



Climate change, carbon dependency and narratives of transition and stasis in four English rural communities



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ABSTRACT

This paper explores the carbon dependency of life in four villages in England, the degree to which residents in these villages are aware of and concerned about this dependency and its relationship to climate change, and the extent to which they undertake actions that might mitigate or adapt to this dependency. The paper identifies high degrees of carbon dependency and awareness and concern about climate change and carbon dependency, although relatively low levels of mitigative or adaptive actions. The paper explores how this disjuncture between awareness and actions persists, arguing that attention needs to be paid to how people narrate stories to themselves and others that account for inaction. Five narratives of non-transition or stasis are identified, along with three, less widely adopted, narratives of transition. The significance of rurality and emotions within these narratives is highlighted.

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1. Introduction

“The last few years have seen a growing scientific consensus about human influence on climate and the significant risks posed by climate change ... Policy-makers have responded by implementing policies to curb greenhouse gas emissions ... Yet, this discourse of consensus ... contrasts with the cacophony of opinions expressed by others within society. Analysis ... highlights various competing discourses about the existence and causes of climate change and how to tackle it, including denial, doubt and apathy”.

[Whitmarsh, 2011, p. 690]

As Whitmarsh indicates, a need to transition to some form of low greenhouse-gas emitting society appears widely accepted amongst both scientific and policy-making communities. Such ideas also figure to an increasing extent not only within geography but also within the wider social sciences, where they form the focus of numerous empirical studies and theoretical reflections, with influential social theorists reframing conceptions of society through references to climate change and transitions from carbon dependency to a low- or post-carbon future. Urry (2011), for

example, argues for a recasting of notions of post-Fordist, post-modern and neo-liberal societies, and his own conception of disorganised capitalism, into resource terms, and calls for the development of a ‘post-carbon sociology’ that “emphasises how modernity has consisted of an essentially carbonised world” and explores paths towards ‘post-carbonisation’ (Urry, 2011, p. 1; see also Giddens, 2009; Clarke, 2011).

Urry argues that transitioning from high carbon dependency is extremely difficult, not least due to strong carbon-based vested interests, as well as diverse discourses and uncertainties surrounding climate change and post-carbon energy systems. The opening quote from Whitmarsh emphasised the latter point, suggesting that there is a ‘cacophony’ of popular discourses about the existence, causes and remedies to climate change, including expressions of apathy, doubt and denial. She adds that whilst studies suggest recognition of climate change is “now very high”, research also shows that mitigative/adaptive actions are “a low priority issue for most people” (Whitmarsh, 2011, p. 690; see also Hobson, 2003; Whitmarsh et al., 2011b; Svensson, 2012; Upham, 2012; Hadfield-Hill, 2013). However, it has also been argued that the time for mitigative actions has passed and the future lies in an “emergent beast of adaptation” (Wainwright and Mann, 2015, p. 315) in which “a predatory ‘disaster capitalism’” may come to thrive (Harvey, 2015, pp. 254–5).

Many discussions of carbon dependency and transitions to post- or low-carbon societies have been urban in focus (e.g. Betsill and

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Bulkeley, 2007; Bulkeley et al., 2012; Davis, 2010), or have drawn attention to potentially catastrophic impacts of climate change on communities in marginal areas within the ‘majority world’ (e.g. Dulal et al., 2010; Haidera et al., 2011; Magrath, 2010).¹ This paper, however, focuses on the potential for transition in communities located in rather less widely studied areas (although see Trier and Maiboroda, 2009; Wall and Marzall, 2006), namely areas of the countryside located in the ‘minority world’, and specifically in three English districts. The paper draws on research conducted as part of Research Council UK’s *Rural Economy and Land Use* (RELU) programme that sought to understand the potential for climate change mitigation and adaptation activities within communities in the local authority districts of East Lindsey, Harborough and West Berkshire (Fig. 1).

After reviewing understandings of transition, the paper explores ‘disjunctures’ between expressions of concern about climate change/carbon dependency and behaviours to mitigate or adapt to these concerns. It is argued that many interpretations adopt a ‘deficit’ focus, whereby inaction is seen to stem from some form of shortfall, be this in availability of information, understanding, trust or belief. Such interpretations imply that people are unaware of or unconcerned about the presence of disjunctures between stated attitudes and actions, a disavowal that is questioned. Attention is drawn to studies suggesting people are highly conscious of such disjunctures, which become the subject of ‘narratives to the self and others’ about why actions are necessary or not. We develop this argument drawing on a questionnaire survey conducted within four villages located in the three districts identified above. After outlining the methods employed in the study and characteristics of the districts as they relate to carbon dependency, attention is paid to residents’ attitudes and actions with respect to climate and energy issues. It is argued that ‘disjunctures’ between awareness and actions are evident, but many people were conscious of the degree to which their actions failed to address climate and carbon related challenges. Drawing on the concept of ‘narratives to the self’, the paper identifies narratives of stasis, or non-transition, and narratives that foster actions to mitigate or adapt to climate change and carbon energy dependency. The paper concludes by considering the implications of the study’s findings.

