up ranged from

parental consumption role models to the socio-political structures of their formative years. Rather than examining a specific set of years, the study reflects on all reports of what Pilcher (1994) describes as 'historical consciousness' that appeared to lead individuals to experience and approach future situations differently.

Like many concepts within the social sciences, the concept of cohorts does not come uncontested. Cohorts of individuals will not all have identical experiences nor be affected in the same way by different events. For this reason there is no absolute defined cohort length and no evidence that a particular life stage is most influential in shaping an individual's values and practices. Rather, this thesis suggests that being present during particular times and places can lead to the development of similar modes of behaviour and thoughts around particular subjects. The following sections use examples from the interviews around food provision and household energy management in order to investigate the way in which a form of historical consciousness can influence the way in which individuals currently engage in energy-related practices.

5.1.1.1 Food provision

For demonstrating the possible influence of belonging to a particular cohort on an individual's engagement with their energy practices, the following section will focus on household food practices. Food was a popular topic generally within the interviews with many participants being quite vocal and engaged on the subject. The extensive discussions around food practices also served to highlight the range of interactions that the different individuals interviewed had with different elements of food procurement, preparation and consumption. Discussions on the topic of food ranged from what people were eating and where it had come from, to how it was stored and prepared and how any waste was dealt with. The issue of food waste appeared to be particularly pertinent for some older participants and there were frequent occasions when particular practices were attributed to past experiences, with one such example being seen in the following extract.

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Don: 'we seem to waste very little. I mean if we have any stale bread we'll make a bread and butter pudding. I can't abide waste.

Tammy: it's probably from our parents, I mean our parents lived through the war and it's just been instilled in us.

Don: it's virtually always eaten and what isn't eaten is frozen and used again and so there isn't much to throw away. When you hear a third of people's shopping is thrown in the dustbin...and I mean it's also because there are so many people without food, there are people hungry in this world so we shouldn't really throw away anything

Tammy: And most of the meals that we eat are made from fresh, we don't buy a lot of prepared stuff, which is quite common these days, particularly in younger couples because they've been brought up on it'

Tammy and Don, 50-60

Tammy and Don not only related their behaviour back to the way they were brought up but even hypothesised on the behaviour of younger cohorts and the reasons behind the difference in their attitudes to food waste. Major shifts in the provision of food for example, illustrate the impact cultural change can have on the energy practices of individuals and households. The transportation, storage and refrigeration of food has all shifted from supplier to consumer and in doing so, new patterns of behaviour, for example bulk buying, have been created (Vaughan et al. 2007). Tammy and Don grew up in a time when food was still regarded as a precious commodity and there was a connection between the supply and consumption of food. The younger cohorts within society are now able to have an entire shopping basket delivered to their door through on-line shopping. There are direct energy implications in this comparison (an average grocery order from a major supermarket could include fruit ripened in sun-rich countries, New Zealand lamb and foreign beers with vast supply chains while the delivery to a door from a local farmer 50 years ago might have all been produced by one family from within the local area) but there are also embedded implications related to perceptions of value and scarcity. While veg box schemes and local food initiatives are striving to replicate this model of food purchasing in an attempt to limit environmental impact and reinvigorate local

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agricultural economies, the abundance of cheap, exotic food that is becoming normal for many cohorts may make it difficult for individuals to reassess their opinions and practices relating to food consumption.

Participants appeared to link their food practices to their past and their upbringing in a way that was not as obvious when taking about other energy-related practices, again observable in the following excerpt.

> *'We don't get much food waste…mainly because we are just cooking for us and I just cook the quantity we need – I am very anti wasting food. I think it's probably an in-bred thing that you eat and you don't leave – you don't get up from the table until your plate is clean, this sort of thing. It's just sort of given me that attitude to food but there's too much waste, it's awful.'*

> *Annie 60+*

In both of the above extracts the behaviour in question is reasoned, by the participant, to have evolved from learned experience and been followed by a belief in the appropriate behaviour. Both examples suggest the power of the messages that are conveyed in formative years. While Annie does not explicitly mention her parents, she describes her actions as 'in-bred', having connotations of being deeply ingrained by those within her family. The experiences of youth would appear to have embedded a particular attitude and subsequent behaviour in relation to food waste practices.

As well as social learning around strongly held principles about the right and wrong way to behave with regard to food, there was also evidence of practices formed by a nostalgic ideal related to formative experiences with food, as evidenced in the extract below.

> *'It's great because in growing our own food we've gone back to eating seasonally like when I was a kid'*

> *Charlie, 30-40*

In the above extract, Charlie implies that the act of growing food their own food is not only related to meanings of sustainability but also connected to

associations of childhood and of eating in a more natural manner. This suggests that different cohorts have distinct cohort-based identities based on the experiences that have had and that they may have seen change as they have aged and the world has changed. In the above extract, Charlie appears nostalgic for the days when he used to eat more naturally. However, there is nothing to suggest that a couple living off ready meals at the present time might not pine for this 'easy' form of living should they convert to more seasonal, home-cooked, natural food practices in the coming years. The process that might prevent this may relate to increased knowledge, awareness and consequence of any health, cost or environmental implications of a ready-meal diet.

The following extract highlights the ways in which an older couple place their cohort-based identity in direct opposition to younger cohorts, in this case in relation to food practices.

> *Bob: 'the difference (in the way they and their daughter are with food) is that Sarah doesn't have to worry about money; they're quite comfortably off. They work bloody hard and when you think that they don't have to worry about where the next pennies are coming from...*
>
> *Sue: I mean, they don't waste money,*
>
> *Bob: well, but their fridges are loaded, they don't need to be loaded but they are*
>
> *Sue: If I did that with 2 punnets of strawberries, (threw them straight in the bin) I'd think, god that's three pounds there gone in the bin, and she does study money and when they did their lounge they buy things to last, but with food, you know, I thinks she thinks, 'oh we'll get that, we'll get that, we'll get that' and then doesn't get her head around what's going on each night,*
>
> *Bob: I think she's got so many other things to think about, with three children 12, 10 and 8 and they all do something every night of the week, all at different times...*

Sue: They have to eat sometimes at half past 4, say because of the activities and the evenings are really busy.'

Bob and Sue, 60+

Bob and Sue alongside many, but not all, older cohorts within this sample did appear to have very specific attitudes and behaviours to waste. Bob and Sue place emphasis on the differing financial situation between themselves and their daughter and in particular suggest that their daughter does not relate to the financial implications of waste that they had to when they were growing up. Growing up during a period of austerity when the value of food was far more significant than it is today may have left those within older cohorts with an intensified sense of the value of food, and consumable products more generally. It has been suggested that the consumptive behaviours learnt at a young age can often remain relatively unchanged throughout a person's life (Moschis 1987). If it is a cohort effect that drives this pattern and if the pattern was visible at a national scale then this is important to note: as the composition of the population changes, significant environmental practices will be replaced by those of cohorts who have had very different experiences, around food for example, in their formative years. As well as cohort effects, there will also be 'period effects' (consequences of external events, such as the Great Depression of the 1930s) on the practices of the population and the two are often linked. While period effects affect people regardless of their age or birth cohort, cohort affects are specifically related to when people are born with different cohorts developing practices and beliefs influenced by when they were born.

These cohort effects encompass such changes as transformation within the labour market, communications and the availability of consumable goods along with a different set of constraints and opportunities shaping the course of everyday life and related energy practices. Bob and Sue, above, emphasised the difference in disposable income and free time between themselves and their daughter. Alongside this, changes in energy prices, standard work hours and gender work norms for example, are all likely to impact upon average energy demands from households and notions of sufficiency.

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The cohort influences described in this section are intertwined with the evolution of the food system over recent decades. An outsourcing of energy from local labour (in homes, farms and towns) to mass production at a national scale has reduced the time households need to labour over food gathering, preparation and cooking. This has evolved alongside longer working weeks, flexible working hours and more household members in full time employment. In other words, food has become more convenient as the time available to labour over it has decreased (at the household level). The significance of many of the statements from participants above relates to interlocking of many different systems. In this example, the system of food provision is sustained by the co-evolution of many other societal systems. The way individuals purchase, prepare and consume food corresponds with systems of transportation, working and family life and expectations around quality, diversity and convenience. Suggestions of a 'lack of time' and the increased difficultly in organising and managing time have also contributed to a reorganisation of priorities and purposes for the younger generations of current society. There is no simple policy intervention that is able to tackle the effects of cohort influences over time, although understanding the complex interconnections and practice co-dependencies can assist in a more effective approach to changing any such system. In relation to food provision, this chapter clearly emphasises the need for a sustainable food system that can sit alongside the embedded nature of current practices and the technologies, cultures and systems that have built up around them. This is expanded on in greater detail in the policy discussion at the end of the thesis (Chapter Seven) but a strategy that aims to create a more sustainable, healthy and efficient food system in the UK must consider the 'interconnectedness of production and consumption' (Spaargaren & Van Vliet 2000). From the consumption perspective, any policy initiative would need to address all the interconnected elements that regulate lifestyles, recognising the embedded nature of present routines and developing alternatives that are plausible, appealing and accessible.

To further demonstrate the effects of cohort influence on energy consumption, the following section focuses specifically on the references to household energy management from within the interview data.

5.1.1.2 Household energy management

The way in which the participating households spoke of their practices requiring energy use within the home (heating, lighting and the use of appliances) revealed much about the formation of routines and the change in practices over time. Older cohorts expressed their personal experiences of the shift in the management of households and the tasks that accompanied 'normal' life. On a number of occasions, reference was made to the ease with which tasks can now be carried out as a consequence of technological transformation, as can be seen in the extract below.

> *Jules: 'Years ago, when I grew up, we had coal fires and mum would bath us once a week, in front of the fire, in a tin bath, even though we had a bathroom and bath, when we were young, that's how she would bath us. And that house seemed to be freezing. She eventually did get these heaters that come on over night. And you grew up on a farm…*
>
> *Ray: yeah so we're hard. We had an old coal fired Aga. But it was brilliant and so we did all our cooking with it.*
>
> *Jules: and mum used to do a wash loads once a week, she was always in a temper and she had a mangle and a boiler and boiled all the sheets and hung them up, and then she'd iron them for hours.'*

Jules and Ray 50-60

Jules and Ray went on to discuss their current water practices and their anxieties over the excess hot water that was created through their Aga. In this instance, the power of their formative years has led them to two diverse energy management practices at home. On the one hand they decided to get an Aga, which they admit to being expensive, inefficient and on throughout the year, while at the same time they talk of how conservative they are with other forms of heating within the house and their avoidance of other wasteful behaviour in general. This acts as a demonstration of the power of the formative years, as suggested by Mannheim (1952). There is the possibility that the reflective, remembered experience presents a situation with amplified positives and muted negatives, what is known as a form of 'rosy retrospection' (Mitchell et al. 1997).

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This form of retrospection obviously has the power to maintain conservative and excessive energy behaviours.

The importance of differences between cohorts can also be comprehended by looking at a single household in isolation. Within particular households there were reports of disagreements between adults and children around the importance of being aware of, and acting on, excessive energy use (as reported in Chapter Four). The experience of having little and using what you did have with great care appeared particularly salient for the pre-war generation and their children, as demonstrated in the following extract.

> *'I was brought up in the council houses in Redruth and we used to have shared heating, therefore we didn't use bedrooms during the day, we just went to sleep there so...we had gas cooker, no immersion, just a bath and a gas boiler. We used to have a TV and it was 6pence for the TV in the slot. People couldn't afford TVs back then when they first came out, they were jewels. They used to go and rent them, pay as they use…I've done what I can here I think [to save energy and run an efficient house]…I try and save energy because I pay the bills'*

> *Andrew 40-50*

Andrew explained in detail the measures he went to conserve energy and water (from avoiding flushing the toilet and switching off lights, to installing insulation and upgrading his boiler) that he related back to his formative experiences of behaviour with regard to energy use. As older generations pass, a decline in memories of such frugality and conservation is inevitable. The formative experience of the younger generations of today's population is very different to the experiences Andrew speaks of. As with the Aga example above, the following extract again demonstrates that the formative experiences of youth may be influential in energy related practices that are actually more costly for householders, such as maintaining or installing pay as you go energy metres.

> *'I think it is also to do with the way I was brought up in northern Ireland...we used to have a gas meter that we put shillings in and the electric, well you put your bob in and turned the dial and that gave you electricity and that gave you the gas,....and even my mum's TV had a*

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box on the back of it, a slot TV she rented and for 5p or a shilling, you got 4 hours viewing and so when she came in from work, from 6-10 there was TV and then that was it, that was what we had'

Jackie, 40-50

Jackie's experience of growing up in Northern Ireland revealed the enduring effect of a frugal lifestyle. She, like others I spoke to, had declined the removal of pay-as-you-go energy meters despite her own belief that she was paying a premium for energy through retaining it (although these are not necessarily more expensive any more). in Jackie's case, the explanation was that she still lived by a belief imparted by her mother that wherever possible it was more sensible to pay for all goods and services before or at the time of using them. Jackie's experience adds understanding to evidence that preference for prepayment maters is particularly high for those within a particular socio-economic status. The evidence as to why this is the case as suggested by data collected from this study (being able to keep on top of finances, avoiding an unknown and potentially unaffordable bill) help to illuminate behaviour in a way that quantitative evidence (on those switching from prepayment, for example) would not. This rich data on experience as it relates to everyday practice may also be revealing for other less successful policy initiatives such as the Green Deal. The financial uncertainty over the Green Deal loan scheme in relation to pay back from bills may be unappealing to many (particularly those on a low income) when energy costs are already a source of concern. This has implications for the equality of a scheme such as the Green Deal, if a proportion of society were effectively excluded because of the (hidden) financial associations of the scheme.

If cohort generations are presumed to have an impact on the way in which individuals relate to and consume energy then there are consequences of this for projections of future energy demand. The oldest generations in society have lived through dramatic socio-political events that may impact on the behaviours they exhibit in the consumption of resources now. A set of very different conditions greet the newest being born into society at the moment. While environmental awareness may be greater, the lifestyles and energy practices that sit alongside such a movement does little to instil a norm of resource

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frugality. Such significant events or financial struggle in formative years appears to have led to an older cohort very aware of personal consumption of food, water and energy. A retrospective look into how energy use (and the perceptions individuals have around their own behaviour and where it has come from) can serve to demonstrate how prepared the UK may be for the energy consequences of generational shifts over time. It is increasingly being recognised that there is value in looking into the history of particular practices (of energy use) in order to understand potential opportunities and barriers of the future (Fouquet & Pearson 2012; E Shove et al. 2012) and the value of cohort analysis with energy demand studies should also be given more credence.

The data presented here gives insight into how the impact of cohort effects on energy use may influence current energy practices and how it may be possible to enact policy that considers this dimension of behaviour and practice. First, the chapter has suggested that the experience of different 'social generations' can have long term implications for the energy practices with which individuals within these cohorts sustain. While the need for quick action upon emissions reduction policy is usually related to the need to limit the magnitude and rate of climate change and the expense associated with delaying action (IPCC), this data suggests that there are social implications of delay that also need to be considered. The longer lifestyles continue to consist of the limitless consumption of energy (both directly and indirectly), the greater the number of 'social generations' that will embed these energy intensive elements of lifestyles (practices, technologies and social norms). Second, Chapter Four previously suggested that there are positive associations with certain low energy practices (types of food provision, transportation and lifestyle) and within this chapter it has been reflected that previous experiences with less energy intensive ways of living can result in a form of 'rosy retrospection'. In light of this, policy can have a role in ensuring that demands on our time, money and restrictions in opportunities do not inhibit the desire of many individuals to live a less energy intensive lifestyle (as they may once have done, or seen their parents do). Acting as a far more prominent facilitator of alternative (low carbon) forms of mobility, food consumption and heating for example will also help to reverse any of the practices embedded within the generations that have experienced their formative years amongst the promotion of the unlimited consumption of energy.

The first section of this chapter has extracted from the interview sample the perceptions on the way in which past experiences have shaped the practices with which individuals currently engage. The following section examines how lifecycle events (the changes unique to an individual as they pass through different phases of life) can impact upon the experience of energy consumption practices.

5.2 Lifecycles, transition and energy consumption

Following on from an exploration of the influence of historical time on consumption patterns, the effect of 'life stage' is proposed as an important marker in influencing the energy consumption of a household (Elder 1985). Mapping life *stages* or *phases* is a way of breaking down into eras the structure of a single lifecourse. Based on the interview data it is proposed that different stages or phases in life present different opportunities and constraints and are associated with particular activities and obligations. The following section will explore this notion in order to understand the potential impact different phases of life have on the energy demands of a household.

5.2.1 Phases of life as moments of change

If it is acknowledged that over the course of a lifetime individuals and households go through periods of continuity and change in their lifestyles that impact on their overall energy demands, then it can also be assumed that turning points, or phases of change, must occur that stimulate changes in the energy trajectory of the household. Within the behaviour change literature the habit discontinuity hypothesis argues that a lifestyle change in an individual's life acts as a point when it is easier to get people to adopt pro-environmental behaviours (Verplanken et al. 2008). These lifestyle changes may be obvious and concrete, such as house purchase, geographical relocation or changes in work circumstance or they may be more subtle, such as children leaving home or changes in personal or family health. Within this section of the thesis, rather than trying to identify a cause-effect relationship between lifecycle transitions and pro-environmental behaviour, the experience of energy consumption more broadly will be investigated at different phases of life. Transitions in life have the

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potential to impact the physical or structural situation of a household or they may influence more subtly the *meanings* of particular forms of energy consumption. With the likelihood that both effects of change can impact on the overall energy demand for a household, the following section explores the possibility that such junctures do exist and investigates the ways in which households constructed narratives around such changes.

5.2.2 Retirement

When the physical conditions of a household change, it may act as an impetus for a change in the routines and habits that have developed over time. A perceptible adjustment to the working routine of a family can have a knock-on effect on the resources, conditions or demands upon a household. This in turn can lead to a rebalance in the priorities and goals of that household. A change in structural conditions may also create an environment where householders are more able and motivated to re-think their engagement with particular practices. A good example of his would be the influence of retirement and the multiple ways in which it can cause a disruption to previously stable practices. The following extract describes a couple's thought process around their heating practices after a change in their work situation.

> Sharon: 'see, we are still on that [economy 7]. See what we really want to be doing is cutting that, because our electric by day is quite a bit dearer, but our water is heated by economy 7
>
> Malcolm: 'well everything was wasn't it? The whole house is switched on from one in the morning
>
> Sharon: '...of course when we were both working during the day, everything was just ticking on just nicely, but now we're at home now during the day so it doesn't work as well'
>
> **Sharon and Malcolm, 60+**

Since a reduction in working hours, Sharon and Malcolm spoke of reconsidering the energy tariff they were on having previously taken full advantage of a tariff that gave them cheaper electricity in the evening. They presented retirement as

a time which afforded a form of direct reflection upon changes to cycles of energy conservation.

The transition into retirement can be described as a significant milestone in later life. It has been described as not only an objective life course transition but it is also a subjective developmental and social-psychological transformation (Kim & Moen 2002). There were instances within the interviews when participants spoke of engaging with different forms of practice during retirement. There was a sense in which retirement was presented as a time in which individuals became able to exercise a greater amount of personal control due to having more time and opportunities to realise a different set of goals than may have been the focus during a working life. The following extract comes from a couple who were still in full time employment as foster carers but who spoke of anticipating a different set of food purchasing practices in their own retirement.

> *'A lot of people, say now our age who are coming up to retirement or retiring, will go to the farm shops and so on, but from our point of view because we're still fostering, we've still got little children and so it's still a big family and so we're not just eating for the two of us, it's like 7 all the time.'*

> **Tammy and Don, 50-60**

This extract suggests an association between retirement and financial freedom. The potentially more environmentally sustainable practice of purchasing food from local farm shops is portrayed as holding meanings of indulgence. The practice comes across as a luxury afforded with the release of financial and time obligations. The ability to engage more deeply with practices that may have previously been habitual was evident not just in the area of food but also with regard to community energy initiatives and in particular micro-generation.

> *'I think it's retiring that has made a big difference for us. We had never thought about anything like this [renewable technologies] before. We've moved from London to Essex and then to here 6 years ago so to come here was a different way of life completely. But we must think about it [their energy use and solar water heater in particular] more now because you're saying to me, is the water hot enough for me to have a shower'*

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George and Raeanne spoke of two major changes to their lives 6 years ago, retirement and relocation. Reflecting on this they acknowledged that it had had a lasting influence on their lifestyle and the environmental practices with which they now engaged. An increase in free time for them coincided with their move into a relatively active and engaged community around energy and the environment which had led to the development of new practices; in this case the installation of solar water heating technology and frequent involvement with a local food market. This highlights the role of costs and benefits in relation to engaging with energy practices. When Raeanne and George moved to the village there was a significant decrease in the cost of engaging with pro-environmental practices (arriving in an engaged community, with more free time and less outside responsibilities), accompanied by an increase in the personal benefits of doing so (the opportunity for cheaper hot water and the chance to integrate into village life). As highlighted within Chapter Four, policy needs to recognise the existence of costs (whether related to time, money, information sourcing) and benefits (personal and social) in relation to individual behaviour, at a level greater than is currently considered. This example demonstrates how the intricacies of life (and the stages within it) and crucial in affecting the ability of individuals to engage with sustainable practices. Another interesting point relates to the level of influence, or control, George and Raeanne exhibit over their energy practices in their retirement. During retirement, people may feel they have more control over their time which then affords them more opportunities (and possibly motivation) to engage in sustainable practices. However, this greater sense of control may also bring with it a sense that of entitlement to engage in practices of their choice, some of which might involve significant amounts of environmental impact (air travel to facilitate well-earned holidays for example). An example of this can be seen in the following excerpt.

> *'We use very little public transport because our main interest is bird watching. I mean we will use the car when we need to, for birding, there's no point in working for 40 odd years and then not doing what you want to. Our retirement is for enjoying'*

Timothy, 60+

Timothy conveys his perception of retirement as a time to do 'what you want to' and relates such as freedom back to a loyalty and commitment throughout his working life. Although an increase in time to pursue more leisure practices may have led them to consume more energy this was not the case across the majority of their daily practices, where they reported themselves to be conservative with their use of energy. If this is the case then it suggests that the value or meaning associated with a particular practice on this occasion significantly affects the willingness of the individual to sacrifice or alter their behaviour. This scenario falls in line with the research outcomes of Schafer et al. (2011) who found that the meaning of activities was a decisive factor in the adoption of different practices at significant life stages. It may be that practices around leisure and enjoyment hold particular importance within retirement and while potentially associated with an increase in resource consumption in old age there may be other benefits to such practices, such as links to improved psychological well-being in retirement (Kelly & Westcott 1991).

While accepting that there will be occasions when retirement can be used to justify practices with negative environmental impact, progressive policy-making could optimise the higher personal payback and lower cost of certain sustainable practices that are afforded in old age. Specifically targeting older generations, who may have spare time, money and energy to devote to low carbon initiatives, may prove beneficial environmentally, but also socially at a time of life that can be isolating for some.

5.2.3 Parenthood

An equally significant life stage within many people's lives is the transition to parenthood. The following section considers the short- and long-term implications for energy practices of such as transition.

Transitioning to a new phase of life may, in some instances, cause individuals to become more receptive to a reconfiguration of established practices. Entering parenthood and having young children may be such a time when practices, almost inevitably, undergo transition. The logistics of having children was the

cause of one couple's decision to no longer use public transport to the extent they had before the birth of their son.

> *'We used to use public transport – use a train and a bus to get to work every day and that was brilliant, I loved that, I thought it was quite nice, but no I wouldn't even consider it down here [in Cornwall] and now with Luca, we probably wouldn't consider public transport with him. I'd love to live somewhere that was close enough to cycle to school but there's nowhere much to walk to round here, this is why we'd love to move to a*
>
> *village community because there's just nowhere around to walk to.'*

Harriet, 30-40

It is clear that part of Harriet's decision to avoid public transport, walking or cycling is related to her perception of inadequate facilities to do so (such as walking trails, cycle paths and bus services) but there is also an element of a 'common-sense' attitude to practices associated with having young children. The practice of raising children has (over time) become somewhat severed (in the UK) from the practice of using public transport. It has therefore become 'common sense' to limit the use of public transport when one has a child. The excerpt below corroborates such an impression.

> *'Well, park and ride at Truro. But I mean, it's not practical when you've got three or four kids with you, I mean, trying to get on a bus. I've got a 7-seater and sometimes there are 6 of them in there with my oldest two grandchildren.'*

Trudy, 40-50

The notion of avoiding public transport with children, as exhibited by Harriet and Trudy, becomes normal so long as sufficient numbers of carriers continue to reproduce it (E Shove 2003). That is, car travel has been (falsely) imbued with meanings of 'safety' and 'practicality', which has led to its common-sense adoption as a travel practice with the arrival of a child. As a consequence, there may then be fewer children on public transport, with fewer facilities for such situations and subsequently more justification for the continuation of such 'meanings' held around particular practices. The problem with common sense

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ideas around behaviour arises when there is a desire to change the practices of individuals. With personal transportation responsible for a significant amount of domestic UK emissions, there is a need for individuals to reconfigure their mobility practices. Presented with this undertaking, policymakers may find that engrained beliefs around local services and 'ways of doing' may contest and inhibit the emergence of new practices. The facts that using local transportation services and walking and cycling in the local neighbourhood might help individuals enhance their social development, improve self-esteem, make social contact, interact with members of the community, and develop a sense of responsibility (Davis & Jones 1996; Dora 1999) are not considered if one views the ability to get from A to B as the only benefit of any form of transportation, or when car travel has become normatively regarded as the only form of transport acceptable when a young child is involved.

Parenthood can bring with it other such common-sense ideas that assist in shaping the behaviour of individuals. Ideas around adequate levels of warmth can be particularly evident when talking to new parents. The following couple were able to acknowledge, with hindsight, their previous heating practices upon having a baby as excessive.

> *'The first night he [their son] was here we just turned all the heating on, and looking back now, I was in shorts and a t-shirt and a vest top and I was sweating. He had three blankets on and we were wondering why he was crying!'*

> *Harriet, 30-40*

The same couple spoke of particular ideas they had in relation to the food they should be feeding their child.

> *'It is definitely nice to know, especially now we're feeding him things, like when the season kicks in we can feed him a lot of our own stuff. And for the first time this year, I'm trying desperately hard not to use chemicals'*

> *Harriet, 30-40*

Although in this case Harriet had been growing her own food before having a child, the transition into parenthood may present an opportunity to reengage

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individuals with their food (and energy) consumption. The following extract demonstrates how a family radically changed their diet (and the energy consumption bound up in it) with the arrival of children in their family.

> *'We used eat meat but when our first child came along, to begin with she wouldn't eat meat, so then we decided also not to eat it and it's been that way ever since, our daughter's now eat fish, but that's their decision'*

> *Stephan, 50-60*

In this case the decision to eat a vegetarian diet was based on circumstances that came about from the transition into parenthood. For the new parents I spoke to, organic and homemade food was perceived to be the most appropriate way to feed a small child despite no previous strong association with such produce. Accordingly, previously taken-for-granted ways of doing were reconfigured for some couples (and in the case of Stephen, above, had remained as their children grew up). While the transition into parenthood can naturally generate practices that are low carbon, as with the transition into parenthood, there is also the possibility that such a transition can result in practices with a negative environmental impact.

> *'But now that we're weaning him, as much as I despise buying mango that's been flown from Kenya, you know, he has to try these foods.'*

> *Harriet, 30-40*

After explaining her enjoyment in feeding their son their home-grown produce, Harriet revealed the negative environmental implications of ideas held around the transition to parenthood, in this instance the need for their son to try exotic fruits flown to Britain from different countries. The relationship between pro-environmental practices and the transitions into parenthood would appear to be related to change in the meaning or connotations held around a particular practice. For example, what was (for Harriet) previously considered a 'despised' luxury item is transformed into a necessary item that she 'has' to buy in order to expose her child to an appropriate variety of food types.

Acknowledging people as dynamic and responsive agents allows a view of the course of an individual's life as a period of continuity and change with the

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practices with which people engage at certain times in their life being shaped by personal situations and contexts of different periods. Everyday energy consumption evolves over time and practices develop in ways that work to effectively harmonise the demands of everyday life and the social and structural conditions in which they are situated. Life stage is therefore proposed as a potentially more useful indicator of behaviour than the usual demographics that are seen accompanying behavioural research such as age and wealth.

These findings highlight for policymakers the importance of specifically targeting a life stage as opposed to the individuals out of context. While policymakers cannot design a tailored approach for each household, targeting life stage represents a tenable way of accounting for the social and personal circumstances in which people are located prior to designing measures aimed at reducing domestic energy consumption. An example of such policy-making may involve the organisation of sustainable practice workshops, targeted at new parent groups or alternatively at those receiving a pension. Free vouchers (available to new parents on a low income) to spend on milk, fruit and vegetables could be given a greater value when exchanged in local markets or greengrocers, to try and encourage more local forms of food procurement. Working in partnership with respected business establishments (locally-owned hardware stores for example), those over 60 (and accessible through membership to over 60 discount schemes) could be made eligible for particular resources and funds designed for maintaining and improving local green space. These are just some examples of the way in which targeting lifestage, and addressing practices at particular stages, can act as a more effective way of tackling rising energy consumption.

Various events during the lifecycle of a household may disrupt and impact upon the way in which a household operates and the dynamics between different individuals. Going through such life stages can alter the meanings of different practices (meanings around adequate nutrition, free time, and mobility practices) and individuals or households can be more open to information and experiments concerning new forms of, for example, mobility, shopping and eating. In this way life events present themselves as windows of opportunity for making adjustments to social practices. Policymakers can utilise such moments

by first, using established routes (such as parent groups, estate agents, schools, and the Women's Institute for example) to access individuals within a certain life stage. Second, tailored information, funds, finances and support should then be made available through these channels, with more attention able to be given to the meanings, context and related practices within a particular life stage.

5.3   Summary

The lifecourse approach (encompassing cohorts and life cycles) highlights the dynamic processes of development and change over the lifespan (Kim and Moen, 2002). In this chapter I first examined the context and conditions in which energy behaviours are learnt. I then attempted to establish grounds for a possible link between the context we experience in our formative years and the practices that we engage with in later life. In the second part of the chapter I juxtaposed this against an analysis of the changing practices with which an individual engages in one lifetime. In this section, I argued that there are very clear opportunities present at different stages of life, which when coupled with changing meanings of practice, can lead to behaviour change (in different directions). Personal capabilities may include the time, knowledge, social status and network of relationships a person has at any one time.

In trying to understand the meanings individuals attach to their energy-related practices and tracing these through the lifecourse, this chapter has argued that we need to be aware of the context in which younger generations are learning to interact with energy, in both direct and indirect forms, and the need to remain mindful of the impact of the changing cohort structure of the population on predictions of future demands for energy. This will involve recognition of the on-going social implications of population changes and the energy implications of such changes. With an increasing number of individuals who have only ever experienced unlimited access to resources such as energy, water and food, urgent action (and ensuring the normality of sustainable practices of those currently in their formative years) has the potential to provide benefits akin to those reported elsewhere (IPCC 2014).

This chapter has looked at the ways in which sustainable practices can be shaped by an individual's temporal location, both in terms of their location within the socio-historical timescale (cohort) and their location within their own individual timescale (life stage). While these effects of temporal location are, in some sense, 'social' in nature (in so much as they position the individual within a set of social circumstances), the thesis has not, to this point, looked specifically at how practices are shaped by processes of social *interaction*. That is, the way in which the dynamic and unfolding interactions within households come to initiate, configure, maintain, and extinguish particular forms of energy-related practices. The final empirical chapter focuses precisely on this issue.

6   The social dynamics of energy use

Within my review of the literature in Chapter Two, I suggested that there is value to be found in understanding the social and historical context within which energy practices are situated and the meanings and value that they hold for individuals. Chapter Four investigated the way in which energy practices, both those high and low in carbon intensity, are bound up with meanings and value that go beyond their practical, utilitarian attributes. Chapter Five proceeded to investigate the way in which practices, and the meanings and value they offer, are affected by both the point in time in which they are located and varying factors throughout a lifecourse. Chapter Six will conclude the empirical section of the thesis by addressing the third of the research questions posed within the literature review (*How do the social systems in which lifestyles have become embedded and the social processes, interactions and arrangements within households shape and reinforce patterns of energy consuming practices?*). Accordingly, it will present an account of the social interactional dimensions of practice, describing the ways in which interviewees related their own energy use to other individuals, in both the home and wider community.

There has been very little attention given in past pro-environmental behaviour research to the interplay between members of a household and the resultant impact of this dynamic on energy use. As outlined in Chapter One, research has tended to treat a household's energy demand as the product of the behaviours of one or more atomised individuals, rather than considering such behaviours as a product or outcome of a socially-negotiated system of practice. Early inclusions of a social dimension in depictions of behavioural processes were seen in the form of normative beliefs about what others think and how they would view a performance in the Theory of Planned Behaviour (TPB) (Ajzen, 1991) and the Theory of Reasoned Action (TRA) (Fishbein & Ajzen 1975). Social dimensions are most commonly observed in the social norms literature, where they are seen as a primary driver of behaviour. People are quite often unaware of the power such norms have on their own behaviour (Griskevicius et al. 2008) but considering the proven impact, the utilisation of social norms holds significant potential in influencing pro-environmental behaviour. What is missing from such accounts, however, is a focus on the actual social dynamics that

produce and sustain various forms of practice within a multi-occupant household. This chapter aims to provide such analysis and in so doing, places the social interactional aspects of energy use at the centre of the investigation. First, the patterns of interactions between individuals and practices within a household are explored, alongside the ways in which practices can be formed, challenged and restructured. Following this, attention is turned to social dynamics outside of the household, the existence of particular communities of practice and specifically the role social capital may play in structuring energy practices. The chapter concludes by proposing that increased levels of social capital within communities, in particular situations, may have a role to play in a low carbon society of the future.

6.1   Social dynamics and energy use

This chapter will present an analysis of the insights provided by the interviews into the dimensions of social order within households; the rules, roles, routines and processes that shaped practices. The households within this study appeared not as utility maximising entities but instead as sites where people and activities merged through a process of negotiation. There were references to the resources and means (financial stability and work, for example) that impacted upon household practices, however it was clear that social aspects (for example the interactions and arrangements with others) played a substantial part in the ways in which such concerns shaped the materialisation of practice. Within the households sampled for this study it was apparent that the social dynamics of daily life had an active role in shaping personal energy actions and perceptions of these. The household appears to be far more than a unit of consumption but rather a place of exchange, interaction, bonding and identity formation. One objective in holding multi-person interviews was to try to collect a less individualistic and more social account of the practices undertaken in the home. With energy consumption bound up within a variety of activities (parenting, leisure and food practices for example), this section examines in more detail the social dynamics that appear to shape such practices. In particular, it explores the concepts of practice normalisation and conflict in relation to the energy practices of daily life.

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If we hope to encourage more sustainable lifestyles, we need to understand the importance of 'others' in shaping practices. Short-term initiatives or programmes that focus on a single behaviour by an atomised individual for a set amount of time are often criticised on the grounds of achieving only short-term change and lacking a holistic approach to people's energy use. In an attempt to move beyond such conceptualisations, the households participating in this study were not undergoing a programme of change or being encouraged in any particular ways to change their energy behaviours. The only intervention within both communities was an energy initiative aiming to acquire community support for the reconfiguration of energy supply and demand within each locality. However, no households were being monitored or studied for any reason connected to the projects. This gave the freedom for interviews to incorporate multiple practices and explore in an open and unstructured manner the context in which practices were situated.

Households with identical infrastructure and equal numbers of occupants have been shown to display a wide variability in energy use, indicating the importance of occupant behaviour within a household (Morley & Hazas 2011; Harold Wilhite et al. 2000). On the one hand, this may be due to psychological differences between the individuals within the households in question, however it could also be related to the emergence of different 'energy cultures' (Stephenson et al. 2010) within different households, which may exist even where the psychological characteristics of the individuals within each household are identical. This chapter applies elements of a practice theoretical approach to household energy consumption by examining the energy practices undertaken by networks of individuals, in this case, inside and outside of the home, and looking at the codes, rules, procedures, implicit understandings and underlying assumptions (Wenger 1998) that impact upon how they are carried out. Practice theory, with its focus on dynamics, relations and enactment provides the ideal tool from which to analyse social interactions. Rather than limiting the social to an individual's normative beliefs of others opinions, social practice theory allows the household to be viewed as a 'field of embodied, materially interwoven practices centrally organised around shared practice understandings' (Schatzki 2001 p. 3). The location of the social in energy consumption will therefore be analysed not in discourses or minds but rather in practices, in this case, by

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focussing on the actions of those within a household in order to be able to identify the key elements, both shared and divergent across households, that impact upon overall domestic energy consumption (K. Gram-Hanssen 2011). The chapter will begin by exploring the ways in which social interactions within those households interviewed shaped the structure of their daily practices with the purpose of recognising the importance of interactions and relationships within households in shaping the 'ways of doing' that come to be seen as normal. In doing so, there is an attempt to open the so-called 'black box' of the household (Darby 2003) and shed light on the social processes through which energy practices are interpreted, negotiated and settled upon.

6.1.1 The financial code of practice

Within each household there exists an array of information related to knowledge, experience, opinion and values that contribute to the energy-related practices that are seen to be normal for each particular social unit. This information helps to 'frame' the everyday practices with which each household engages. The principles upon which these practices are based are not fixed and may evolve as household conditions change (whether personal, social or physical) resulting in a change in practice. Investigating the way households frame their energy-related behaviour is essential in order to understand why it is that households use energy in different ways.

At an individualistic level, a household with multiple occupants will contain unique individuals with different needs, beliefs and aspirations. To date, the role of gender has been studied most (of the various demographic dimensions) for its impact on pro-environmental behaviour (Grønhøj & Olander 2007; Eunsil Lee et al. 2013; Zelezny et al. 2000). Changes to the composition of households in the past fifty years has brought with it changes to the processes of decision-making and the configuration of practices within households. Whereas in the past the allocation of income, resources, time and the purchasing of goods within the home might have been male-dominated, this has shifted to become more equal between genders (or at the very least to be a process of negotiation) which has led to a variety of other factors to be equally significant in the formation of household practices. For example, the practices a household

engages in and the form they take will also depend greatly on the processes and transactions *between* the individuals living there. This is true for many energy significant practices and decisions such as heating levels (how a household of different individuals discuss and control their heating controls for example), food practices (such as the interactions around who eats what, at what time and under whose preparation), and travel arrangements (interactions around the use of any car and the need for lifts for example).

As suggested above, many of the households interviewed appeared to have a number of shared principles, around which energy use negotiations could be managed. These principles were not always strictly adhered to and at times led to conflict or consensus. This was clear from an analysis of the interactions within interviews and also through analysis of the accounts given by individuals of the everyday dynamics within households. One meaning upon which participants predicated or justified their practices related to the concept of saving money. Many accounts of household behaviour, such as the extract given below, demonstrate the way in which the avoidance of wasting money was represented as an accepted 'normality' in negotiations around energy use practices.

> *'If Sara is on her laptop and she gets up and goes I'll say to her, 'don't leave it like that, if it's not in use un-plug it and that's that'. 'Oh but I'm charging my battery' 'no well, if you're not using it you can charge your battery when you start to use it again.' Sometimes, if she's using it upstairs she will turn it off and leave it plugged in, with the battery still on charge and it's charging me electric. So if it's not in use, turn it off. We are very conscious, not so much of the environment side of it, it's the financial side of it that makes us go round switching things off that you don't need.'*

> *Donna, 40-50*

Donna's dialogue above demonstrates the normality that existed around the understanding of money as a justifying principle around which energy use practices could be negotiated. Although she appears to struggle in convincing

her daughter to adhere to all the practices she would like, it would appear acceptable within her household to confront others on this shared principle.

Although the specific social processes and interactions relating to energy use varied across the households interviewed (and subsequently shaped ideas of what was normal, reasonable or justifiable energy related behaviour), the normative expectation of the worthiness of thrift was rarely contested. There were, however, incidences where the environment as a principle upon which to base energy practices was disputed among household members. Practices that could be regarded as environmental in motive, returning no financial gain (such as composting food waste and avoiding packaged goods) appeared in some households to create discord among household members, as demonstrated in the following two extracts.

> *I compost as much as I can. My wife doesn't. If I peel potatoes they'll go out (in the compost bin) but she won't.'*

> *Andrew 40-50*

When discussing food waste Andrew explains the impasse he faces in engaging with pro-environmental practices while living with others that are less motivated to do so. The lack of apparent shared principle around the environmental gain of a particular behaviour (in this case, composting food waste) has led to a dispute and disjointed practice across the members of a single household. A household will have a multitude of normative frameworks (related to where they go, how they travel, what they do and buy for example) that help shape everyday behaviour, developed from a process of continuous and seemingly insignificant interactions between individuals. In the following extract it is possible to see the result of another discrepancy in normative framework and the consequences of such for both household dynamics and overall purchasing practices within the household.

> *David: 'We never have less than three dustbins every week and we still recycle. I don't know why. [Shouts to the kitchen] Gretta, how come we have so much rubbish?*

Gretta: Well that's down to you. That's because you buy things that I wouldn't buy.

David: Like what?!

Gretta: Stuff that's pre packed.

David: Apparently I buy pre-packed food.

Gretta: Well I never buy half as much as you and I have always grown my own vegetables, ever since I was young, always, and tried to be self-sufficient.

David: Oh right, so if I wasn't here then there wouldn't be any rubbish at all?

Gretta: No.

David: Did you hear that? So it's all my fault.'

David and Gretta, 50-60

With no overriding or agreed normative framework around food purchasing practices, both individuals appear dissatisfied with the current condition. It highlights the significance of a normative framework and ultimately how considerable the effects of having one or not can have on the behavioural outcomes within a household. Gretta has ambitions to live sustainably, made unachievable for her because they do not always accommodate David's views on food consumption, with David claiming elsewhere in this discussion that 'occasionally greed gets to me and I have to go off to Marks and Spencer'.

Again, a different dynamic would appear to exist where members of the same household share the same normative framework. In the extracts below, the incidence of pestering is disclosed and accepted as appropriate when behaviour was seen to diverge from the guiding principle of money-saving.

Stu: 'Yeah I have bills that go back years…and it says on the bill whether we are in credit or debit, and it generally follows the patterns that we are in credit in the summer and then go into debit in the winter'

Harriet: '…and I get told not to water the plants and to put an extra jumper on, that's basically how it goes, depending on whether or not we've got any money'.

Harriet: 'but recycling, we both kind of do our bit, if one of us puts something paper in the bin, the other one will pipe up or be 'what are you doing with that tea bag, put it in the compost'

Stu: 'I do have to go behind her and turn the lights off actually'

Harriet: 'yeah I am rubbish with that; I'm definitely not perfect with that'

Harriet and Stu, 30-40

The extract suggests that Stu, the member of the household better acquainted with the family finances, was authorised to comment on and shape the behaviour of others within the household if it was deemed to be uneconomical.

Stuart: 'we don't leave things on on purpose, I always say to the kids if they're upstairs watching telly, you know and they come down here and get carried away, for half an hour or so I'll always say to them to turn it off.

Sally: (smiling) he's probably the worst one for it.

Stuart: well the only thing I leave on standby is the bedroom telly, because I obviously don't want to get out of bed and turn it off!'