2. Transition, attitudes and actions: theoretical discussions

Authors such as Shove (2010b), Lawhon and Murphy (2011), Brown et al. (2012) and Seyfang and Haxeltine (2012) have highlighted how the term transition has been employed across a range of discourses, including governmental policy-making, academic research and political activism. As Shove (2010b, p. 280) remarks, such debates have “fuelled the development of hybrid ... theories of transition”, drawing on “a number of traditions, including innovation studies, science and technology studies, evolutionary economics, history and complexity science”, although she also argues that many of these frame transitions through concepts that place responsibility for change upon people’s attitudes, behaviours and choices (what she refers to as the ‘ABC framework’). Within such perspectives, transitions such as “system-wide transformations ... to address the challenges posed by climate change and the move to a low-carbon economy” (Seyfang and Haxeltine,

2012, p. 381) are viewed as being driven by changes in people’s attitudes and values, which then transform people’s behaviours.

As Shove (2010a, p. 1274) stresses, such conceptions can be critiqued as individualistic interpretations of change that ignore “the extent to which governments sustain unsustainable ... institutions and ways of life”. A range of alternative frameworks have emerged for understanding and analysing such ‘sustainability transitions’, including a series of perspectives on socio-technical systems and their management (e.g. Geels, 2002, 2010; Grin et al., 2010; Kemp et al., 1998; Smith et al., 2005, 2010), applications of social movement theories (e.g. Jamison, 2014; Pickerill, 2010; Seyfang et al., 2010) and reflections on the political economy of transitions (e.g. Davis, 2010; Swyngedouw, 2010; Wainwright and Mann, 2013, 2015), as well as the practice theory approach favoured by Shove (e.g. Shove, 2012; Shove et al., 2012; Shove and Walker, 2010, 2014; Spaargaren, 2003, 2011).

Despite the significance of these perspectives and the critique raised about the individualistic focus of the ABC framework, as Whitmarsh et al. (2011a, p. 258) observe, research on attitudes, behaviour and decision-making is far from homogenous, with there being a “range of theories and approaches”, not all of which adopt asocial behavioural perspectives. Similar arguments are advanced by Nye et al. (2010a) and Norgaard (2011), who both argue for the adoption of psycho-social approaches to understanding transition attitudes and behaviours.

A common concern within such psycho-social research and ABC framework studies is the presence of disjunctures between expressions of concern about climate change and carbon dependency, and adoption of practices to address these, with a series of studies identifying levels of the former far exceeding levels of the latter (see Bulkeley, 2000; Norton and Leaman, 2004; Poortinga and Pidgeon, 2003; Poortinga et al., 2006; Upham et al., 2009; Whitmarsh, 2009, 2011). Studies employing the ABC framework tend to adopt, albeit often implicitly, what has been described as the ‘deficit model of public understanding’ (Lorenzoni et al., 2007; Miller, 2001; Norgaard, 2011; Sturgis and Allum, 2004). Within such a perspective, lack of activity is attributed to a shortage of some key ingredient to action, such as knowledge, trust or motivation.

Such conceptions can be criticised for neglecting material and cultural barriers, or ‘lock-ins’, that might limit the possibility of implementing understandings (e.g. Barr and Gilg, 2007; Lorenzoni et al., 2007; Nye et al., 2010b; Sanne, 2002; Shove, 2003; Unruh, 2000); their inattention to the range of reactions surrounding people’s engagement/non-engagement with mitigation/adaptation activities beyond the dualism of acceptance or denial (e.g. Lorenzoni and Hulme, 2009; Norgaard, 2011; Stoll-Kleemann et al., 2001); and the degree to which information needs to connect with people’s pre-existing concepts and interpretations (e.g. Hards, 2012; Spaargaren, 2003; Tindall et al., 2003; Whitmarsh et al., 2011b). Moreover, Stoll-Kleemann et al. (2001) argue that deficit models tend to presume only academics, policy experts and committed environmentalists are aware of, and concerned about, disjunctures between awareness and behaviour. They suggest, however, that many people are highly conscious of such disjunctures, a point clearly articulated by Latour who, although an academic, admits to quite personal feelings of inability to act in response to climate change:

“the reason why I, to begin with, feel so powerless, is because of the total disconnect between the range, nature, and scale of the phenomena and the set of emotions, habits of thoughts, and feelings that would be necessary to handle those crises—not even to act in response to them, but simply to give them more than a passing ear”.