Sally and Stuart, 40-50

In the above extract, it is evident that gentle reminders to turn appliances off are interactions that exist not only between parent and child but between all family members. Perhaps brought on by the recent energy price rises and the increased cost of living since the 2008 recession, many households were keenly aware of the cost of small behaviours on their energy bills and this may have been, in part, a cause of the common shared principle around saving money on energy use. It may be that it is deemed acceptable, within many households, to confront another about their money-wasting practices when the impact relates to the (shared) financial situation of the household.

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Avoiding wasteful practices in general (those not explicitly linked to money-saving) was a common normative behaviour amongst those interviewed. In many instances, avoiding and reducing wasteful practices was portrayed as achievable, desirable and normal in everyday life. Negotiations and confrontations around wasteful practices were therefore normal and acceptable, as demonstrated below.

> *Sharon: 'We never have anything on standby, we always turn it off. We have that TV...oops...Malcolm! ...I turned it off didn't I?*
>
> *Malcolm: I said to you, are you gonna turn that TV off and you said yes!*
>
> *Sharon: She's never going to bloody believe it is she! But we do honestly, we do.*
>
> *Malcolm: Sharon's got into the habit, I ain't perfect. You might think I am, but...'*

Sharon and Malcolm, 60+

Sharon and Malcolm had discussed turning the television off before the interview commenced, reflecting their interpretation of the socially desirable behaviour with regards to the use of stand-by. These micro-social intentions, behaviours and interactions between actors in a household that shape the intricacies of the everyday highlight the multifaceted nature of our homes and the variety of exchanges and interactions that lead to practices taking a particular shape. In particular, in this instance, it is possible to see how participation in the interview for this project had a direct impact on the negotiations around practice. It appears as though Sharon and Malcolm had an interaction around the way they wished to present themselves and their energy practices within the interview. This highlights the difference between those negotiations around the configuration of practices that takes place in the privacy of the home as compared to the social practices that are affected by social norms and an awareness of being observed by those outside of the private sphere of the home. However, the extract below highlights how even observation from others within a household can lead to a different behavioural outcome.

Sue: 'I mean it's like last night we went up to my sisters and brought back some London pride, which grows everywhere out where they are and some primroses. They dug up a couple for us and so last night Bob came back and put them in and then he said 'oh I'll go out and give those plants some water again' and immediately I thought, oh Bob will use the hosepipe, so I said to him 'make sure you use that water in the watering can, from the water butt and the watering can' but Bob would have taken it from the hosepipe.

Bob: yeah I probably would have stood at the bottom of the steps and sprayed it, but I wouldn't have used a lot because it doesn't take a lot but I probably would have yeah

Sue: yeah but I thought, if he does that we're paying to do that but with the water butt out there that was overflowing the other week, so what's the point of using water?'

Bob and Sue, 60+

Although it was Bob who was watering the flowers, the use of water from the water butt as opposed to the tap only came about through Sue's direction and her personal understanding of both the financial implications of the two water sources and Bob's behaviour without her intervention. It has been suggested that the impact and amount of energy used within many daily practices is not readily apparent and that individuals find the implications of their practices hard to comprehend (Burgess & Nye 2008). The dynamics that existed within the households of those interviewed would suggest that this was rarely the case and individuals' practices within the home were discernible and were recognised as either conforming to or contradicting appropriate household behaviour (a term which implies prior thought around impact). While households did not regularly appear to link their daily activity and energy use levels to the environment explicitly, the principle of money saving highlights the possibility for households to be more aware and mindful of a practice when the implications resonate with them. Where behaviour was perceived as contradictory, gentle pestering appeared to be considered tolerable. In the extract below, it is possible to recognise the existence of a difference of opinion around different

preferences for using the car but also a shared normative framework to come from this variance.

> *'The bus times are wrong for me often, because I use it (their car) a lot for getting to church in the evenings and so I'm not that good. But I have tried to reduce it a bit because Ray moans about petrol and everything and so I have tried to reduce my journeys.'*

> **Jules 50-60**

Jules may speak of her husband's 'moaning' but as the conversation progresses she appears sympathetic and understanding of her husband's reasoning. Even amongst the less environmentally conscious of the interviewees there was a general feeling that inefficient and explicitly wasteful behaviour was to be avoided, and this agreement made gentle pestering more acceptable. In some households, new routines had developed to try to eliminate undesirable behaviours such as gentle placement reminders and list making as can be seen below.

> *'I mean say if there was a programme that came on at half past ten and didn't finish till 12 o clock and I really wanted to see that programme…then I'll say to Bob, 'don't turn the TV off at the wall because I'm recording something'. So what I do then with the remote is, I put it on top of the sideboard so that when I come down in the morning I see it there, when it's normally kept in the drawer and I think, oh that remote's there which means I need to turn the TV off. It's just silly little things isn't it?'*

> **Sue, 60+**

> *'and we avoid it [waste] by keeping a list and we both write things down when we run out and stick to the list'*

> **Charlie, 30-40**

These habits, that have become normal in the two households in question, represent a way of creating and maintaining a joint objective and may help create unison between household members. Opposing this, there was an

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instance where a financial reasoning for energy savings did not create a shared practice norm among members of a household. The following quotation demonstrates resignation on behalf of a householder who had tried to create money saving values among his wife and daughter but had resigned to their practices being out of his control.

> *'I try and save energy because I pay the bills. I can't change them [his wife and daughter]; I know if I go up there now I'll find lights on.'*

> ***Andrew 40-50***

Andrew described himself as the manager of household finances and the extract above describes his efforts within this capacity to try to save energy and money. Rather than feeling supported by his family, he refers to his efforts as an on-going battle against them. He went on to explain that his wife originates, and for a long time has lived, in a country where electricity and water are both very cheap. He believed this to be the reason that both his wife and his daughter had little appreciation of the cost of resources and consequently why it was they struggled to gain consensus over the way these things should be consumed. This relates back to the earlier point about 'money' being the ground upon which regulation of other members of one's household is both considered acceptable and (potentially) effective. The quote above highlights a situation in which this has not proved to be the case. In this household, one adult has grown up in a context where the low cost of energy has removed the need for any interactional norm of 'change your behaviour as it is costing us money'. There is evidence of substantial differences in the use of domestic energy between different cultures (H. Wilhite et al. 1996) and when divergent cultures come together in one dwelling it is unsurprising that there may be inconsistencies in the practices of individuals.

The financial principles upon which many interactions and negotiations within this chapter have been based reveal a new way of considering the implications of the energy prices. A more complex relationship between individuals and cost is revealed relating to the interactions and dynamics within a home environment. Rather than individuals simply choosing to save energy when prices rise steeply because of a general reluctance to spend more money,

energy price increases may (also) more specifically change the dynamics within households and foster a normatively acceptable interactional resource that can be used to give practices more defined parameters within daily life. This explanation suggests that uncertainty and ambiguity around environmental messages relating to consumption (the impact of climate change, whether individuals should be consuming or saving) has left individuals and households with limited guiding principles upon which to base their behaviour in relation to the environment.

The social make-up of a household holds the potential to affect both how practices are framed and the social dynamics that lead to household norms. For example, the presence of children appeared to increase the need for better articulated discussion and agreement around energy-related practices. Children have the potential to change the combination of needs and aspirations within a household and alter the interactional process through which decisions over different practices (of heating, eating, and travelling for example) are undertaken. When it came to the more mundane consumption of energy (such as switching off lights and turning down the heating) some parents reported schooling their children into considering their energy needs and adapting their behaviour.

> *'If we see the kids walking around in a t-shirt and they're cold, we'll tell them, put a jumper on first and then we'll think about putting the heating on'*
>
> *Stuart, 30-40*

> *'I mean my daughter had a tendency to go to college in one outfit and then come home and change into another. Well I mean what she puts on in the morning, no you keep it on, and if it's a pair of jeans, you can get two days out of a pair of jeans. It's important to look at how many times a week you use the washing machine, try to keep everything down to a minimum. They are smart kids...they know that this is what we have coming in and this is what's going out and if you want a pair of new trainers, we're gonna have to tighten our belts somewhere you know'.*
>
> *Jackie, 40-50*

Both Stuart and Jackie refer to a degree of coercion on their behalf in relation to their children's energy use practices, the absence of which would result in higher household energy consumption. For Jackie's daughter, the practice of wearing two outfits in one day is unlikely to be related to cleanliness but instead connected to issues of fashion and/or comfort. Jackie in this instance is able to provide the necessary tailored information (in this case that extra laundry costs money, which has an impact on other household spending) in order to negotiate around her daughter's behaviour. Evidently, in this instance, Jackie frames her behaviour through a money saving lens. She refers to her kids as 'smart' because of their understanding of the need to save money. It is entirely possible that a 'smart kid' could also be viewed as one who acted on an environmental principle because of the need to reduce carbon emissions. In our society, such a formulation seems far less normative which explains the lack of persistent practice change around energy practices in households. Nevertheless, the extracts demonstrate how the ability for a household to change their practices (for example use less direct and indirect energy) can be related to the ability individuals perceive themselves to have in shaping the energy practices of those with whom they live. Having children can, for example, affect people's perceived ability to behave environmentally. While research tells us that families with children at home use more energy than those without and that as children grow older, the energy use of a household increases (Brounen et al. 2012), there are clearly ways in which parents have utilised social interactions to shape the energy behaviour of their children. The presence of children in a household helps to emphasise the mediational role of 'significant others' in the relationship between an individual and the overall energy consumption of the household in which they live. The introduction of a new baby into a household demonstrates the dynamic and responsive nature of meanings that frame energy use behaviour. For example, a young baby may change perceptions around adequate levels of household warmth, as demonstrated in the following extract (seen earlier in the thesis, in section 5.2.3).

> *'Yes, massive, a huge impact [on our energy consumption]. The first night he [their young son] was here we just turned all the heating on and looking back now, I was in shorts and a t-shirt and a vest top and I was sweating…and he had three blankets on and we were wondering why he*

was crying! And now with harry, we probably wouldn't consider public transport with him'

Harriet, 30-40

While earlier in the thesis this extract demonstrated the way in which various events during the lifecycle of a household can disrupt or impact upon perceptions of appropriate behaviour, in this instance the extract demonstrates the ability for a child to change the shared normative frameworks around which energy use negotiations can be managed. A new baby as brought with it the perception that a young child needs a particular degree of indoor warmth along with an opinion on the most suitable forms of transportation with a young child. The above extract neatly ties together examples of the three aspects of the empirical chapters of the thesis. Firstly, Harriet explains the changed meanings of warmth that accompanied the birth of her son. Heating took on notions of health and care in a way that they had not experienced before (Chapter Four). In having a baby, Harriet and Stu had reached a moment of change in their energy lifecourse, a point at which previous practices and routines to engage with pro-environmental behaviour may need to be restructured in order to incorporate changes in their lifestyle (Chapter Five). Having children then changes the normative frameworks within a household. Harriet and Stu explained there use of a timer and thermostat changed with the arrival of a baby. Previous negotiation between the couple around the finances of heating their home had given way and unlimited use of the heating system in order to maintain a perceived 'adequate' level of warmth (which took priority over previously cost-motivated behaviour).

This section has investigated the way in which what comes to be seen as normal within a particular household is often based upon shared normative frameworks that can be observed in terms of how they play out in interactions. Money saving was a particularly effective framework within which household members were able to attempt to direct or influence the behaviour of others, at least amongst the socio-demographic group interviewed for this study. Where there was no externalised motivation for undertaking an energy saving behaviour, there appeared to be less household consensus and therefore less consistency in the way a practice was undertaken. The extracts have

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highlighted the considerable influence the presence of 'others' can have on the formations of practices when there is a shared normative framework. The shared normative framework most effectively exercised within the interviews was based on money saving although there is nothing to say that a normative framework of protecting the environment could not be as effective but in the households sampled it appeared to be a less locally-relevant norm. Exposing the social interactions that precede the formation of practice and gaining understanding around the processes through which practices co-evolve between household members complicates and yet enriches our understandings of how 'norms' help shape the formation and maintenance of energy practices. This chapter has begun the process of uncovering the varying dynamics and arrangements that exist within households and the following chapter (Chapter Seven) will use these empirical findings to set out the implications for policymakers.

6.2   Social capital

Issues such as the economic crisis and climate change have led to a focus by policymakers on economic regeneration, renewable resources and the efficient utilisation of energy. Although technical and economic answers to these challenges are important, the following section argues that the networks of social connection in which individuals exist and the resources that such networks provide also have an important role to play in responding to the challenge. The second half of this chapter will consider in more detail the relationships and connections that exist between individuals and the impact such connections may have on energy practices and sustainable lifestyles more generally. The section will initially introduce the concept of social capital and provide a brief account of its conception and use within the literature. It proceeds to identify and describe a possible link between individuals' practices and their social capital and using examples from the text, demonstrates the potential of this association in practice.

The origins of the concept of social capital can be traced back to the writings of L.J Hanifan and in particular his work on the rural schools of West Virginia in the United States. Hanifan was interested in the 'tangible substances [that] count

for most in the daily lives of people…namely good will, fellowship, sympathy and social intercourse' (1916 p. 130). Despite these comments being relatively overlooked at the time, his concept of social capital has since been reignited by social commentators as well as those within other fields and settings including health (Campbell et al. 1999), families (Edwards et al. 2003) and government (Keele 2007). Social capital is a multi-faceted topic with authors investigating, variously, the ability of social capital to operate as a resource to collective action, to instigate economic growth, and to lead to democratic group membership (Richardson 1986). Social capital can be visualised in a community setting as the glue that holds different individuals together and represents the many different networks that exist between people. In this study social capital will be conceptualised as a potential property of communities, and thus, something that can vary in its existence across different communities. The key attribute of social capital is deemed to be social networks that may not always be highly visible and can range from decidedly formal (such as members sitting on a local neighbourhood committee) to distinctly informal (such as a group of parents who exchange pleasantries at the local school). Robert Putnam, who is well known for his more recent work on social capital (Putnam 1995; Putnam & Feldstein 2003) encourages his readers not to be dismissive of even very casual forms of social connection, quoting experimental evidence that suggests even a nod to a person you have never met before increases the chances that they will come to your assistance if you have a heart attack (Putnam, 2001)

Social capital is an abstraction that can be difficult to accurately define and measure. Consequently understandings vary between authors – even within the same discipline. It can be broadly summarised as the networks and connections that exist between individuals and that those networks and connections are associated with the enhanced functioning of communities. The importance of the *capital* element of social capital should not be underestimated. The presence of social capital is presumed to yield some form of dividend that can be built up or depleted over time.

Having said this, as with other forms of capital, social capital is not always beneficial and can be put to destructive ends. A group of boys who decide to pick on a loner at school for example, may be assisted in their tormenting by the

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confidence they have acquired from the social capital that exists within their friendship group. In this example social capital is providing no broad social benefits and can therefore be described as a 'club good' rather than a social good (Portes 1998) with a resultant outcome that is broadly socially disadvantageous. One of the most inclusive of applied frameworks for identifying social capital was developed by Blaxter et al. (2001) for the UK Health Development Agency. Blaxter et al. suggest five primary dimensions of social capital as can be seen in Figure 2, below. The first dimension is participation, social engagement and commitment, which refers to levels of engagement with local groups, clubs and events, and describes an individual's loyalty to these organisations and the frequency with which they attend them. The second element, control and self-efficacy, refers to the levels of power and influence a community may feel they have to address issues in their lives such as their local environment. Perception of community level structures and characteristics relates to how a household may perceive their community; the people within it, the natural environment and the local services they receive. It also includes individual's enjoyment of living in an area and any anxieties they might have around their physical and natural environment. Social interaction, social networks and social support represent how much contact there is between family, friends and neighbours and the quality of this contact. It also relates to the level of support and care that exists between individuals in both private and public networks. The fifth element, trust, reciprocity and norms denotes the trust individuals have in their social contacts (both neighbours and the service providers they utilise) and their perception of a joint partnership where individuals and those around them are working in unison with shared values.
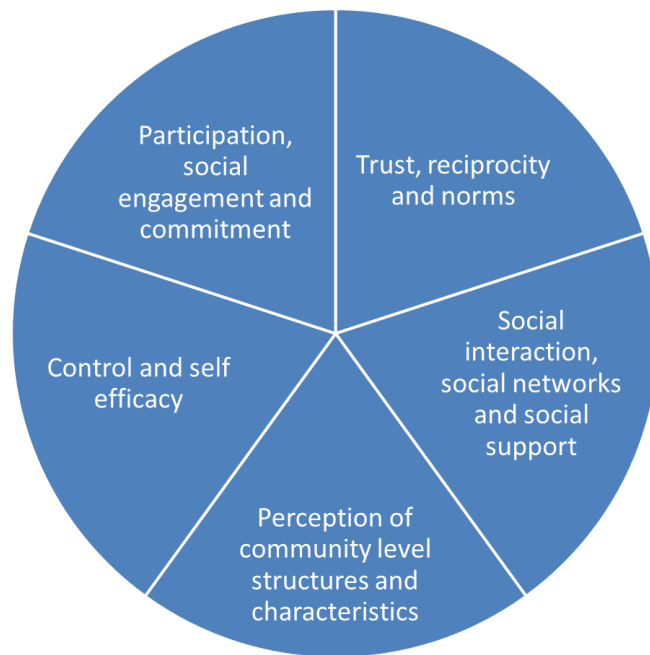
Figure 2: Five primary dimensions of social capital (Blaxter et al. 2001)

While tangible elements of people's lifestyles, homes and communities are readily analysed for the impact they may have on energy-related practices (such as insulation levels (Jones et al. 2013) and feedback on energy consumption (Darby 2010)), more abstract dimensions are often overlooked within research into sustainable livelihoods. There are pockets of literature that have investigated the role that social bonds may play in sustainable living and in particular the way that social capital has the potential to lower the cost of cooperation within communities. McMichael (2007) investigates the literature documenting links between energy consumption and social capital in order to determine the utility of any theoretical and empirical relationship. While McMichael concludes that enhanced social capital could be utilised for programmes on energy efficiency, she argues that more robust empirical research is necessary. Some studies have claimed that increased social capital makes cooperation in collective endeavours more attractive and can make residents more civically minded (Field 2003; Wakefield et al. 2007) and less likely to participate in activities that have a negative impact for the community at large, such as resource degradation (Pretty & Ward 2001).

Social capital is one function of what is known as the 'core economy'. This can be defined as the often uncommodified, unpriced, unpaid and routinely ignored human assets and relationships that assist in the production and distribution of human resources (A Coote et al. 2008). A move to foster social capital and a commitment to more relational thinking (that is, focusing on society and its problems from the viewpoint of relationships rather than from individuals and materialism) may be one way of shifting the current societal preoccupation with the accumulation of wealth and material objects to more recognition of the importance of the human resources that comprise and sustain social life. Rebuilding a sense of shared society and common purpose that at its heart has a commitment towards genuine low-carbon lifestyles and increased well-being could also help to redirect focus away from the path of ever-increasing consumption; enabling a form of prosperity that doesn't depend on economic growth and material concerns (Tim Jackson 2009). The idea of the core economy and the potential role it has to play in a policy strategy designed to foster low carbon lifestyles will be further discussed in Chapter Seven.

The following section will take from the interviews illustrations of different levels of access to social capital in the daily life of the participants before presenting instances where social capital is reported as having diminished; all the time considering the case that increased levels of social capital may have a role to play in reducing the demand for energy from everyday lifestyles.

6.2.1 Locating social capital in everyday lives

Without any social capital individuals would be living autonomous, isolated lives. As it is, the meanings that individuals give their practices and the way in which households organise and shape their behaviour are embedded within the social environment in which they are situated. The following two sections, using extracts from the interviews, examine the concept of social capital in order to understand how its constituent parts are relevant in the interviewees' day-to-day lives. Initially, there will be an exploration of the way in which the households are enmeshed in various social networks outside of the household and how these relationships can influence the way in which energy-related practices are carried out. After this, there is an exploration of the perception of quality of

these networks and how communities of practice can develop around certain behaviours.

6.2.1.1 Social interactions, networks and social support

Evidence from the interviews suggested that there were social elements to people's practices and the meanings they attached to them that could not be attributed solely to the social processes *within* a household. Rather, the form and frequency of relations outside of the home appeared to be bound up in the meanings and methods of certain energy practices. This section provides examples of the instances when households referred to different forms of external social influence on their energy practices. As explained previously, a key dynamic to the concept of social capital is the connections between individuals that come about through social interactions. One effect of social interaction is the process of social learning. Social learning can be defined as 'a change in understanding that goes beyond the individual to become situated within wider social units or communities of practice through social interactions between actors within social networks' (Reed et al. 2010). The networks with which we engage have the power to influence our attitudes and actions. Within the field of health research, for example, it has been suggested that social capital has the potential to influence social control over negative health behaviours (Poortinga 2006). There has been limited research, within the environmental behaviour literature, that has studied the impact of interactions within social networks (such as the neighbourhood and communities in which people live) and the pro-environmental behaviour of residents (Vining & Ebreo 2002). Policy has tended to focus on the government *supply* of information to influence practices (whether relating to alcohol consumption or tax evasion) rather than any form of social learning between residents within a social network where information is received via social interaction and experience. Diffusion theory has been adopted across a number of disciplines in order to illuminate the process by which new ideas, practices, products and services spread throughout a social system (Gatignon & Robertson 1985). A particular focus of diffusion theory is the way in which interpersonal communication and nonverbal observations can impact on the pace of diffusion (Rogers 1983) and

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how this varies within different contexts. To take an example, the extract from Malcolm below shows the impact of social diffusion from the action of one individual. To clarify, upon speaking to two other households, prior to this interview, the subject of a neighbour's expensive new heater had been mentioned and after speaking to Malcolm, the significance of this became clear. Many of the houses in the community were fitted with either night storage heaters or still maintained the original heating source at the time of build, which for many properties was electric radiant ceiling heat. A number of households spoke about their experiences with night storage heaters and a neighbour (Malcolm) who had invested in a new and different form of heating had generated interest in the community.

> Malcolm: 'It [the old night storage heater] did the job it was meant to do. We did have a night storage heater there [points] and one in the front room, but that famous heater there [points to new heater], that cost us 900 pound. This the one everyone talks about.'

> **Malcolm, 60+**

Such timely and relevant information, from a neighbour who was well liked in the area is likely to have greater impact than a national campaign around boiler upgrades for example. Information represents one aspect of social diffusion, but as the extract below reveals, practices can just as easily be spread through the local circulation of knowledge.

> Malcolm: 'we always do (switch off appliances at the plug) because I don't like the thought of it catching on fire too. A relation of Sharon's, up the line here, nearly three years ago now nearly lost her house through a TV catching alight on standby and that's how we got in the habit of it'

> **Malcolm, 60+**

Hearing of and witnessing the potential safely implications of leaving appliances on standby had established a practice of turning appliances off at the plug. Hearing of or witnessing a local experience may have more significance than, for example, hearing about the same event on the news. Similarly, the source of

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information was also significant, in the text below a message from a knowledgeable and trusted social network had resulted in an ingrained practice.

We try and turn everything off that we don't need – that's from my brother who's an energy consultant, who told us to'

Charlie, 30-40

Of course, not everyone has an energy consultant in their family and it is not always that influential neighbours will be undertaking low carbon practices. It is also possible that social diffusion may succeed in spreading unsustainable practices in just the same way. It is for this reason that increasing levels of social capital alone is not the answer to the low carbon challenge. If elements of social capital are to be utilised, such as the effects of social diffusion, then there is the need for parallel policy intervention from the top-down to ensure that all elements of practice are attended to, allowing a behaviour to become normal (with regard to sustainable mobility for example, substantially increasing the number and standard of cycle paths in rural and urban locations; increasing competency through subsidised cycle proficiency schemes; and requiring workplaces to encourage and cater for cycling employees). Only then can individuals be expected to adopt, support and endorse pro-environmental behaviours and, with increased levels of social capital it may be possible for social diffusion to assist in the dissemination of new practices, skills and technologies.

Social diffusion of practices is only one result of increased social capital. Increased social interaction can lead to stronger networks of support within a community, which can in turn, help to decrease the cost of undertaking many low carbon practices. Conversely, a *lack* of access to social capital can also form a barrier to the enactment of some forms of environmentally sustainable behaviour. This is demonstrated in the extract below regarding the uptake of loft insulation.

I know the loft could do with insulating, there is something there but it's only that (4 inches) thick. They were going to do it when they came to do the heaters, it was assessed at the same time, and they said it could do

with doing, but I wasn't able to empty the loft, with it being me on my own, I physically couldn't do it.'

Carrie, 30-40

Carrie suggested that there was little in the way of a support network to enable her to take advantage of the free insulation scheme. More abundant social capital for Carrie might have enabled her to have her loft insulated for free. It would be facile to suggest this to be the only missing element between Carrie and an insulated loft. All behaviours are made up of elements too numerous to be able to single out one factor alone. It can be deduced though that a lack of social capital may have acted as a dis-enabling factor in this case.

As explained in the introduction, support networks of social capital do not only exist within communities' of households but can be present between private actors and public bodies. Gittel and Vidal (1998) refer to types of social capital as threefold; bonding, bridging and linking. Bonding refers to the relationships between individuals, bridging the relationships between groups of individuals, and linking the connection between individual and groups to wider-level actors such as the state. Individuals reported a variety of interactions with individuals and organisations outside of the individuals and groups around them. The example below demonstrates the power of linking capital to help shape and cement particular practices,

'Our people (waste and recycling team) are very very good…superb. If anybody ever asks you about the waste people, ours our superb. They are brilliant, I reckon any one of them could have gone in for yesterday's marathon in London and completed it no problem…and if you've got anything in particular that you want to get rid of, they're as good as gold'.

Bob 60+

Bob has developed an association with the waste disposal staff that collect his waste and recycling each week. It is a loose relationship, and he likely only exchanges a few words with them each week but the interactions have helped enable and foster his own set of waste disposal practices. He has utilised this relationship to assist his disposal of particular kinds of waste and it is possible

to see how the social capital, between service providers and members of the community in this instance, has served to reinforce a pro-environmental practice. This extract is particularly salient with reference to the quote below, which showcases a strikingly different set of interactions between a service provider and a member of the general public.

'When there's four of you in the house, you drink a lot of milk and we already had a bin that we filled up and we took [to the recycling centre] ourselves and then I said to the lady, 'is there any chance that we could have two?' 'No, one per household.' 'Ok, so well do they come with lids because generally we'll leave it outside so we can just open the door put it in' and 'no' and so she said, 'well there is a bag but if you don't do it correctly then they won't take it.' And when they come and take it, I have a wander round, because I have time on my hands now, and you see all the stuff that they haven't taken because someone's put it in the wrong place and I just think that they've approached it in the wrong way. Because you'll see this thing in the paper saying we've reached our target of however much being recycled. But if they actually spoke to people and said, well what would work for you and took a step back. [It seems as though] it's about a number for them and that's all'.

Jimmy, 30-40

The contrast here serves to highlight how the social elements of practice can play an integral part in their formation over time. What is evident is the difference in the costs (time and effort for example) that Jimmy and Bob experience in trying to recycle their waste. On the one hand, Bob has repeated interactions with the people who deal with his waste that may predispose him to more cooperative behaviour. Conversely, Jimmy described what he felt was a lack of communication and effective interaction between individuals and service providers. In this particular instance, Jimmy was passionate enough about his waste practices to overcome a lack of support that enhanced social relations may have provided but in other situations, where individuals are not as interested in the environmental implications of their actions, a lack of social support may have affected the outcome of the practice.

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This section has served to highlight how it is that energy-related practices are tied up in the interactions and relationships between individuals and wider institutional structures. The meanings people develop alongside their practices that shape the way they are undertaken do not mature independently of social life but are constructed within it. Within this study, Interpretive Phenomenological Analysis has provided evidence that would suggest that for the sample interviewed the social nature of everyday lives; within households, neighbourhoods, communities and between individuals and service providers, can be seen to have an important impact on the adoption and evolution of everyday, energy-related practices.

6.2.1.2 Networks of trust

The following section develops the exploration of interactions and social networks to investigate the role of trust in developing social capital. Established networks within communities that are built on trusting relationships can be beneficial to both individuals and achieving greater goals; a central idea within social capital theory is that relationships matter and social networks can be a valuable asset (Field 2003). This can be demonstrated with the example of reducing the consumption of natural resources. One part of enabling this may be through less consumption at an individual level and more of what is known as collaborative consumption. Collaborative consumption is the process of consuming resources, skills and time through the shared access to different products or services (Botsman & Rogers 2010). There has been a recent resurgence in the occurrence of collaborative consumption in a large part due to the rapid development and distribution of connected technologies and in particular the rise of online peer communities. From online trading marketplaces such as EBay, to car sharing services and money lending platforms, new forms of consumption are expanding, brought about in part by digital links between individuals. One reason for the success is that technology is able to replicate the trust that is required for such exchanges outside of the digital world. It is likely that this new marketplace will only expand as more individuals gain access to such sites. Alongside this there is also a place for non-digital networks of trust within society which can provide similarly alternative forms of

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consumption. To demonstrate from within the interviews, one participant described how it was he came to acquire some land on which to grow his own vegetables. He explained that he had, prior to his allotment, grown food in his neighbour's garden. The garden belonged to an elderly lady who wasn't able to spend time tending to it and so was happy for Stephan to maintain it and allow them both to benefit from growing food in it. The presence of social capital and the dimensions of trust within it undoubtedly assisted this situation coming into fruition. This form of collaborative consumption represents the diverse processes and networks that can result in practice change. Another example of a form of collaborative consumption within the community is evident below.

> *'Yeah I mean, sometimes her and I will bulk buy stuff and divide it between us. And then we don't have to think about going and getting it for a while as well'*

> *Trudy, 40-50*

Trudy explains how she and a neighbour would benefit from the best deals at the supermarket but avoid ending up with so much that she had to throw it away. This practice is most likely adopted to save money for both individuals without having to store lots of extra products. It potentially reduces the amount of waste that both households dispose of, it over-purchasing is avoided, but chiefly it demonstrates how people are able to organise themselves to perform particular practices in a way that can bring them personal benefit. The nature of the associations between individuals makes the performance of some practices more or less feasible. This idea resonates with the concept of 'communities of practice' (Lave & Wenger 1991; Wenger 1998). Communities of practice are groups of people who 'share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge or expertise…by interacting on an ongoing basis' (Wenger et al. 2002). Communities of practice help to shed light on the social process of learning and how practices are acknowledged, shared and reproduced by others in particular settings. The 'communities of practice' framework has the potential to provide insights into how sustainable practices are forged and maintained. The extract below demonstrates the way in which a participant maintained a local supply of meat through a connection with a local farmer.

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'We get half a pig or lamb from a farmer up the way. He prepares it how we want and we freeze it until we're ready for it. He's a friend of the family and I think we get a good price. It's just nice to know you are eating good food'

Susie, 30-40

Food consumption patterns in the developed world currently exceed the level of sustainability by at least a factor of four, with trends in food demand counteracting improvements in technology (Carlsson-Kanyama 1998). The complexity of measuring the energy consumption of different food choices makes definite claims about what constitutes a sustainable diet hard to make. However, localised and organic food supply chains are increasingly studied for their potential to contribute to rural sustainability and sustainable consumption (Seyfang 2006). If more connections similar to those exhibited by Rosie and Mike existed, patterns of localised food consumption may become more common. While this type of scenario may be less feasible in urban settings, there is still a role for a similar 'community of practice' based around an alternative form of food provision as can be seen in the extract below.

'We had an excellent local butcher in the area we lived in before, who did fish and meat and we definitely spent more than we do now. Before they opened this big Tesco up here, we used to travel into Redruth and go to the market there and there was a lovely lady, who did great fish there, but then this big Tesco opened up and so now we go there. We like to spend as little time as possible shopping.

Timothy, 60+

This comment is interesting as it highlights how at any one time individuals operate within a combination of understandings, procedures, engagements and systems of provision that create particular practices and communities of practitioners. In the instance above, it is possible to see the way that a change in the service provision (the construction of an out-of-town supermarket) can disrupt a practice which was hitherto configured in an entirely different way. Despite a favourable experience of shopping at the local butchers, Tim claims that convenience had moved their shopping practices to the supermarket. A
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localised form of food purchasing had brought with it the co-provision of services (friendship, supporting the local economy, the nutritious provision of food), which were favourable even when there were financial implications of doing so. Tim went on to explain that it was having no need to go into the town (he quoted the decline in quality at the market, shops disappearing) that pushed their shopping practices towards an out of town supermarket. This, firstly, emphasises the suite of factors that can play a part in process of a practice community developing. If this effect had been felt on a wider scale for the butcher then his business would have been affected by the arrival of the new supermarket and may have had implications for its viability. This may then severely impact the feasibly for others to be recruited to community of alternative food consumption and also broken down the one that previously existed.

In another discussion, the practice of car sharing was made possible by the open and cooperative networks within a neighbourhood which gave (mobility) practices a distinctly social element.

> *'It's just nice so that we can go a bit further afield, especially when they (her children) were 10, 11, and 12. Everybody else was going off to the beaches and we can't get to the beaches because we don't have a car and there are no buses going there. So we would go down to Penzance on the train. Although we had good neighbours in Tony and he would often drive us to the beach he had some space. In our back gardens we had smaller fences and so we used to go out and talk to each other or have a BBQ and they were all good neighbours.'*
>
> *Jackie, 40-50*

Jackie was able to live without a car and yet still felt able to make trips to places sometimes inaccessible by public transport thanks to the connections she had made within her local neighbourhood. However, it is important to note that sometimes, more resource intensive practices will circulate, or be formed, within communities, and not all connections and interactions will result in more sustainable ways of living, as demonstrated in the following extract from Jackie in the same conversation.

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'I don't have any good wee banter like I used to. It was good, all the kids got on and we had a 15ft pool. I was on a water meter and they (Tony and family) weren't so we'd get a hose and fill it up that way. We were forever having BBQs'

Jackie, 40-50

Jackie had obtained financial benefit from utilising the bonds in her neighbourhood through the unchecked use of un-metered water. There is clearly no environmental benefit to such a practice and so it is with caution that social capital and communities of practice are presented as a guaranteed way to foster low-carbon, sustainable practices. Rather, the value of 'communities of practice' needs to be carefully considered in relation to a pro-environmental behaviour agenda. The social networks within which an individual is enmeshed *may* be able to assist in spreading and advancing pro-environmental practices but government will have a role to play in ensuring that 'brokered' (Wenger 1998) practices are, wherever possible, those with minimal environmental impact. This will be discussed in greater detail within the following chapter (7.0).

Social capital may also have the potential to lower the costs of engaging in a pro-environmental behaviour. It has been established that behaviour change is more likely when costs of the new behaviour are low (N. Stern 2007) and the dimensions of social capital have the potential to lower these costs. The sense of belonging and inclusion that practice communities and high levels of social capital can provide can both decrease the costs of action (whether financial, time- or effort- based) and increase the private return of doing so (improvements in social life, health, local relations). From seed clubs and car sharing to the solid wall insulation of a whole street – social capital and the values, norms, process and behavioural patterns that encompass it has the potential to facilitate communities in connecting, co-operating and supporting one another in alternative, and potentially more sustainable practices. Importantly, this must happen alongside the promotion of principles of environmental sustainability and the high-level provision and support of in all areas of life, from infrastructure and planning to transport and food policy. Without this, practice communities can, at best, serve no benefit to the case of

sustainable lifestyles and at worst, only serve to foster and cement unsustainable aspects of everyday lives.

6.2.2 Regaining social capital

This research suggests that social capital has a role to play in the challenge of fostering sustainable lifestyles within society. Lin (1999) suggests that if we are able to create communities living in less resource intensive lifestyles than at the present time and rich in social capital then we are increasing the value of both formal and informal human networks and increasing the ability of a community to function effectively. An effectively functioning community has members which are motivated to seek, protect, and improve places that are meaningful to them (Manzo & Perkins 2006) and it is argued here that it is functioning communities that are better placed to deal with and respond to local and national environmental problems. Building levels of social capital within our villages, towns and cities, will alone not solve the energy and climate problems. But strong communities built on trust and cooperation are far better equipped to pursue personal and collective needs and aspirations. The example provided by Jimmy of his experience of local recycling services (within section 6.3.1.1) demonstrates how an effort by government to connect individuals to local service providers (and ensuring that a consumer focus is at the heart of service provision) could serve to increase the levels of social capital within a community. This in turn has the potential to create connected citizens who are more disposed and better able to engage in pro-environmental practices. New forms of localism, supported by the state, might help communities build stronger networks and help retain practices, and the benefits they provide, within a local community. An example of how this may work relates back to Timothy's comments within section 6.3.1.2 where he spoke of the reorganisation of his food practices to an out-of-town supermarket. Government initiatives should attempt to reignite high street shopping and in particular to instigate local, independent and sustainable forms of consumption (for example, removing regulations to allow anyone (feasibly) to trade on the high street, reinvesting in local undercover produce markets which used to be at the heart of towns). Enabling this form of community food, and pursuing community energy and

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community mobility places the individual and the community at the heart of the energy-related practices with which we engage on a daily basis.

The challenge can be visualised as twofold; both raising levels of social capital in society alongside a re-alignment of desires away from excess consumerism and towards values that have been proven to promote happiness and well-being. At the individual level, people are often better off when they cooperate, as exemplified by Carrie talking in section 6.3.1.1 about her experience of trying to access discounted insulation but failing to do so because of the difficulty she had in emptying her loft. Everyday practices, business and social transactions but also pro-environmental practices, can become less costly. At the community level, a focus on bonding individuals, binding communities and bridging the divide between the general public and the institutions that serve and represent them can enable individuals to engage in more collaborative practices.

There is growing interest in the potential for a collaborative economy to become the new economic paradigm following decades of excessive consumerism through capitalism. There has been recent interest in the increased role a form of 'collaborative consumption' may have in society. Botsman and Rogers (2010) present collaborative consumption as an alternative to the almost hyper-consumption of the present day. They define collaborative consumption as involving, for example, redistribution markets, collaborative lifestyles and product service systems. These all represent alternatives to the traditional purchase of goods and services; where sharing, bartering, lending, trading, renting and swapping provide the benefits of ownership but with reduced environmental impact.

Botsman and Rogers acknowledge that, as a species, humans have divided and cooperated for many years, undertaking many daily tasks in packs, and cooperatives. It is only relatively recently that individuals and families have become isolated from each other and began living in a more insular fashion. A collaborative economy has the potential to assist in and be assisted by a greater emphasis on social capital, at whatever scale, maturity or purpose collaborative consumption reaches.

While it is possible to argue that trust, networks and relationships are no longer necessary in a physical sense, with the dawning of the technological age and the ability to reputation-check online, collaborative consumption has the opportunity to strengthen the social fabric of society and move value away from ownership and possessions towards access and experiences. For this concept to become more widespread, the government can play a role in promoting and clarifying the legal rights and responsibilities of businesses participating in the collaborative economy (clarifying the income tax exemptions for those renting out rooms in furnished residential accommodation for example). Innovative government initiatives to provide the infrastructure and networks that promote and facilitate a new sharing economy can help standardise collaborative behaviours. In 2010, £8 million was invested in the London Community Resource Network, a charitable social enterprise, in order to create a re-use network for household items. Alongside the significant carbon savings from such an initiative, the project also boasts the creation of job opportunities and a reduction in the substantial economic costs of unnecessarily sending thousands of tonnes of waste to landfill each year. More renowned, the 'Boris' bikes in London exemplify the changes in behaviour that can occur with changes to standard models of provision.

In the US, research has suggested that there is a cohort aspect to levels of social capital and in particular social trust, with successive cohorts having lower levels of social trust (Putnam 2000). Although this research was US based, similar findings could well be true for the UK with serious implications for the relations between citizens and between citizens and the state. Such a finding would have implications for public policy-making in many areas, including the environment. Good relations between the state and communities can likely assist in generating effective collaborations that can enable outcomes sought-after by government, whether related to health, education or the environment.

6.3   Conclusion

The social dynamics and framing of energy practices within a household, and the networks of social interactions that individuals engage with outside of the home, are increasingly recognised as important aspects of our energy-rich

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lifestyles. Little research has examined the energy-related lifestyle components that are forged and maintained within the privacy of households. This chapter has investigated the way in which both those who cohabit the private domestic spaces in which energy practices are enacted and those outside of the household with whom people are enmeshed in various forms of social networks of influence or exchange play an important role in the everyday energy consumption of a household. The analysis began by highlighting the social make-up of households and the ways in which energy practices were considered differently depending on whether they were framed as environmental or financial. This led into an investigation into the role of those individuals external to a household yet engaged in the household's social network and the role they played in influencing the energy practices of a household. This led to a focus on social capital and the potential role it may play in influencing sustainable practices. It was suggested that, in communities where a certain degree of environmental principles are present, social capital may afford individuals the opportunities to engage with sustainable and low carbon practices that otherwise may be impractical. In this way, social capital can be compared to the process by which poorer and disadvantaged individuals use strong social bonds and social capital to increase the opportunities available to them when other forms of capital are lacking (Edin & Lein 1997). From this conclusion the chapter looked, more specifically, at the role of communities of practice. It was suggested that examining communities of practices offers insights into the way pro-environmental practices are forged and maintained and offers new ways of thinking around efforts to encourage the spread of environmentally and socially desirable practices.

Overall, the chapter argues for an enhanced understanding of the role social interactions both within the domestic space and external to it play in constructing, maintaining, reinventing and disbanding particular practices and the ways in which enhanced knowledge of these processes may be useful to the challenge of creating sustainable lifestyles. Chapter Seven, the policy discussion, expands on this debate and considers how a policy approach that includes these dimensions may look. It will also develop and analyse the findings of the previous two empirical chapters in light of both current and future energy policy.

7 People and policy

Research is increasingly suggesting that the happiness and well-being of the members of a society is, after a certain point, unconnected to increases in personal wealth and instead related to an extensive number of other issues including trust, security, freedom, work, democracy and civil society (Wiking 2014). Energy policy-making is traditionally unrelated to happiness and well-being. That is, it has traditionally not been something that those designing energy policy have seen as part of their remit. Rather, the need to curb our rising consumption of energy is related, in a policy framework, to the need for a reduction in emissions and the long term environmental implications of not achieving this. This policy chapter considers the results compiled in the previous three chapters and examines the policy implications thereof. While much of the literature into pro-environmental behaviour focuses on specific behaviours (such as recycling, car use or showering for example), the endeavour within this study was to draw out the content and nature of lived experiences in relation to all aspects of energy use. This involved focusing within the interviews on people's perceptions of their experiences, based on the notion that much human behaviour is driven by what people perceive to be real. In light of this, the policy discussion, unlike many within the field of pro-environmental behaviour literature, is not a place to narrowly define a policy solution to a distinct and particular behavioural problem. Rather, after the focus of the empirical chapters, this policy discussion takes the opportunity to explore what the gathered evidence tells us about the way in which government should tackle behaviour and practices in a general sense before elaborating on how such an approach would look within specific behavioural fields. Specifically, the chapter suggests that demand reduction policy-making should focus on achieving societal gains alongside environmental gains and in doing so, challenge conventional wisdom on the prospect of low carbon lifestyles. The chapter proposes a policy approach that explicitly links practices to the everyday experiences of individuals as an alternate manner in which to address the energy demand challenge.

The chapter initially considers the role of policy in the governance of the energy system, with particular reference to the current policy priorities at the demand-side. Following this, a new approach to policy-making is put forward, focused on the everyday experience of the individual. The results from the empirical chapters of the thesis are utilised to explain how this form of experiential policy-making is better suited to dealing with the engrained behaviours and practices of individuals. The chapter then progresses to explain how efforts to value and strengthen the 'core economy' within society could be complementary to endeavours to engender low carbon practices. The chapter concludes with examples of how experiential policy-making could work in practice, within the fields of transport and food policy.

7.1 People and behaviour: the need for policy

The fallout of the 2008 global economic crisis left the UK with a sluggish economy, with only small signs of recovery evident six years later. This extended period of economic inertia has put strain on many sections of society as unemployment rates have risen alongside a reduction in the capacity to address social and economic problems. This sits against a backdrop of some ongoing and escalating social and environmental problems, from concerns around the ageing population (Caley & Sidhu 2010) to the climate challenge (CCC 2008), a potential looming obesity epidemic (Vlassopoulos et al. 2014) and the implications of high and rising levels of inequality throughout society (Cribb et al. 2013). Problems such as these exemplify the ongoing need for public policy intervention and serious consideration of the potential overlaps between energy, food and health policy.

7.2 Policy-making for energy demand reduction

Policy-making is a function by which the government attempts to deliver certain objectives. It is an integral aspect of governance and fundamental to the lives of individuals and the effective functioning of society at large. From an energy perspective, the increasing ecological, societal and economic threat of climate change requires on-going policy intervention to ensure the sustainable,

affordable and secure provision of energy. It is widely recognised that the UK requires new forms of energy, energy efficiency technologies and changed patterns of consumption to enable the necessary transition to a low carbon economy (CCC 2010; DECC 2012b; HM Government 2009). While sections of society still remain uncertain about the threat climate change poses, all three major UK political parties support some form of action addressing the current UK energy system. Rather, uncertainty at the governmental level is related to the optimum way in which to ensure a sustainable, affordable and secure energy future. As acknowledged in Chapter Two, there have been attempts by government to tackle the UK's growing demand for energy intensive products and services, with policies in this area primarily focused on the more efficient use of energy. Despite these efforts there is doubt as to the extent to which the gains from efficiency improvements can be relied upon to deliver significant reductions in carbon emissions. The following section proposes two primary reasons why the current policy process for tackling the rising demand for energy is failing to deliver the desired outcomes to society and the environment: an overemphasis on traditional economics and a unilateral approach to policy-making.

7.2.1 Traditional policy-making within the energy sector

Within energy policy-making, the priority of the government is to meet the energy 'trilemma' of clean, secure, and affordable energy. However, the all-pervasive nature of energy means that it is very difficult to capture all of the necessary components in achieving this goal within the umbrella of one or two energy-specific policies. It is clear, for example, that the policies currently in operation and aimed at tackling consumer behaviour (such as the Green Deal and ECO) have little impact knock-on impact on other energy-related behaviours and practices with which individuals engage. One means of assessing the impact (both positive and negative) of a policy prior to its implementation is through the use of the Impact Assessment framework. An Impact Assessment is the process by which a solution for achieving an objective is put forward alongside the costs, benefits and proposed risks the solution may have on the public, private or third sector, the environment and

wider society (HM Government 2011a). In theory, option assessments such as these are crucial to ensure government interventions are fully informed and based on robust evidence. However, impact assessments have recently been criticized for often containing crucial weaknesses, with a recent review of nearly 200 impact assessments judging 44 per cent not fit for purpose (Regulatory Policy Committee 2011). Similarly, the National Audit Office (NAO) has highlighted a lack of consistency in qualitative analysis and an inadequate development of options against which to judge a preferred course of action (NAO 2011). In some cases, Impact Assessments have failed to take account of policy commitments in other areas. For example, in 2010, the High Court ruled that inadequate consideration had been given to the Government's own climate change policies when consent was given to the proposed third runway at Heathrow (NAO, 2011). Essentially, most Impact Assessments and other forms of appraisal (such as cost-benefit analysis) prioritise the economic costs and benefits of a proposal, with many broader social and environmental impacts (which may not have ready economic values) being left understated.

As the UK emerges from a recession, economic growth is highly sought after by a government attempting to deliver economic stability. Although economic stability itself is understandably necessary, it has been noted that the importance of GDP growth is lessened when the majority of the population have standards of living much higher than the provision of basic needs (Tim Jackson 2009). Although there are mixed opinions on the feasibility and desirability of a no-growth society, it is acknowledged that a failure of a purely economic approach to policy-making is the lack of regard it gives to wider social and environmental outcomes (Steed 2013). Within energy policy more specifically, one of the most significant market failures is caused by the negative externalities that arise from the production and consumption of energy.

Another aspect of the current energy policy process that may be detrimental to the outcome of interventions is the largely top-down, or unilateral application model that prevails. To put this in context, in many instances it is advantageous for governments to set agendas and deliver policies that require little or no involvement from citizens. There are many policy areas that are too complex and/or inaccessible for the majority of citizens and are thus best dealt with by

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government. However, top-down, government-led policy-making may not be able to deliver solutions to the entirety of social, economic and environmental failures within society and in this is evident on the field of energy and environmental policy (in particular that involving the behaviour and practices of individuals). As Edgar Cahn suggested in a speech to the RSA (Royal Society for the encouragement of Arts, Manufactures and Commerce) in 2011, solutions to social problems are more complex than many deliverables.

> *'It is possible to deliver pizza and packages, but you [the government] can't deliver the solutions to social problems'*

> (Cahn 2011)

This may be equally true when we think of the challenges we face in the areas of energy and the environment. Current policies are unilateral, delivered from the government based on limited feedback from the individuals the policies are targeting. Fields of policy-making are kept very separate with limited crossover within government departments. The figure below conceptualises this unilateral form of policy-making that prevails.
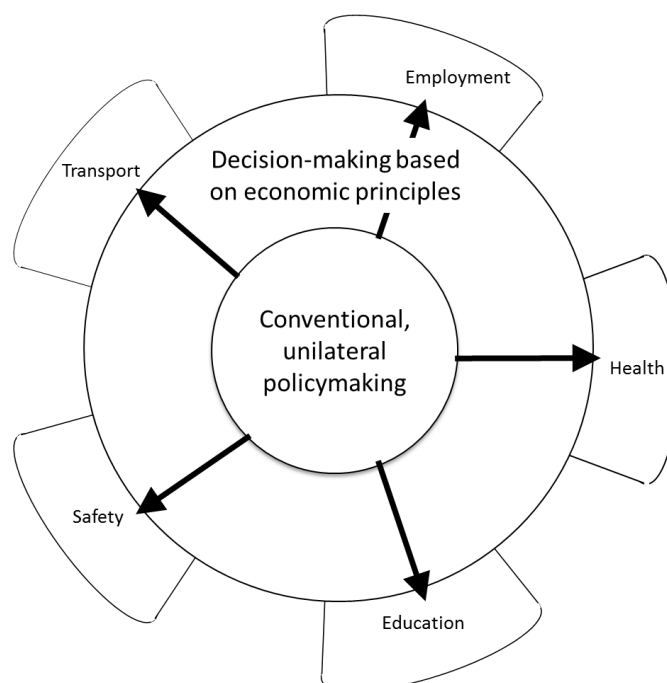
Figure 3: Unilateral policy-making

Source: Author's own

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The figure conveys the unilateral, economically appraised method of policy-making that is customary within many government departments. This chapter argues that one cause behind the failure to drive forward pro-environmental behaviours is related to the fact that policies addressing large scale behaviour and practice change have been swept into the very traditional stream of policy-making described above; discrete, unilateral and economic-focused. With the literature within Chapter Two suggesting that individual behaviour is highly complex, impacted by a range of different influences and subject to change under various conditions, it raises questions as to the value of this form of policy-making within this particular field. Moreover, policy-making aimed directly at changing behaviour can be undervalued by governments attempting to please an electorate. Constructing and implementing policy will always be easier when the benefits of an intervention are visible to both policymakers and the general public. Increasing taxes on cigarettes, outlawing smoking in public places and setting up free 'quit' initiatives are all (relatively) accepted interventions attempting to reduce the number of individuals smoking. Individuals are largely supportive of such measures because the personal and social benefits of quitting are so widely acknowledged. With regard to environmentally sensitive behaviour, regulation, taxation and coercion are less easily justified by government (and less well-received by the public) partly because of the confusion and disagreement around the costs and benefits of the outcome (i.e. averting climate change). While the evidence and the benefits from quitting smoking are tangible, widely accepted and championed by large sections of the society, the same is not true for lifestyle change to tackle climate change. As was indicated earlier in the chapter, in order to lower the demand for energy it is practical for a certain degree of policy implementation to come directly from government and essentially bypass citizen involvement (such as product regulation and minimum efficiency standards). However, it is argued that the standard unilateral transaction of government policy-making is inadequate for tackling the complex and multi-faceted nature of energy-related behaviours. The social and environmental challenges that societies such as the UK are faced with, and the energy challenge in particular, require a system of governance that does not treat individuals as passive, predictable recipients within a socio-economic system. The change that is required in the coming

decades, with regard to the environmental implications of our lifestyles, requires a level of reciprocity or buy-in that is virtually impossible to engender with economically appraised, top-down, policy-making. The following section sets out a possible alternative to this model and explains, through the use of examples from the data, how it could lead to the uptake of a variety of low-carbon practices.

7.2.2 Experiential policy-making for low carbon lifestyles

The previous section argued that the dominance of traditional policy-making within the field of sustainable behaviour change was inadequate to deal with the nature and scale of change required to reduce the energy demanded from everyday lifestyles. This section explores how a more experiential form of policy-making, that is, one that applies an appreciation of the everyday experiences of individuals, is better suited to tackling the energy intensive practices of individuals. Rather than selling low carbon practices as an environmental good, policy that fosters low carbon living needs to have, at its heart, an appreciation of what individuals experience on a day to day basis.

While there is a lack of current policies that address individual behaviour with regard to energy use, two main instruments exist within the UK, the Green Deal and the Energy Company Obligation (ECO). The Green Deal, as described in the literature review, is a voluntary, money-lending scheme that aims to increase the efficiency of the UK housing stock and is reliant upon household uptake. The Energy Company Obligation is, as the name suggests, an obligatory requirement placed upon energy suppliers to support the installation of energy efficiency measures in low income households and in properties that are harder to treat. The following figures compare how policies can be enacted differently depending on the approach adopted, with a more experiential design contrasting the current design of both the Green Deal and the Energy Company Obligation.

Policy Case Study 1: Green Deal

Policy elements	Current policy design	Experiential policy design
Application process	Multiple home visits, forms	Streamlined application process and one stop shop for information, LA lists of approved builders
Marketing	Cutting energy bills	Warmer, cheaper, more comfortable living
Targeted at	All homes	Households in different stages of life (e.g. moving house, renovating property)
Security	Uncertainty around loan implications	More assurance for inheritors of GD loan
Delivery	Reliant on 'Golden Rule'	Borrowing from local/own bank
Finance	Borrowing at 7 %	Borrowing available from local/own bank or recycled fund at 0 % (or 1-2% at most)

Figure 4: Current and experiential policy-making for the Green Deal

Source: Author's own

Policy Case Study 2: Energy Company Obligation (ECO)

Policy elements	Current policy design	Experiential policy design
Application process	Through energy companies Complicated to find out entitlements, and online calculators only take into account benefits, so even more difficult for those in 'harder to treat' homes	Standalone (unrelated to Green Deal or energy companies) and a one stop shop for information
Marketing	Cutting energy bills	Sold as healthier, more affordable housing
Targeted at	Harder to treat homes	Fuel poor
Delivery	Market delivers outcomes	Local-Authority-linked installers; delivery through retail outlets, and accredited builders
Finance	Cash back available has the potential to drive rebound effect	Tax incentives linking property efficiency with stamp duty payments, for example
Overcoming inertia	Little focus on stimulating uptake	Emphasis on engaging hard-to-reach homes. Attic emptying service if required for example

Figure 5: Current and experiential policy-making for the Energy Company Obligation (ECO)

Source: Author's own

The effectiveness of both the Green Deal and ECO has been discussed at length elsewhere (Rosenow & Eyre 2012). What these tables highlight is the different approaches that can be taken when implementing policies and the

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impact these different approaches have on the individuals they are aimed at. The current policy design opposes many findings evidenced from the interviews. First, both policies rely on individuals investing time and interest in schemes that are primarily offering them financial savings. Although Chapter Six highlighted the normative expectations many households held around the worthiness of thrift and the extent to which saving money was a principle around which negotiations around energy behaviour were held, the Green Deal involves a desire for money-saving to be a driver in activating a new behaviour (investigating and applying for the Green Deal). Chapter Four highlighted the multiple meanings and associations that are bound up in organising the practices with which people engage. While individuals appeared to invest financial logic into their decision making, multiple other meanings shaped the formation of practices that were highly personal and situational and rarely motivated by external reward alone (such as financial savings). With ambiguity around the payback of the Green Deal 'loans' coupled with a post-recession society and uncertainty on the cost of energy in the future, the Green Deal can understandably appear uninviting for many homeowners. Second, information and marketing on the Green Deal was all administered from the government. Chapter Six extensively explored the nature of social interactions in relation to everyday energy practices and emphasised the importance of the form and frequency of relations outside of the home in configuring energy practices. It was suggested that more meaningful networks between private actors and public bodies could reduce the personal (non-monetary) costs associated with undertaking a new practice. The Green Deal may have therefore benefitted from being run with greater links to local authorities and established builders and through a one-stop-shop (where individuals could speak face-to-face with another, in a local setting). Without such modifications as these, the deterrents that exist for schemes such as the Green Deal and ECO appear to outweigh their appeal. Polices that integrate well with the underlying systems (people, practices and infrastructure) that exist in society are far more likely to work efficiently and effectively because there is less 'engineering' of behaviour and practices required.

It is not only policies aimed at tackling direct energy consumption (such as the Green Deal and ECO) that need to be reconsidered in light of the information

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presented within the empirical chapters. All spheres of policy-making (relating to health, transportation, and rural affairs for example) have the potential to benefit from incorporating knowledge relating to the experience of the individual into the formation of policies.

While conventional policy-making is necessary for dealing with a large proportion of societal needs, minimal success in attempts to shape the practices with which people engage (relating not only to energy practices, but also health practices for example) suggest that alone, this form of policy-making is inadequate in engaging people with change. While the section above described how experiential policy-making would look in relation to two current policies in operation (the Green Deal and ECO), it can also be related to the formulation of health policies.

There are some dimensions to individuals' health that are rarely captured within a traditional stream of policy-making. While the provision of qualified practitioners, adequate facilities and affordable medicine is integral to an effective health system, there are a myriad of other, less tangible dimensions that are as important to the health and well-being of a society (such as food, warmth, exercise, work-life balance and family life). While there is acknowledgement from government of the importance of these 'other' dimensions, there is no policy in place to actively tackle them in favour of the well-being of the individual. This is true in many areas of policy-making. Being employed is not the only factor that constitutes a healthy work life for example and access to food provision does not automatically constitute a healthy diet. The experiences of individuals serve to shape their own, and others, perceptions, beliefs and practices. This in an evolutionary process that (within energy) forms a 'culture' of energy consumption bound up with notions of well-being and prosperity. The data collected for this study has demonstrated the way in which the meanings individual's ascribe to their practices are inextricably linked to other practices (they co-exist), shaped by the presence (and interaction with) others, and are influenced by experiences across time. The figure below attempts to succinctly demonstrate these relationships.

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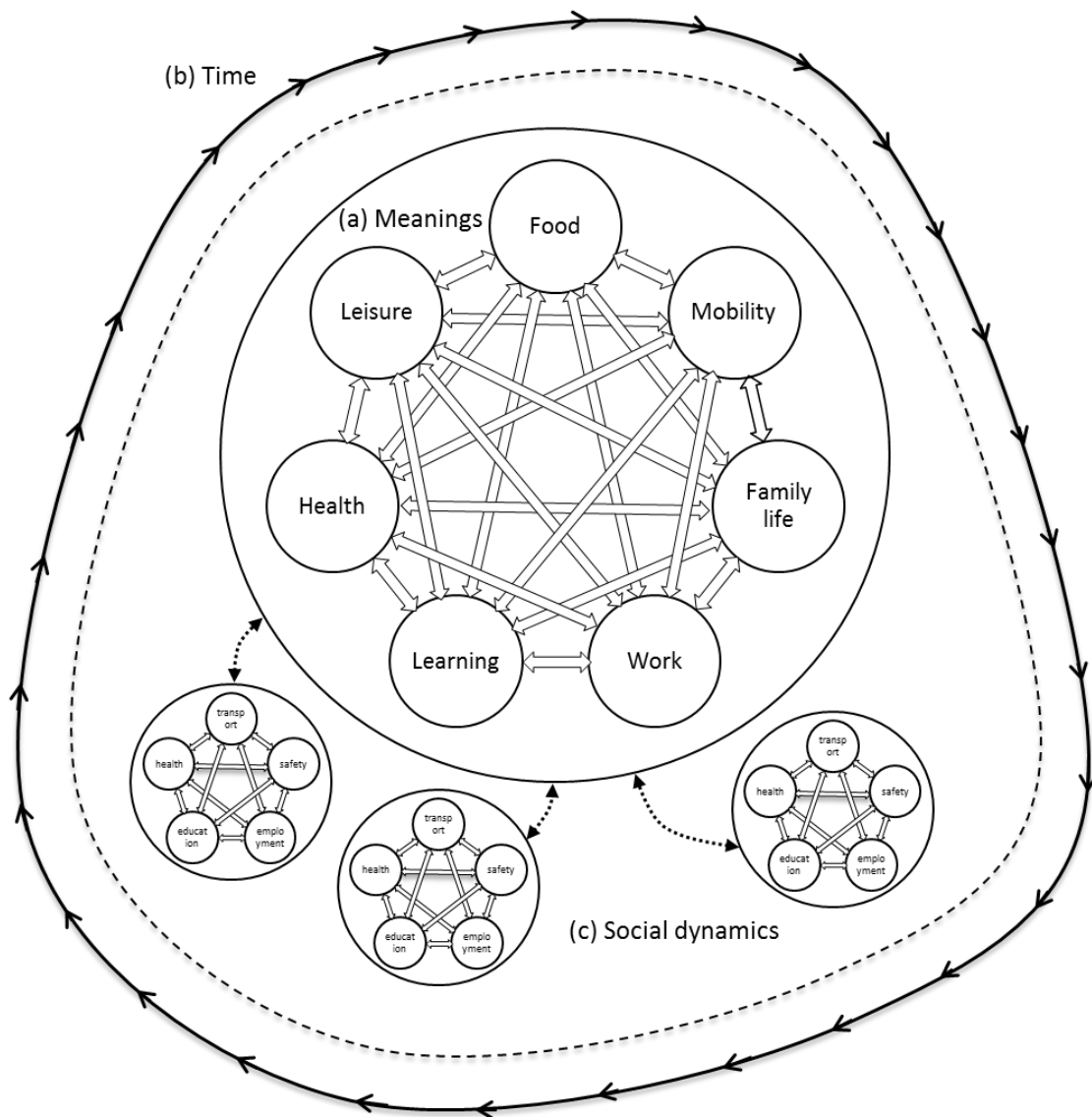
Figure 6: How an individual experiences energy services

Source: Author's own

Policy-making that is sensitive to these elements of practice formation and reconfiguration over time may be better equipped to effectively target people and the elements of practice which resonate with them. Figure 6 demonstrates the importance of valuing the meanings (a) people ascribe their practices and how there is a temporal (b) dimension to these (explored in more detail in 7.2.2.1). The inclusion of social dynamics (c) is reference to the importance of viewing practices not in isolation but with regard to the social connections, relations and interactions of everyday life (detailed in section 7.2.2.2). In particular, the following sections explain how interview discussions around

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different aspects of everyday energy practices indicate the need for a policy approach that is sympathetic and attentive to the experience of the individual.

7.2.2.1 Engraining everyday experiences within policy

The initial research question of the thesis (*What meanings, benefits and associations are bound up in the everyday consumption of energy?*) centred on the meanings people ascribe to their energy practices. Findings suggested that those interviewed interpreted their practices in very personal ways, often reflecting their own values, passions and circumstances. When discussing energy-significant practices, interpretations were often connected to a personal dimension of an individual or couple's lifestyle rather than an environmental or financial motive alone (the relationship between waste and gardening practices, or food procurement practices and work schedules for example). Related to this, research has investigated the guiding principles that direct the behaviour of individuals and in particular the difference between self-enhancement and self-transcendence motives for engaging in activity (S H Schwartz 1994). Self-enhancement goals in this case are said to refer to the ends of power, wealth and authority and are centred on enhancing an individual's self, regardless of other people. Self-transcendence goals are focused on a concern for the welfare and interest of others and related to benevolence and compassion. I would argue, however, that for the purposes of this study, the demarcation between self-enhancement and self-transcendence goals may be problematic. After all, motives that do not exclusively promote the interests of others and the natural world cannot automatically be classified as self-(interested) enhancement. Overwhelmingly, the study participants presented an array of meanings and interpretations of their activities that were not related to the exclusive promotion of self-enhancement goals (power, wealth, authority) and yet neither were they focussed on the welfare of others or the environment. In light of this, a more valuable, and less polarised, separation may lie in the distinction between the intrinsic and extrinsic value gained from a practice.

Extrinsic value refers to that which arises externally, such as financial rewards or punishment avoidance. Intrinsic value, on the other hand, is that which comes with no obvious external reward, but provides internal pleasure to the

participant (the opportunity to explore, learn and actualise potentials for example) (Coon & Mitterer 2010). It has been established that promoting practices on the basis of a return of extrinsic value (as much policy-making does) in order to encourage environmental behaviour can crowd out any altruistic incentives to contribute (Pollitt & Shaorshadze 2011). Moreover, it has been evidenced that the promotion of extrinsic value can have a negative effect on any eudaimonic well-being (derived when individuals perform personally expressive behaviours during meaningful goal pursuits) that would normally be acquired from a particular practice (Bolderdijk et al. 2012).

Conversely, it has been suggested that receiving intrinsic value from a practice cements a more persistent form of engagement and therefore should receive greater emphasis in policy-making (Crompton 2008; De Young 2000). Although financial principles were found to be important in the policing of direct energy behaviour within the social interactional context of the home, when discussing indirect energy practices (such as shopping, travel and leisure pursuits), participants related their engagement to a much wider set of principles, challenging popular interpretations of money and market price as the general accepted measures of value. Intrinsic elements of practice may provide personal benefit to the individual and can involve attending to aspects of an individual's life that impact upon well-being (being active, connecting with others and the environment, fostering a slower pace of life for example). Policy-making should therefore recognise and harness the intrinsic aspects of energy-related behaviour to ensure that policies do not compete against established and personal interpretations of practice. Pro-environmental practices need to, wherever possible, be engineered so that they provide the intrinsic value that their carbon-heavy predecessor had previously been providing. If, for example, a families decision to run two cars was based on their need to get their children safely to school on time, then any public transport/walking/cycling alternative needs to provide equal or beyond levels of safety, efficiency and affordability.

Promoting and facilitating intrinsic values through practice and in particular those aspects that positively impact individuals and societies (healthy eating, exercise, connecting within the community) can be undertaken at the same time as offering a lifestyle with a reduced energy demand. Demand reduction energy

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policy that facilitates and supports personal and social goals as by-products presents a different outlook on the challenge of low carbon lifestyles and provides options for a potentially more effective outcome than exclusively promoting extrinsic benefits of the same practice. By this it is meant that instead of solely implementing congestion charges, reducing the road tax on low emission vehicles and setting performance standards to deliver emissions reductions from new vehicles, all of which is necessary, there should also be a policy focus on those interventions that provide co-benefits that resonate with the values of individuals. In this example that may involve investment in improved cycling infrastructure, a departure from car-centric road building policies and cycling proficiency as a compulsory element of the school curriculum. Exploring the well-being impacts of sustainable lifestyles is an under-explored area of research considering that low carbon lifestyles cannot be defined as sustainable if it serves to have a negative impact on personal well-being (Venhoeven et al. 2013). Clearly not all pro-environmental practices will offer significant gains in internal satisfaction and some pro-environmental options, such as eschewing long-haul flights (and the holidays they bring), may continue to be viewed as detrimental to individual freedom and well-being. More needs to be known about the spectrum of pro-environmental behaviours and their subjective influence on well-being. It is argued that a focus on nurturing and facilitating the intrinsic value that can be gained from low carbon energy practices while at the same time enhancing the core economy (explored in section 7.2.3) has the potential to be able to lower the levels of energy demanded by individuals.

The second research question of the thesis addressed the temporal nature of energy-related practices (*Do energy practices have a temporal dimension to them and if so, how does this impact upon their performance?*). The processes by which particular meanings and associations became bound up with energy-related practices appeared to be influenced by the daily temporal rhythm of the individuals within a household. There were examples of meanings adapting to a shift in resources or arrangements of time. A reduction in working hours and 'holiday time' were both examples of an adjustment to daily rhythms that had consequences for the form of energy practices (such as food procurement and consumption activities). The fixed schedule many people find themselves

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operating within on a daily basis would appear to be a barrier to the formation of new practices and their own associated requirements (time, energy and motivation for example). These findings substantiate those found elsewhere that suggest a cut in the hours worked each week has the potential to lower carbon emissions (or at least facilitate lifestyles that are more conducive to pro-environmental behaviour) (A Coote & Franklin 2013). This thesis argues that it is with concepts such as this that policymakers must engage before the potential for low carbon lifestyles to contribute to the emissions reduction challenge can be realised. This demonstrates how interlinked energy consumption is with a range of practices that intersect a number of policy fields and as such, how difficult it is for single department (namely the Department of Energy and Climate Change) to target and influence them all.

Time, in the form of the stages and cycles of life, was found to be significant to process by which people held meanings and associations around their practices. Different stages or phases of life were associated with particular opportunities and constraints within different activities and obligations. Certain life events were perceived to have disrupted previously stable practices and at times afforded a form of direct reflection upon various 'ways of doing'. Parenthood and retirement were two such examples of markers in life when practices were reconfigured. With both phases, practices were reported as becoming both more and less energy intensive (in the eyes of participants). This nuance necessitates that government interventions should optimise these instances of receptivity to practice modification by targeting individuals and households within particular life stages. It may also be that there need to be attempts to reconnect practices that become disjointed at particular stages of life. In order to reconnect young families with public transportation for example, various aspects of practice formation will need to be addressed (from issues of accessibility and affordability, to individual's preconceptions of what is possible with a baby or young child).

Chapter Five went on to suggest that an individual's formative experiences with energy use may influence the future energy practices of that individual. The chapter suggested that different cohorts in society live through very different social/cultural/political conditions that impact on their on-going practices relating

to the consumption of resources. The older cohorts within the study, for example, appeared to have experienced forms of scarcity (relating to money and food) that led them to a lifelong appreciation for, and conservation of, such resources. If consumptive behaviours learnt at an early age remain relatively unchanged throughout a person's life then there will be a natural shift in practices over time that come about as cohorts age, pass away, and new cohorts form. While the evidence compiled in the rest of the empirical chapters was done so in an attempt to provide policymakers with new tools and approaches in tackling the behaviour and practices of individuals, the policy outcome of this investigation into cohorts is slightly different. It indicates that the 'cohort effect' presents us with a compelling argument to enact policies attempting to change behaviours and practices with more urgency than has so far been seen within the UK. Without action, we will likely see the ongoing process of unsustainable practices (with a negative environmental impact) being engrained within the lives of those in their formative years, making them potentially more difficult to change in the future. This is not to say that younger cohorts are less environmentally aware or conscious, rather that practices based on our current, unsustainable energy system have become normal in the same way that being waste-averse was normal in the early part of the last century.   Continuing with a culture of limitless energy consumption as a normative framework within which people lead their lives will make any future transitions more difficult (and consequently perhaps more costly) than they would be currently.

By initially drawing on policies with deep popular roots, such as those which provide personal, social and environmental goods, there is the potential to capture public imagination, interest, and mobilise corners of society that possibly do not have an innate desire to behave sustainably. Policies, such as those suggested in the remainder of the chapter, must be given long term support by government, demonstrably connecting the positive impact of them to well-being, personal relationships, communities and physical and mental health. If policies can be built around these wider benefits to individuals and society as a whole then they have the potential to attract increased support and have a greater likelihood of withstanding future pressures from successive governments or any future squeeze on public spending.

7.2.2.2 Acknowledging social connections

The third research question of the thesis (*How do the social systems in which lifestyles have become embedded and the social processes, interactions and arrangements within households shape and reinforce patterns of energy consuming practices?*) addressed the way in which significant 'others' in an individual's life, both inside and outside of the domestic sphere, play an important role in the formation of everyday energy practices.

Chapter Six of the thesis highlighted the fundamental role of social dynamics, interactions and relations in everyday lives. The chapter first examined the processes and transactions between individuals in a specific setting (the home) and how these interactions held particular meaning for the individuals within the household. The results highlighted the contrast that can exist between household experience and decision-making on one hand, and the perception of policymakers that this can be altered through the promotion of a particular set of ideals. The chapter emphasised the need for continued efforts by policymakers to move away from narrow interpretations of household behaviour in order to reduce energy consumption from UK households. The second half of the chapter suggested that greater levels of social capital within communities may decrease the cost and increase the benefits of engaging with sustainable practices. What follows will be an exploration of how a focus on increasing levels of social capital within communities could potentially be introduced into a policy strategy for demand reduction.

There has been a substantial amount of research documenting the role of social capital in different aspects of individual's lifestyles but less exploring the inferences of this for public policy-making. In 2000, the report 'Better Together' was released following the Saguaro Seminar at Harvard University, led by eminent social capital theorist Robert Putnam (Putnam & Feldstein 2003).

> *"Social capital has what economists call 'positive externalities'. That is, networks of trust and reciprocity not only benefit those within them, but also those outside them. Consequently, when social capital is depleted, people suffer in clear and measurable ways, and there is a ripple effect beyond a scattering of lonely individuals. Shoring up our stocks of social*

capital, therefore, represents one of the most promising approaches for remedying all sorts of social ills"

Saguaro Seminar (Putnam & Feldstein 2003)*.*

It was suggested in the seminar that increasing levels of social capital within a society is one of the most effective approaches in relieving social ills. I would argue that this may also be true for environmental ills, for enhancing networks, trust and relations within communities could act as a powerful vehicle for bringing about environmental and behavioural changes that will improve the local and wider (social and natural) environment. Interviewed participants reported that it was not just the social dynamics within the home that impacted upon 'normal' energy-related behaviour but also the form and frequency of relations outside the home. Social networks outside the home were particular significant in affecting the shape of practices (the ability to empty a loft or the desire to shop in particular food outlets) in relation to the costs or benefits that came from engaging in a particular practice. For example, where there was a social benefit to come from undertaking a low carbon practice (the feeling of community derived from sharing lifts or the positive social interaction gained from frequenting a local butcher) the practice appeared to more easily embed itself within a routine. This was also true for the networks between private actors and public bodies with the nature of associations (positive or negative) making specific practices more or less feasible to an individual. Enhanced levels of 'linking' social capital, that is the social capital that exists between citizens and people in positions of power, appeared to be particularly useful in ensuring a more effective outcome to those activities that required an effective relationship between citizens/communities and businesses and government (the Green Deal and community energy initiatives for example).

If groups of individuals are more able to forge and sustain particular practices, then there is an imperative to utilise and improve such connections in order to promote *sustainable, low carbon* practices for social ties may just as likely spread unsustainable. Policymakers should therefore attempt to facilitate a shared community identity within villages, towns and cities and wherever possible enable such connections to form alongside sustainable, low carbon practices. Funding should be prioritised for initiatives that assist in lowering the

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demand for energy from a local area and at the same time foster community identity, and forge links between households, families and neighbours. Examples of successful initiatives to achieve both ends can be seen in the various pots of funds awarded to local community groups to start up grassroots energy initiatives. These are often dependent on some form of social capital to begin with but also have the potential to further increase levels of social capital as the collective endeavour of organising such initiatives can improve social cohesion and strengthen networks between individuals (Walton 2012). This format can similarly be applied to initiatives to bring down energy demand, whether related to sustainable mobility, food, or leisure pursuits. If many pro-environmental practices, both within and outside of the household, were either made easier with an effective social dynamic or the practice itself offered benefits to the social relationships of those who partook in them (as appeared to be the case from the interview data collated in Chapter Six) then there is a case for using policy to combine the two wherever possible.

The following section explains in more detail how the core economy, or social operating system upon which many societies function, could play a role in the transition to low carbon lifestyles.

7.2.3 The core economy and low carbon lifestyles

The previous section emphasised the need to situate energy demand reduction within a different framework of policy-making that greater valued the experience of individuals (in particular relating to the process by which practices held particular meanings and how these were influenced by social dynamics and across timescales). This section argues that valuing the economic activity of the

'core economy'[8] will increase the effectiveness of policy interventions based on the above findings. While the monetary economy relates to interactions between the public, private and non-profit sectors, the core economy refers to the systems and relationships within the home, family, neighbourhood, community and civil society, unconnected to the accumulation of wealth and instead motivated by forces such as emotional connection and social responsibility.

The results would suggest that a more experiential form of policy-making that relates to the experience of the individual necessitates an appreciation of the core economy and that policy-making aimed at engaging and eliciting change from society will be more effective and valuable in communities with a strong underlying core economy. A weak core, conversely, would likely demand a higher level of involvement from the government in the form of unilateral policymaking. This section will more explicitly link the benefits to policies fostering low carbon lifestyles that a commitment to the core economy can afford.

It is argued that valuing and nurturing the 'core economy' (Goodwin et al. 2009) positively impacts on the ability of a society to develop low carbon services, institutions and practices that are in line with a future based on a lower demand for energy. The resources of the core economy are embedded in the lives of individuals (time, wisdom, experience, energy, knowledge, skills) and in the relationships among them (love, empathy, responsibility, care, reciprocity, teaching and learning) (Anna Coote & Franklin 2010). A country with a strong

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[8] The 'core economy' was a term first coined by environmental economist Neva Goodwin, although it has clear connections to previous work on 'co-production' (Ostrom 1996).

functional underlying core economy would be considered to have residents and politicians who value relationships and mutuality, trust, engagement, and equality while a country with an ineffective core economy is more likely to have citizens who are time-poor, suffer from isolation and have low levels of trust, engagement and social infrastructure.

If government fail to appreciate and nurture the core economy it can suffer with problems akin to those suffered by the natural environment, with free-riding and the undervaluation of its worth. As with the environment, it is becoming ever clearer that consideration must be given to the critical nature of the core economy (A Coote et al. 2008). A better connected, supported, more trusting and engaged population is likely to produce a more involved, responsive and receptive electorate which calls for and responds to policy which prioritises the foundations upon which strong livelihoods and heightened well-being function (work-life balance, equality and safe communities for example). However, it does not automatically follow that communities built upon a strong core economy will necessarily adopt less carbon intensive lifestyles than a community with less effective social systems of home, family, neighbourhood and community. Policy activity designed to promote and value and the core economy has to be designed with a particular outcome in mind in order to achieve add-on benefits (such as low carbon practices). Therefore efforts to nurture and value the core economy need to be designed specifically with low carbon lifestyles in mind. Attempts to bring people together and strengthen relationships can be done within a low carbon capacity (initiatives that require collaborative engagement and produce collective outcomes such as those involving local food, local travel options and local energy supply for example).

Moreover, a stronger core economy has the potential to decrease the difficulty, both for policymakers and individuals, of transitioning to low carbon lifestyles. It is more likely, for example, that community energy projects or car-pooling initiatives will flourish in neighbourhoods with strong social connections, high levels of trust and abundant opportunities for social exchange. In this context, strengthening the core economy is a way in which the government can better equip communities with the resources and connections that promote low carbon practices while at the same time improving the everyday experience of the

individuals who live in them. I would argue that acknowledging and attempting to strengthen the core economy represents an understanding of the cultural context in which pro-environmental practices exist, based on the evidence presented in Chapter Six (that social relations are important and can affect the willingness, ability and motivation for engagement).

Any exploration of the literature documenting an understanding of pro-environmental behaviour quickly reveals the complexity of making mainstream practices low carbon across a population accustomed to a limitless supply of energy. There is no silver bullet able to re-form lifestyles as less environmentally destructive. Therefore, like many inroads into facilitating sustainable lifestyles, a value for, and an impetus to grow, the core economy cannot claim to be the solution in its own right, but rather the means through which to create a landscape in which pro-environmental policy is better received.

7.3 Experiential policy-making in practice

This chapter has so far set out a critique of the traditional, unilateral style of policymaking that pervades within the UK before moving on to explain how experiential policy-making (applying an appreciation of the everyday experiences of individuals when designing policy) could offer a renewed approach to the challenge of achieving low carbon lifestyles within UK society. In particular, three elements of practice formation were examined; meanings, time and social dynamics and the implications of these findings for policy-making. The chapter then continued by explaining how a strengthened core economy may be beneficial to the form of policy-making and policies that were suggested in the preceding sections. The following sections take two fields of policy-making (transport and food and the energy practices encompassed within them) and briefly examine the implications of current policy on energy demand from individuals before moving on to consider how a more experiential approach to policy-making in each field could be beneficial to both society and the environment. It should be emphasised that acknowledging individual experience in policy-making is not merely an opportunity for government to 'sell' the co-benefits of a particular practices. The benefits of many practices (cycling,

eating well and giving up smoking) are well established and accepted so there will be little benefit in solely marketing cycling, for example, on the back of it being good for your health (with an add-on bonus that it may reduce carbon emissions). Rather, the following sections attempt to demonstrate current policy alongside the policy steps that need to be taken in order to actualise these benefits rather than rely on information and positive marketing impelling people to make the right 'choice'.

7.3.1   Transport policy

In order to create a sustainable energy system, the decarbonisation of transport is a policy priority; in particular DECC appears to be focussed on driving down the cost of the mass deployment of fuel cells, the electrification of vehicles and other technological advances in transport (DECC 2013; Friends of the Earth 2012). There is less policy rhetoric around lowering current levels of demand for transportation and near failure to acknowledge any role for behaviour change within the transportation sector. As suggested in Chapter Two, any reluctance to intervene and modify the mobility practices of individuals may be related to the belief that it will be seen as an impingement of freedoms. The following section will therefore explore how a shift in mobility practices can be brought about in a way that avoids connotations of restriction of regulation. Utilising positive by-products, a change in mobility practices has the potential to reduce emissions from the sector as well as improve people's health and well-being. The government has invested heavily in cycling and sustainable travel, with almost £700 million invested through the Local Sustainable Transport Fund, Community Linking Places Fund and Cycle Safety Fund (HM Government 2013a). In 2011 the latest transport white paper, 'Creating Growth, Cutting Carbon', was released. This examined the future of the UK's transport networks in light of the government's desire to create growth in the economy while also tackling climate change (DfT 2011). An additional £114 million was made available in 2013, £77 million of which was allocated to eight cities to deliver long term plans to increase cycling. Interestingly, the report released alongside the fund clearly highlights the economic potential of the growth of cycling in the UK. While the cycling economy in the UK is estimated to be worth around

£2.9bn p.a., the proportion of GDP spent on public cycling infrastructure by the UK Government has been lower than spending in many other countries (Grous 2011). In the 2013 spending review, the government announced a 5.5 per cent real terms increase in the capital provision for transport and infrastructure, with two main outputs of unlocking development and supporting growth (HM Government 2013b). Although the allocation of money for cycling in 2013 was designed to increase cycling in ways that would reduce carbon emissions and improve the health and well-being of residents (HM Government 2013a), the emphasis is evidently on the economic benefits of such an investment and the belief that investing will allow more effective participation in the global economy.

Although the decision to invest this significant amount of money into transport infrastructure was economic in its nature, the derivatives of such an investment are visible to an electorate. Improved cycling facilities will often bring about safer environments for children, improved opportunities for a healthy lifestyle and increased accessibility in cities and towns. Although the carbon benefits of such an investment were not monetised, the policy could have just as easily been billed as a climate policy and in doing so, may have assisted in shifting perceptions around government behaviour with the realm of energy and climate policy. Policies that resonate with the positive meanings and associations that individuals attach to their practices are more likely to be supported than those that do not.

As well as focusing on the nature of government policy-making, policies developing sustainable transportation must consider the opportunities, constraints, values and meanings individuals prescribe to their practices. By-products from transport polices can be felt in the fields of health and community development in particular, and a comprehensive strategy designed to reconfigure mobility practices has the potential to significantly improve many of the health challenges that the UK is currently facing. Physical activity, such as that that can be fostered with a restructured network of cycle and pedestrian routes and redesigned city centres can significantly reduce the risk of many chronic ailments including coronary heart disease and obesity (Department of Health 2011). Exercise has a similar number of benefits to mental health, which, considering estimates that depression and depression related illness will

become the greatest source of ill-health by 2020 (World Health Organisation 2003), could be of significant value to UK wellbeing. A wide range of factors are believed to be important to our health, such as the social circumstances in which we live; our networks of relationships with other humans; and our interactions with the built environment, nature and the planet (Stott 2006). Furthermore, there is evidence to suggest that the presence of an environmental identity is limited by the extent to which people are able to have a range of experiences in the natural environment (Clayton 2012). So green transport planning and green infrastructure in general may encourage individuals to spend more time in their local environment and be more inclined to invest time in protecting it. Energy policy needs to strategize for the needs of society, the economy and the environment and in particular focus on the way in which it is possible to protect the natural environment, grow the economy and reconnect people and nature. Energy and climate benefits aside, there is growing evidence of the health and other benefits of connecting people and nature in their everyday lives (Alcock et al. 2013). The example above serves to demonstrate the way energy policy can reframe its approach transport policy-making to highlight and provide for potential positive by-products. Addressing climate and energy issues with a focus on those things that are valued most in the managing of everyday life (the potential for reduced congestion, faster journeys reduced pollution and increased personal health) may significantly impact on the involvement from individuals. Highlighting and facilitating the additional benefits to low carbon practice as well as *crucially*, providing the infrastructure and support for such changes to be made is the type of approach necessary to impel a net decrease in the energy consumption of UK citizens.

7.3.2 Food policy

The global food system faces huge challenges, from population increases to competition for land, water and energy and the effects of climate change, deserving of much higher political priority in many countries if dire consequences are to be avoided (Foresight 2011). Within the Natural Environment White Paper of 2011 there was a pledge to combine insights from government, industry and environmental groups to reconcile how goals of

improving the environment and increasing food production could be achieved (HM Government 2011b). An outcome of this paper was the Green Food Project, which aimed to 'create a platform for a more strategic approach to food policy across all sectors' (DEFRA 2012). On consumption patterns and the role of different sections of society, The Green Food Project concluded that a more sophisticated debate was needed to address, amongst other things, the potential for behaviour change in the food system. The only indication of any significant changes to the food consumption behaviour of individuals in recent years has been the slow momentum building within the local food movement. The choices made around food in the UK have significant implications on local and global food supply chains. It has been estimated that a simple behavioural change, such as eating slightly less meat and dairy and slightly more plant foods is the single most useful shift in behaviour that could assist in the reduction of food-related greenhouse gas emissions (Audsley et al. 2009). Despite the food industry accounting for a significant proportion of the UK's overall greenhouse gas emissions, there has been little policy implementation designed to change the habits of consumers and UK citizens have become accustomed to the availability of relatively cheap, varied and plentiful food.

The food system is complex and highly interconnected. Sustainable food is often equated with local food, with the distance a food product travels ('food miles') to its final destination considered a particularly negative aspect of much food consumption. However, the picture is actually far more complex and a number of other factors (such as the type and seasonality of food, how it is grown, and the mode of transportation used) equate to the overall sustainability of a product (Seyfang 2006). In general, eating food that is seasonal and less processed is likely to be less damaging to the environment than otherwise. The current system of food purchasing in the UK appears to be dominated around supermarkets, and according to the interviews, this is related to issues of price, convenience and accessibility. The presence of environmental concern appeared to be superseded by the ease and competitive prices of large supermarket chains. This is corroborated at a national scale with the main supermarkets taking an 85 per cent market share of food and non-alcoholic drinks (DEFRA/ONS 2013). Within supermarkets, while there has been small

growth in the market share of organically grown and fairly traded products, their share remains small in absolute terms (Willer & Kilcher 2012).

While you could argue that such dominance is a signal that supermarkets are matching consumer needs, you could also contend that supermarkets and purchasing practices have become locked-in *because* of the dominance of this incumbent system of food supply. New food outlets may find it hard to overcome the existing loyalties to supermarkets and equal their competitive prices. However, evidence suggests that there are social gains to come from more individuals purchasing local, sustainably produced food (such as the bolstering of rural economies, supporting farmer livelihoods and improved public health (Simms et al. 2005)) and while it is simply not the case of 'local-good' and 'global-bad' when it comes to food and energy consumption, there is evidence that local, organic food providing a diet containing less but higher quality meat and dairy would have positive implications on the environment (Seyfang 2006). The social, health and environmental benefits that could be derived from individuals re-connecting with local, sustainable food indicate clear value in public policy intervention. There were many positive associations revealed within the interviews that were connected to low carbon food practices: a connection to the local environment; supporting the local economy; a more enjoyable process of purchasing, cooking and eating food; the health benefits of doing so. Within the interviews, many participants expressed a desire to engage in alternative food purchasing practices, such as the use of local vegetable lorry traders and farm shops. It was apparent that many considerations fed into the way individuals structured their food practices, extending beyond altruistic or environmental concerns. Interactions with food appeared to have developed over time and encompassed a number of meanings from the practicalities of time, money and family constraints to personal preferences such as those relating to taste, value and quality. In order to address such embedded associations, all elements of the current systems of food provision need to come under review. The government will have a role in building the capacity of local supply chains (which may relate to providing the appropriate infrastructure, business support, skills and training) in order for local outlets to be able to meet an increased demand for their products. Policies should remained focused on achieving a low carbon agricultural system but importantly, must promote and

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facilitate and enhance the positive aspects of doing so for individuals beyond the environmental benefits: the local connection between producers and consumers; personal and social health benefits; and a rebirth of more home cooked meals and their significance as a loci for communication and structuring everyday lives (Reisch et al. 2013).

To demonstrate an applied example, such a policy may revolve around strengthening the local food system and specifically the local distribution of food by local agricultural producers. Community Supported Agriculture (CSA) is a growing social movement that attempts to forge connections between the producers of food and those who consumer it, with the core of CSA production being organic vegetables but also sometimes including meat and poultry, dairy products and cider, honey and flowers (Cone & Myhre 2000). CSA is founded on the idea that communities can and should be active in the production of their own food and from this, the aim is to strengthen regional food systems, foster healthy eating and empower consumers. The concept originated in Europe and Japan but has really gained momentum in the United States. It is modelled on a partnership between local farms, neighbourhood groups and consumers. Within the UK, the popularity of CSA is growing, with around 80 CSA initiatives documented in 2011, providing multiple benefits to thousands of members, their communities, local economies and the environment (Saltmarsh et al. 2011). For the individual, CSA provides the local, affordable, and sustainable provision of food, with associated benefits of exercise, better-connected local communities and the diffusion of skills relating to agriculture. It is currently a niche element of food provision in the UK but based on the accelerating growth rate of CSA schemes in the USA; 200 farms selling products through CSA in 1992 had increased to 12,549 farms in 2007 (United States Department of Agriculture 2009), there is the potential for it to represent a larger share of the food market. Policies designed to empower social institutions such as CSA would represent a shift towards valuing active community membership through market transformation. The launch of the Big Society has been the principle attempt by the current government to put individuals at the heart of the systems they are served by. While the philosophy of the Big Society may be credible, it has failed in delivering the policies that would see these ideas materialise.

Encouragingly, the interview data suggested that there are foundations upon which the government can build, with participants voicing support for alternative forms of food purchasing. Current food procurement practices were often referred to as being undesirable and appeared to be maintained without explicit reflection in values and ideals but rather a form of 'muddling through' everyday life (Halkier 2001). Rather than just encouraging and informing citizens of the benefits of consuming sustainably, efforts should be made to ensure that the correct institutional and societal context exists for individuals to more readily adopt sustainable food practices. For CSA to succeed in the UK there needs to be a shift in power placing the farmers at the heart of the food system, relinquishing some domination from the retailers, where the power has rested in recent years (Marsden et al. 2000). Farmers would need significant guidance on the concept and mechanisms of CSA along with the details of tax incentives and rates release to ensure their involvement is worthwhile. For CSA to start from scratch, industry-endorsed model leases will need to be created. Projects will need start-up funding or a loan system to enable them to grow and skills training required exemplifying good-practice across successful CSA schemes. These are just a small selection of examples of the policy support that would be required to realise a modest change to the current system of food consumption.

Ultimately, the challenges faced within the UK's current food system will be solved by wide-ranging solutions, utilising technologies, investment and different land management practices as well as shifts in behaviour institutions and cultural practices. It may involve a reassessment of the transportation infrastructure available for the transportation of food; the standards on food imports; and a system of internalising any negative environmental costs of agriculture. CSA is a useful way of demonstrating how policy can put the experience and values of individuals at the heart of policy-making. The interviews highlighted the meanings and associations individuals held around different practices. Using the example of food, alternatives to supermarket shopping were associated with good health, supporting the local economy and local workers, valuable in fostering and maintaining social ties and generally increasing levels of social capital in an area. If these are the associations that matter to people and relate to their everyday experiences of energy related practices then a policy initiative to foster a nation-wide programme of CSA

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projects could potentially utilise these meanings in order to develop a corner of food provision that is currently underdeveloped. This alternative model of food provision can be used as a mechanism to achieve a variety of social and environmental goods that are overlooked but current models of consumption. It would allow those individuals interviewed to more easily relate to alternative practices of food consumption, assuming these practices allowed them to retain the meanings behind practices that they relate to on a daily basis.

With strategic co-ordination at a national level and between governmental departments it is possible to implement policies that can reduce the energy intensity of everyday life, but importantly promote the connection between low carbon lifestyles and improved quality of life.

7.3.3 Summary

In choosing examples from food and transport policy, the preceding sections have attempted to stress the way in which energy is so closely interlocked with the practices individuals engage with on a daily basis. There are many more areas of life that impact upon energy consumption that need to be dissected in order to understand how a more effective policy approach, that integrates the actual experiences of the individual into policy-making, could be beneficial to a low carbon lifestyle agenda. There are parallels in our use of energy in all areas, be it directly or indirectly, in that we have a range of relationships with energy use, each posing significant challenges associated with climate change. Re-engagement from consumers with the energy system may be even more difficult than with the food or transport system as new practices may be perceived to have fewer associated benefits. In this case, accepting and financing significant change may be considered as even more of a burden. The responsibility of government toward the affordable provision of energy presents an added challenge that is not currently seen within the transport and food networks which are either very cheap (food) or not always needed (transport). The obligation for the government to be seen to be making the right choices around the energy system by the bill payers is therefore even more important in this area and makes links to well-being and societal goods even more salient.

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Policy needs to prioritise the experiences of individuals foremost but with careful consideration to the needs of the environment while doing so. This will involve providing for, and encouraging, the undertaking of practices which provide personal and environmental payback. Alongside this, an effectively functioning society with a strong core economy is liable to be better equipped, and more amenable, to pursuing alternative practices in their everyday lives. Such policies can prove that an ambition of improved happiness and well-being with reduced human damage to the environment may not be the idealistic vagary that it appears.

7.4   Policy direction

Within policy-making for reducing energy demand, there is a lot of focus on tackling tangible measures that can be undertaken to make households more sustainable. There are persistent endeavours to encourage people to adapt, renew, and adjust elements of their 'things', be these houses, cars or workplaces in order to allow the same behaviour, in more efficient surroundings. This is a plausible strategy, but alone, this approach cannot deliver the lifestyles changes and subsequent emissions reductions that are necessary in order for the UK to meet its 2050 emissions reduction targets. Maintaining the current policy path with regard to individuals, their lifestyles and energy use creates a mask that conceals the extent individuals will need to be engaged in achieving a sustainable future for the UK. This chapter has discussed, in detail, the policy implications of the results presented in the previous three chapters of the thesis. While it is clear that there is no easy way to encourage lifestyles with significantly lower environmental impact, the chapter has presented a new policy approach for the challenge. This approach does not claim to be a radical, quick fix for taking society to a culture very different from the present-day. Instead, it builds upon the idea that steps need to be taken, such as the ones suggested above in the areas of food and transport policy, in *all* of the areas in which individuals are disposed to consuming significant quantities of energy, both directly and indirectly. The most favourable element of this approach is that it is entirely plausible. One of the reasons the recent Behavioural Insights Team interest in nudging gained so much interest was its acknowledgement of the fact

that sustainable lifestyle policies do not have to be controversial and involve a sacrifice to lifestyles or personal freedoms. In fact, this chapter suggests that they can do the opposite, and in fact create a happier, healthier and more prosperous society. The fact that action can be taken that is not controversial and does not restrict freedoms yet *can* act as a proportional response to the climate change challenge needs to be celebrated. These are the actions that could represent the foundations for significant lifestyle changes that would be accompanied by substantial impacts on the CO_2 emissions of individuals.

Policy-making in the field of sustainable consumption and lifestyles is certainly not straightforward and researchers can be guilty of providing little in the way of practical advice on positive steps that can be taken to move the situation forward. This chapter has aimed to demonstrate, using examples from the fields of food and transport policy-making, how positive steps can be taken, immediately, to ensure the long term transition to a sustainable, and importantly prosperous, future.

8 Conclusions

This thesis set out to explore how individuals, within the social context of the household, configure their energy practices over time. Despite a healthy stream of research into pro-environmental behaviour entering energy and environment fields in recent years, the literature review established the need to develop research around some overlooked aspects of lifestyles that may shed light on the complexities of everyday life. That pro-environmental lifestyle change is central to the formation of a low carbon energy system of the future is now uncontested (UKERC 2008). For this contribution to be realised there is a great deal of research attempting to understand how people, and ultimately societies, change their behaviour and practices over time. Sociology, psychology and economics have all contributed to our understanding of different dimensions of the personal, social and contextual circumstances that characterise particular forms of human behaviour (Gatersleben & Vlek 1998; McKenzie-Mohr 2000; Pantzar & Shove 2010; Van Vliet et al. 2005). Despite this, a review of the literature ascertained that key elements of lifestyles were either distinctly overlooked within the literature or had not been given the prominence that they might deserve if a more thorough understanding of lifestyles and practices is sought. In order to address these absent or under attended elements, three original starting points were proposed within the introduction.

First, an overemphasis on individuals in isolation within the research field has limited the applicability of policies based on these findings to the social complexities of everyday life. Second, research into pro-environmental behaviour has been guilty of exploring behaviours at fixed points in time, avoiding considerations of a temporal dimension. The third and final contention upon which the thesis is based relates to the dominant approaches through which data on behaviours and practices is gathered. It is argued that for a true understanding of the experience of the everyday, as lived and perceived by individuals, to come to the fore there must be more approaches within research that focus on the meanings and priorities of individuals based on the behaviours they exhibit. It was from these points of departure that the following three research questions were established:

1. What meanings, benefits and associations are bound up in the everyday consumption of energy?

2. Do energy practices have a temporal dimension to them and if so, how does this impact upon their performance?

3. How do the social systems in which lifestyles have become embedded and the social processes, interactions and arrangements within households shape and reinforce patterns of energy consuming practices?

The remainder of this chapter will discuss the findings of the study as they relate to the research questions above.

8.1   Discovering the nature of practice

The following sections summarise the empirical findings of the study in relation to each research question. The following sections will first explain how each chapter addressed a gap in the literature. Following this the empirical findings will be presented alongside the theoretical implications of the findings. The final subsection considers the way in which policy can utilise such findings, as presented in Chapter Seven.

8.1.1   Valuing the meanings of practice

It was argued within the literature review that while social practice theory lists 'meaning' as an important component of practice formation, the exploration of meaning has, up to now, been distinctly narrow and confined to practices in isolation (e.g. the meanings of cleanliness associated with laundering). The empirical findings therefore attempted to fill this theoretical void by analysing the more extensive meanings and values held around particular practices. The initial research question of the thesis addressed this limitation (*What meanings, benefits and associations are bound up in the everyday consumption of energy?*) and within Chapter Four, the empirical findings relating to the research question were presented.

Within this chapter it was argued that for those sampled, the private return that comes from undertaking a particular practice, or carrying it out in a certain way, is a significant characteristic in the organisation of practices. It was contended that the stories and meanings that are attached to practices and routines are the details that shape an individual's ability, willingness and drive to change elements of their lifestyles. Consequently, understanding the personal value of energy-related practices is crucial to policymakers hoping to reconfigure the order of practices. Four examples were used which explored the importance of the meaning and value in relation to particular practices. These were connectedness to nature, quality comfort and convenience, time, and enjoyment.

Connectedness to nature was established as an important indicator of value for some if the sampled individuals engaging in pro-environmental practices. Where there was an emotional affinity to places and spaces of nature, greater value appeared to be gained in undertaking pro-environmental behaviours. Consequently, those individuals interviewed who appeared to lack a personal association with nature appeared to gain less personal value from undertaking pro-environmental practices. Chapter Four also addressed the implications of personal notions of utility around practices, including *quality, comfort and convenience*. In some instances engagement with pro-environmental practices appeared to be associated with a cost or loss of personal value. This signifies the importance of understanding where individuals gain value in the undertaking of particular practices. Only with this understanding can policymakers ensure that low carbon alternatives offer equal or improved levels of personal benefit. *Time* also appeared to play a part in the private benefits and costs associated with different forms of energy consumption. More specifically, the presence or absence of unplanned time within a daily schedule was influential in dictating the meanings held around a practice. So, for instance, the pleasure derived from undertaking food purchasing practices appeared strongly linked to the temporal rhythm of a day. It was also found that the physical enactment of an environmental practice appeared to assist in the formation of environmental identity, ultimately increasing the personal value for the individual in undertaking the initial practice. It was argued that policymakers need to recognise the significance of time in relation to pro-environmental practices and the obligation

on householders to manage a range of practices throughout a day. Finally, the chapter explored the associations of *enjoyment or pleasure* that were held around energy-related practices and how such associations impacted on any transition to lower carbon lifestyles. Linking back to the value and cost of engagement, it was noted that for many participants, the value of (relatively) high carbon practices was rarely the practice in itself but the valued end state of participation (e.g. the practice of driving delivering the participant to a recreational location). Recognising that engagement in high carbon activity is often connected to its link to other valued practices (such as those related to socialising, leisure activities or family commitments) presents a more nuanced picture of the challenge to moving individuals towards low carbon lifestyles.

Theoretically, Chapter Four shed more light on the meanings and associations that individuals possess in relation to their energy practices and how these are implicated by their experiences, past and present. The chapter also raises questions around the conceptualisation of spill-over among environmental behaviours. A meaning-based approach to spill-over highlights the connections and commonalities between practices and the importance of the wider context in which behaviours take place.

8.1.2 Acknowledging temporal rhythms

A review of the literature highlighted the lack of a temporal dimension to energy practices Although there is considerable dialogue around the need for a 'transition' to a low carbon future, our understanding of energy practices is most commonly located within fixed points in time, with little consideration given to the socio-historical timeframe at which practices are formed or the phases of a lifecycle within which they are undertaken. In response to this, the second of the research questions emerged (*Do energy practices have a temporal dimension to them and if so, how does this impact upon their performance?*), the results of which were presented within Chapter Five.

The chapter claimed that the context within which different cohorts of the sampled participants were born had the potential to influence the future energy practices with which those individuals engage. The chapter expanded on the

concept of an 'energy culture' and the implications of a changing energy culture over time on energy demand trends. The examples of practices relating to food and household energy management were used to demonstrate the extent of the influencing factors that can produce and engrain particular practices. Period effects (the influence or external events or cultural changes) and cohort effects (the influence of opinions and behaviours set by the formative years of a generation) were both considered for their influence on the energy practices of those sampled. Again, food provision and household energy management were used to demonstrate how a form of 'historical consciousness' shaped the energy practices of those who participated in the study. As a largely undeveloped concept within the field of pro-environmental behaviour and energy practices in particular, this chapter sought to show how the composition of a society at one time (that is, the arrangement of cohorts that make up a population) can significantly affect the spread of pro-environmental practices. Although a relatively small sample cannot reveal the extent of such a revelation, it was suggested that the associations of 'normal' levels of energy consumption for the current cohort living out their formative years will have implications for the practices with which these individuals engage in later life. Importantly, it should not be forgotten that it is this generation who will set the policy agenda in years to come.

The second half of Chapter Five explored the influence of the lifecycle on energy-related practices. Within the sample there appeared to be noticeable stages of life in which various opportunities or constraints impacted upon energy-related practices. Retirement and parenthood were chosen to represent two stages of life that presented a unique set of circumstances in which individuals consumed energy. The chapter argued for a greater awareness of the capabilities present at different stages of life which, when coupled with changing meanings of practice, can lead to changes in practice.

Conceptualising the temporal dimension of energy practices provides a more dynamic understanding of current energy lifestyles. Recognising the implications of socio-historical time on energy practices allows progressive policy-making that considers the long term consequences of current policies while a lifecycle approach enables policy initiatives to be specifically directed

and tailored to the contextual situations that individuals find themselves in at different times in their life.

8.1.3   Recognising social dynamics

The final theoretical gap established within the literature review related to our understanding of the socially-negotiated systems of practice. Approaches to behaviour change have tended to have a narrow conceptualisation of the individual that has hitherto dismissed the social organisation of actors. Accordingly, Chapter Six addressed the third of the research question (*How do the social systems in which lifestyles have become embedded and the social processes, interactions and arrangements within households shape and reinforce patterns of energy consuming practices?*) by examining the social dimensions of practice and describing the ways in which interviewees related their own energy use to other individuals, in both the home and the wider community.

The chapter suggested that the energy practices of those sampled were often established within certain normative frameworks and that this framing had an impact on the social dynamics relating to the practice. Shared normative frameworks appeared to exist within many households which helped to define the practices that came to be seen as normal within a group of individuals. Within those sampled, money saving appeared to be a particularly salient normative framework. The chapter then went on to consider the role of social capital as a dimension of the external social dynamics experienced by a household. The form and frequency of social relations external to the home appeared to play a part in influencing practices while the type of interactions, social networks and social support that a household experiences may be important to the diffusion to social practices within a household. While it was acknowledged that increased levels of social capital alone are not going to reconfigure the practices of millions on individuals, alongside policy intervention at other scales social capital may assist in the dissemination of new practices, skills and technologies. It is argued within this chapter that increasing the value of both formal and informal human networks can create better functioning

households and communities that are better placed to respond to local and national problems, whether these are economic, social or environmental.

Chapter Six goes some way in filling the gap in the literature relating to the social configuration of energy-related practices. It has developed an insight into the importance of the social dynamics within the home and relationships outside of the domestic sphere in efforts to manage energy practices. It applied a concept of communities of practice to the empirical findings to assist in aiding understandings around how pro-environmental practices may be forged, maintained and spread.

8.2 Low carbon policy-making: a social or environmental good?

The policy implications of the empirical findings were set out in Chapter Seven. The overarching conclusion within this chapter was that in order for the UK to achieve the potential reductions in carbon emissions that can be realised through a change in energy-related practices, there is a need to rethink the process and form of policy-making undertaken by the government. It is argued that a form of experiential policy-making is required that recognises the importance of an individual's interpretation of their practices, the social world in which practices are formed and the evolutionary nature of practices over time.

It was suggested that this alternative form of policy-making would be more successfully undertaken (in terms of public reception and ease of implementation) alongside efforts to grow the core economy. Growing the core economy will involve an improvement of the conditions that enrich people's lives. Policies need to give individuals the opportunity to not just improve the environment but also improve their own health and well-being and the localities in which they reside. A curative approach to the environment and energy challenge is not possible with regard to the high energy consuming lifestyles that have become commonplace within the UK. The only solution will involve a process whereby individuals are valued, empowered and engaged and the bonds between individuals and communities are strengthened. It is an option that, in the long term, can preserve public expenditure relating to environmental and social ills while at the same time improve the condition of lives of UK

citizens. In this scenario, addressing the behaviour and practices of individuals is no longer daunting task to be avoided but a compelling manifesto for the future.

8.3   Limitations and recommendations for future research

The following section will initially explore the restrictions that have limited the scope and potential application of this research. Following this, the section will consider how future research within this field may be developed in order to enhance our understanding of the synergy between energy and lifestyles and develop strategies to facilitate low energy lifestyles becoming the norm.

A slight limitation to the scope of the study was the size and description of the sampled participants. Despite targeting a large number of households to participate in the study the interviewees were self-selecting and although a range of ages were included, there was a higher than average proportion of older participants. In view of participation being voluntary, it may be suspected that those who signed up to take part in the study would have a higher than average interest in behaving in a pro-environmental manner. This did not appear to be the case or rather it did not appear that the sample was predisposed to consuming less energy. This may have been related to the fact that the research was presented simply as a study of energy consumption practices rather than an 'environmental' or 'conservation' study. The study was designed to be exploratory in nature with the intention of discovering more about the nature of lived experience. Rather than focus on representative data, the study aimed to address the success (or not) of particular policies in a given situation or community, with a particular configuration of actors.

Another limitation of the study was the amount of time that it was possible to spend with each individual or couple interviewed. Attending numerous community events prior to visiting the homes of individuals assisting in the building of trust and rapport between myself, as the interviewer, and those being interviewed but not all of those who participated attended such events on a regular basis, if at all. This meant that some households who had signed up to partake in the study had had limited contact with myself, or any of the steering

committees within each community, prior to the interview. On occasion this led to an interview experience that felt underdeveloped. This was particularly pertinent given that the study was based on individuals exposing the inner details of their perceptions and experiences of energy consumption practices. Time constraints precluded a longitudinal study of the participants, which would have assisted in forging a stronger relationship between researcher and participants and might have been particularly beneficial to the temporal aspect of the behaviour and understandings of how energy-related practices and meaning change over time.

While this thesis has delivered an evidence base of how households, as social units, configure their energy practices over time it has, at the same time, presented a range of areas that warrant further research. First, more empirical studies of this nature are required in order to ascertain whether or not the dimensions of energy consumption practices raised in this thesis are elements worthy of basing energy policy strategy upon. Although the insights appear compelling, these need to be explored in greater depth and breadth prior to the implementation of strategies designed to optimise on such findings. While the meanings of practice and their social and temporal dimensions were the subject of this study, there are undoubtedly further underdeveloped aspects of everyday life that fall outside of traditional research boundaries that can add to the debate around the sustainable transition of lifestyles. Further evidence should be sought on the link between low carbon lifestyles and the health and well-being of individuals and communities for example

This thesis has argued for a genuine transformation in the approach to current conceptualisations of change within the demand side of the energy system. It has proposed that the current preoccupation with nudging, incentives and information does little in the way of transforming the status quo with regard to household energy consumption. The inclination to retain demand reduction policies within the confines of traditional energy policy-making will only serve to restrict the variety of strategies employed and the benefits they can provide. This thesis has acknowledged the political difficulties inherent in addressing behaviour and lifestyles at the scale required and in a manner timely to the challenge of climate change. In doing so, the preceding chapters have

reimagined the challenge of rising energy demand in a way sensitive to the priorities of both households and policymakers of the present day, as well as to the rights of generations to come.

Appendices

Appendix 1: Descriptions of the two community energy projects

Ladock and Grampound Road

The Low Carbon Living project is working to make the rural Mid-Cornwall villages of Ladock and Grampound Road a test bed for achieving sustainable living on a community-wide scale.

On 4 February 2009, the government announced that it was awarding the parish Low Carbon Communities Challenge status and £500,000 to deliver the project. The Challenge has been designed to test delivery options for achieving ambitious cuts in carbon emissions at a community level.

The funding bid and delivery of the project is being led by Community Energy Plus and follows previous work by Transition Ladock and Grampound Road and local residents to create a more sustainable community.

A combination of energy efficiency measures and renewable energy technologies were installed across the community along with a carbon sequestration project which involved planting nut trees to naturally absorb and hold carbon while providing a boost to local food production.

A community managed fund has been be set up to ensure that income made by electricity generating aspects of the scheme remain a rolling resource that will benefit the wider community. Income from feed-in tariffs and anticipated Renewable Heat Incentives from the government will be reinvested in more carbon saving measures so that the benefits of the programme of will far exceed the initial targets of the project.

Illogan Green Ripple

The Illogan Green Ripple project aimed to engage a whole community in Cornwall in the South West of the UK with the benefits of domestic renewable energy installations. The holistic approach combined energy efficiency with waste management and water conservation. Green Ripple set out to raise levels of education and awareness around these environmental issues, instigating behavioural change and providing a lasting legacy for the community.

The Tolvaddon Estate within Illogan Parish was selected as a suitable community. This was because the estate of 430 properties lacked amenities and is made up of poor quality timber-framed housing with poor insulation. The social demographic is predominantly low-income families, many of whom struggle to afford their energy bills or pay for improvements to inadequate heating systems.

As well as the benefit to the individuals of reduced energy bills from the installation of Solar PV, the strength of this project was that a proportion of the

Feed in Tariff has been ring-fenced to form a community legacy fund for Tolvaddon. The scope of the Green Ripple initiative embraced the whole community and included an educational aspect for children and young people, and it is hoped that the positive impact will continue to be felt in years to come.

As well as the benefit to the individuals of reduced energy bills from the installation of Solar PV, the strength of this project was that a proportion of the Feed in Tariff has been ring-fenced to form a community legacy fund for Tolvaddon. The scope of the Green Ripple initiative embraced the whole community and included an educational aspect for children and young people, and it is hoped that the positive impact will continue to be felt in years to come.

- 82 households received advice on reducing energy consumption and improving the efficiency of their homes.
- 7 homes and 1 community shop and fitted with Solar PV.
- 15 homes received other energy saving measures and energy saving gadgets.
- 14 water butts distributed for water conservation.
- 7 properties were air tested to show leakage.

Partners – Illogan Green Ripple was a partnership between Cornwall Council, Community Energy Plus, Illogan Parish Council and Local Volunteer groups. Funding of £171,000 came from the Department of Communities and Local Government, via Cornwall Council. Capital funding for the installation of renewables amounted to £80,000.

Illogan Green Ripple was presented with the award 'Best Domestic Renewable Energy Scheme' at The Cornwall Sustainability Awards in December 2013. The project also received special mention in the 'Best Community Renewable Energy Scheme' category.

Appendix 2: Initial contact letter to households within Tolvaddon

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CORNWALL COUNCIL
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**Green Ripple –
Energy Use Study**

Energy Policy Group
College of Life and
Environmental
Sciences
University of Exeter
Cornwall Campus
Treliever Road
Penryn TR10 9EZ

Dear Sir / Madam

The Green Ripple Project

The Green Ripple is a local, community-based project which aims to reduce spending on energy services (for example transport, electricity and waste) whilst at the same time delivering significant reductions in carbon emissions to meet local and national emissions reduction targets. **The Green Ripple project will provide innovative solutions for sustainability to households in Tolvaddon** and follow up with an analysis of the ways in which different communities respond to the challenges of living sustainably. These solutions will include installing devices such as solar panels, smart energy monitors and solar water heating systems, all of which are completely free. The only requirement is that households participate in an energy use study, which aims to explore how routines and habits may change with these sustainable solutions and also how behaviour can affect the success of their implementation.

The energy use study

From those households in Tolvaddon that are selected to take part, the Green Ripple will study energy use, focussing on direct energy use (electricity and gas for space and water heating, lighting and appliances) as well as that consumed indirectly through waste and the consumption of food and water. The study is concerned with exploring the routines and habits of energy use that develop over time, and how household energy consumption and its associated costs can best be reduced.

Invitation

We are looking for households who are interested in participating in two discussions (of about an hour each separated by about six months) with a researcher from the University of Exeter. The discussion will focus on how lifestyles and routines impact upon energy use, for example the temperature at which households' heating systems are run. No special knowledge is required and there are no right or wrong answers to any of the questions that will be asked - we are simply interested in hearing about your experiences. From what you tell us, we can then go on to investigate the possible ways in which we can help you save money and reduce your domestic CO_2 emissions. **We would ask that in households where two adults live, both individuals be present for the discussion** (where more than two adults occupy a house, we would ask at least two be present). Findings from the investigation will be published in the scientific literature, with no individuals or households being identified in any of the reports arising from the evaluation.

If you would like to sign up your household to take part in the Green Ripple project, or hear more about the energy use study, please contact Miss Nicola Hole at the College of Life and Environmental Sciences at the University of Exeter by email (N.Hole@exeter.ac.uk) or at the address below. If you would like to hear more about the Green Ripple project in general, please contact Amanda Leonard on 01209 614012 or by email at Amanda.Leonard@cornwall.gov.uk. In the coming weeks you will be visited by a member of the Green Ripple team where you can also register your interest in the study and the Green Ripple project more widely.

We very much hope you will be able to assist us in this undertaking.

Yours faithfully,

Nicola Hole   **Amanda Leonard**
Energy Policy Group   Community Regeneration Officer
CLES   Localism Service
RM A071 - Peter Lanyon Building   Cornwall Council
University of Exeter, Cornwall Campus Old Cowlin's Mill Penhallick,
Tremough   Carn Brea,
Cornwall TR10 9EZ   Cornwall, TR15 3YR
N.Hole@exeter.ac.uk   Amanda.Leonard@cornwall.gov.uk

To sign up to the Green Ripple project, email N.Hole@exeter.ac.uk

Appendix 3: Consent and Release Form

UNIVERSITY OF
EXETER

PhD Research Project on Household Energy Use

Informed Consent Form

Thank you for participating in this study, your responses and time are greatly appreciated.

With your consent, comments from the discussion will be recorded and then transcribed. Access to the written and electronic material will be restricted to myself and my supervisor. The results collected will be reported in my thesis, and will potentially be presented in academic journals and conference papers. Any comments you make which are especially insightful will appear in the final research report and any associated publications with a false name. Any personal information will only be accessible by myself and will be held in confidence.

This PhD project is being supervised by Professor Catherine Mitchell, located in the Energy Policy Group at the University of Exeter, Tremough campus in Penryn. If you have any further questions or comments about this research, please do not hesitate to contact either myself or my supervisor at the number/email/address below.

I agree that the contents of the interview may be used in a variety of ways; in consequent presentations, reports and publications. I understand that I can withdraw consent for this interview to be used at any time by contacting the researcher.

I, _ _ _ _ _ _ _ _ _ _ _ _ _ agree that the material from this interview may be used by Nicola Hole at the University of Exeter's Energy Policy Group according to the conditions given above.

Signature of participant _ _ _ _ _ _ _ _ _ _ _ _ Date _ _ _ _ _ _ _ _ _ _

Signature of researcher_ _ _ _ _ _ _ _ _ _ _ _ _ Date _ _ _ _ _ _ _ _ _ _

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Appendix 4: Interview chart

	Interviewee(s)[9]	Number of individuals present	Location	Age(s)
1	Jackie	1	Tolvaddon	40-50
2	Bob and Sue	2	Tolvaddon	60+
3	Stuart and Sally	2	Tolvaddon	30-40
4	Carrie	1	Tolvaddon	30-40
5	Timothy and Annie	2	Tolvaddon	60+
6	Charlie and Sammy	2	Tolvaddon	30-40
7	Tammy and Don	2	Tolvaddon	50-60
8	Sharon and Malcolm	2	Tolvaddon	60+
9	Harriet and Stu	2	Tolvaddon	30-40
10	Lawrence and Carol	2	Tolvaddon	50-60
11	Jimmy	1	Tolvaddon	30-40
12	Trudy	1	Tolvaddon	40-50
13	Adrian and Viv	2	Tolvaddon	40-50
14	Julie	1	Tolvaddon	40-50
15	Phillip and Laura	2	Tolvaddon	30-40
16	Jan and Henry	2	Tolvaddon	50-60
17	David and Greeta	2	Ladock	50-60
18	Brett	1	Ladock	50-60
19	Stephan and Sian (daughter)	2	Ladock	50-60
20	George and Raeanne	2	Ladock	40-50
21	Andrew and Chrissy	2	Ladock	40-50
22	Tania and Joel	2	Ladock	30-40

[9] Names have been replaced in order to anonymise the data and protect individuals' identities.

23	Kath	1		Ladock	40-50
24	Jules and Ray	2		Ladock	50-60
25	Bill and Susan	2		Ladock	50-60
26	Killan	1		Ladock	40-50
27	Heidi and Rob	2		Ladock	30-40
28	Susie and Mike	2		Ladock	30-40

Appendix 5: Discussion guide

Water heating

Structure	What do you know about your water heating system?
	How is the water heated here? (immersion, gas boiler)
	How old/replaced at all?
	Thought about it?
Organisation	How do you control this? Timer? Daily?
	How do you like this system?
	Does it change seasonally?
Who	Who does this?
	Are there any controls on water heating in the household? (cost/env/comfort)
	How do you share this if at all?
Why	To suit what lifestyle?
	What factors affect water use

Space heating –

Structure	What heating appliances do you have in your home?
	Gas, electric, - radiators/convectors/wood burner?
	Have they been here as long as you?
	Is each room heated?
Organisation	How is your space heating managed?
	Daily/timer/thermostat?
	Each room heated?
Who	Who is primarily responsible for this?
	Does this person decide?
	Do you all agree on temperatures?
	What factors affect the temperature at which you keep your home? (small kids, dogs..)
	Are you all happy with the temperature at which it generally is?
	Other efforts to keep warm – draft excluders, jumpers..
Why	How is this related to your preferences/lifestyle?

Appliances –

Structure	Do you know how efficient your appliances are? (TV, cooker, fridge, washing machine)
	Have you made any big appliance purchases recently?
	Who shops for appliances/makes choices?
	Criteria?? (efficiency, style..)
Organisation	How conscious are you of appliance use?
	Are there any appliances you restrict/limit the use of?
	How much now, would be on/off at the plug?
	Night/holiday...
Who	Is it the same person who will use it most?
	On the other hand, who, if anyone takes any time to turn appliances off?
	Are there any conflicts in the household over appliance use?
Why	

Supplier –

Structure	Who is your current supplier?
	Do you know what tariff you are on?
Organisation	Have you considered changing supplier?
	How do you pay at present? (monthly DD, on receipt of bill, quarterly DD, prepayment metre?)
	Reflect on bills as they come in?
	How much attention do you pay to your energy usage each month?
	Keep track of cost/kwh?
Who	Who deals with bills/supplier?
Why	What causes you to pay attention/or not?
	Cost/use have any effect on behaviour at home?
	Have you noticed price tariffs rising?
	Do you think about future bills?-ways to lower them – accept as a given, active management?

Food –

Shopping

Structure	Where do you purchase your food?
	All of it?
	Is there a choice?
Organisation	How often do you shop?
	So in terms of meals, do you plan ahead or think one or two days in advance?
	Daily?
Who	Who is it who shops?
	Who decides on purchases?
	How do you decide on what to buy?
	Do your criteria change?
	Buy similar things over time?
	Based on? (environment, cost, family preferences, taste, organic?
	Does this change for different food types? E.g. certain things you will always spend more/less on?
Why	What key things do you look for when shopping?
	And why is this?

Transport

Structure	What transport links do you have at your disposal?
	How many cars?
	Bus service?
Organisation	Shop when out and about or at set times?
	Pick things up when out and about?
	Do you think shopping differs with this ad-hoc or bulk shop?
Who	Both drive?
	Go together when both free?
Why	Would you consider another form of transport for food shopping?
	More general travel? Community car? Bus? Cycle/walking from Tolvaddon?

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Cooking

Structure	What do you cook with at home – electric/gas cooker/microwave?
Organisation	Main meals – is this a big occasion each day, eat together?
	One sitting?
	How often?
	How does this fit in with other meals, lunch at schools/work?
Who	Who does the majority of the cooking?
Why	

Storing

Structure	Fridges and freezers – how do these come into shaping your food consumption?
	Do you rely on them both heavily?
Organisation	Do you pre-prepare meals and freeze, use a lot of ready meals?
Who	Would you both be able to tell me roughly what is in your fridge/freezer at the moment?
Why	What benefits from using (or not) fridge/freezers as you do?

Waste -

Structure	Which of the following services do you use?
	Black bag, recycling, green waste?
	Local facilities for other kinds of waster>
	Any idea of the amount of black bag waster produced each week?
	Likewise for green waste?
Organisation	How is other kind of waste dealt with?
	Kitchen waste?
	Batteries? Shampoo bottles?
Who	Who deals with each waste disposal??
	Whole household make the same effort to recycle?

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Why	Any attempts at re-use? Tupperware, water bottles…

Appendix 6: Interview with Jimmy (within Tolvaddon)

Jimmy: Being realistic, people can't expect to have something for nothing all the time, it's not sustainable. But I think if the types of things people can access are realistic, if people understand the game…I suppose though, you're not willing to do that if at the end of it, there's no incentive and particularly if you can't afford it. I mean when me and my wife were both working full time we did make choices that were different. We were donating money, we would switch supplier to a more ethical brand because we could afford to do so, but we made a decision to sort of opt out of both working to be more sustainable for the family. So we were looking after the kids, we weren't driving to a nursery, leaving the kids and picking them up.

Nicola: Ok yeah

Jimmy: I mean you own it then and that's a big thing. I think if, I'm not being critical but I think if you're buying renewable energy because you think it represents something you agree with then that's great but in a sense all you're really doing is paying for that. You're not really contributing in a way that makes you part of a movement because it just comes out of your bank account. There's not necessarily much value to that, apart from, because I think a lot of this stuff is like, I think there's quite a lot of guilt attached to being green, because my wife says to me, if the end of the night comes sometimes, and I'm so tired, after being with the kids and that, and I'm so knackered and instead of washing a pot up to recycle it, I'll put in the bin, and 'oh god no, I've got to recycle it'. I just said look, I'm knackered and, you know, it's a really nasty marmite pot and the last thing I want at ten o clock at night is to be stinking of marmite. But I feel really guilty about it and you know what, that's just messages that we've been told but really like, you know what, I don't know where it goes from here, I don't really know whether what I'm doing is a good thing, bad thing or indifferent. I don't know how much it's costing them to recycle it, whether it's flown miles to China.

It's almost as if like robots though, we're all doing these things and I think there is quite a lot of guilt attached to it.
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Nicola: Yeah, ok

Jimmy: The other thing I would say, is that they're so militant with it, I must admit, I knew I was getting old because I did almost write to Cornwall council. You know when you write your first letter and then your life is over! Because it really bugged me because we got a council tax thing and they said about the blue box, because it's only about this big and we were already recycling ourselves, but when there's 4 of you in the house, you drink a lot of milk and so we already had a bin that we filled up and we took ourselves and then I said to the lady at the thing (the council), is there any chance that we could have 2?

'No, one per household.'

Ok, so well do they come with lids because generally we'll leave it outside so we can just open the door put it in,

'No'

And so she said,

'Well there's a bag and there's a lid, but if you don't do it correctly then they won't take it.'

And when they come and take it, I have a wander round (because I have time on my hands now!) and you see all the stuff that they haven't taken because someone's put it in the wrong place and I just think that they've approached it in the wrong way. Because you'll see this thing in the paper saying we've reached our target of however much recycling...but if they actually spoke to people and said, well what would work for you, took a step back. But t's about a number for them and that's all.

Nicola: Mm, yeah.

Jimmy: So since I've given up work we do things differently, we don't shop in the supermarket anymore we shop in the farm shop so we've done this for about a year now. We did it because well we hate the supermarket anyway. You go to the supermarket and you don't have a good experience do you? And it's like so we thought, well you want to have a good experience. You get to the checkout and they're miserable, you come home and eat the fruit and that

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doesn't taste of anything and so we're like well do we go to the farm shop and it's more expensive? But we have time to make a list of what we want to buy, so it's ended up being cheaper, mainly because we've got time. And yeah, you take your box and paper bags and it's all not as heavy on the packaging.

You get to the farm shop and it's the same three people who work there, and so they'll say hello to you and you know, it doesn't sound a lot but you know, when you go to the supermarket, you spend 100 quid and the person doesn't even make eye contact, I find that, I mean, I know it's not their fault and they are part of a machine aren't they. But I didn't enjoy the experience or handing over money to somebody who wouldn't look at me or say thank you, you know...so yeah, it is better doing it this way, the food does taste better as well.

We get the meat from there, we get everything there but once a month we do an online order from Asda and get butter and the stuff you can't get from the farm shop. And overall I think we've saved money.

Nicola: Really?

Jimmy: But I think it's really hard to achieve if you're in a family setting and you're working full time in a demanding job. Because what I think happens is I think it sucks the life out of you slowly. That's what I found, I never planned to work 50 hours a week, that wasn't what I wanted to do but I allowed it to happen. I think that slowly it compromises your values because you don't have the energy and you just haven't got the space to think. Again that's personally what I found happened to me. I felt I was moving away from the things that were personally important to me. And um...I felt that I was slowly becoming a part of a society that I didn't want to become a part of.

Nicola: And was it quite a big decision to give up work?

Jimmy: I was going mad. No, I think it was having our second child was the thing that forced the decision because I knew that we were already busy and I knew that it was going to be even busier. And I think the whole time that I was in that cycle, I wasn't particularly happy. On a day to day basis, I was thinking, this doesn't really feel right for me. You know, I was never there thinking, I want to buy the next biggest telly, you know I was never really in that space of earning

more money. It did take quite a long time to make the decision, which surprised me to be honest. Because I got quite drawn into it and it became difficult to reverse out but more because of the responsibilities I'd accrued I think. But I think it was harder for other people than for me, just because they didn't understand, because they're not in my head are they? It's personal to people isn't it? But no it was hard for the people around me at work, it was like 'what, you're gonna give up work?' And for family and friends, I think people judge on maybe what they would do. Work has come to define a lot of people. I think it's about denial. For a lot of the time when I was working, I would tell myself that I was still the same person that I was before, but I wasn't, because you become defined by having to go to work and I was in supermarkets and I was doing more of the things that weren't making me happy and I guess, the whole green thing, in this country, has become branded, it's become a commodity, it's become something that is a product and it's become open to being a trend to a lot of people, when really, it's actually quite straightforward. It's really rewinding...which I guess just can't happen easily for a society that's come such a long way...

But it's quite straightforward really, I mean we didn't have enough time so I gave up work and now we have more time, but it's so hard to achieve, because of how finely it's structured for money and affordability and the cost of living.

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