[Latour, 2012, p. 2]

¹ The terms ‘minority world’ and ‘majority world’ are used rather than terms such as developed/developing, First/Third World or North South because, as Punch (2000, p. 51) argues they both avoid many of the empirical inaccuracies of these terms and “shift the balance” in the descriptions in that it is the richer countries are described in terms of “what they lack (population and land mass)”, rather than it being the poorer countries that are positioned via “what they lack”.



Fig. 1. Location of case study districts.

He adds that “in a sense we are all climate deniers” because there is no sense that society has exerted control over its own role in climate change (Latour, 2012, p. 4).

Latour’s comments are significant in highlighting how inaction does not necessarily imply lack of knowledge or concern about issues, but could equally stem from the range of engagements a person has with an issue. He also emphasises emotional aspects of dissonance between awareness and action. Stoll-Kleemann et al. (2001) indeed suggest that people make use of a range of “psychological devices” (p. 107), or self-focused “interpretations” or “stories” (p. 115), to resolve, deny or displace this dissonance. Whilst resolution might involve seeking to ‘close’ gaps between beliefs and actions, denial and displacement do not, but instead focus on providing interpretations or narratives that people can use to explain to themselves, and others, why these disjunctures exist.

Similar arguments are made by Norgaard (2011) who uses Cohen’s (2001) differentiation of literal, interpretative and implicatory denial. The first category involves explicit rejection of a proposition, such as claims about the presence of climate change, a position that Lorenzoni and Hulme (2009) refer to as ‘denial’. They argue, however, that many people described as climate change deniers or sceptics might be better characterised as ‘doubters’ or as ‘disinterested’, whilst a fourth position is one of ‘engagement’ or, as often described, ‘believers’. The doubters or disinterested might be seen to engage in interpretative and implicatory denial. In the former, information is not so much rejected as “given a different interpretation” (Norgaard, 2011, p. 10), whilst the latter refers to rejection not of the information but the psychological,

political or moral implications of it. In particular Norgaard argues that people make use of ‘tools of order’ and ‘tools of innocence’ to “create distance from responsibility, to assert the rightness or goodness of actions, to maintain order and security and to construct a sense of innocence in the face of ... disturbing emotions”. The former tools refer to the ways that symbols, concepts, practices and affective responses are used to affirm a sense of stability in “how things are in the world”, or ‘ontological stability’, whilst the latter tools refer to the formation of senses of “distance from responsibility and ... rightness or goodness” (Norgaard, 2011, p. 146).

Like Stoll-Kleemann et al. (2001), Norgaard argues for incorporation of psychological dimensions to understandings of awareness and action disjunctures, arguing that ‘social psychology’ perspectives address a major lacuna in deficit models of public understanding, namely “the possible significance of emotions for social inaction” (Norgaard, 2011, p. 90). She adds that a more dynamic understanding of inactivity should be adopted, arguing “the word *ignore* is a verb” and “[i]gnoring something – especially ignoring a problem that is both important and disturbing – can actually take quite a bit of work” (Norgaard, 2011, p. 90). This work is both cognitive and emotional, involving use of ‘social narratives’ that enable people to “block out or distance themselves from information in order to maintain coherent meaning systems, desirable emotional states ... or a sense of self-efficacy” (Norgaard, 2011, p. 91).

Drawing on such arguments we contend that attention needs to be paid to the accounts people construct surrounding both the enacting and non-enacting of practices related to stated aware-

nesses and concerns over energy and climate change. Deficit models in a sense normatively privilege action over non-action, with the former seen as the desired state as opposed to viewing both states, and the various positions between them, as being in need of explanation. In order to prevent such a privileging, attention needs to be paid to the explanations or 'narratives to the self and others' that both justify action or inaction.

This section has reviewed theories of transition, highlighting conceptions that focus on the formation of people's attitudes and their relationships to behaviour. As outlined in the next section, our research adopts a similar perspective, exploring levels of current carbon dependency and concerns about energy and climate change amongst rural residents, before considering the extent to which attitudes about energy and climate change are reflected in mitigative/adaptive actions. Existing work has identified significant disjunctures between attitudes and actions, often interpreting this via some form of deficit interpretation, although less individualistic, psycho-social perspectives have also been used. Amongst the arguments advanced within this stream of work is that inaction does not necessarily stem from deficits and that people are often very aware of, and concerned about, disjunctures between attitudes and actions. Drawing on these suggestions, this paper will explore how people construct narratives to account for divergences between levels of concern and action. Attention will be paid both to accounts of actions and inaction, with narratives of transition and stasis being identified.

3. Carbon dependency and climate change: a study of awareness and actions in three English rural districts

3.1. The study areas

An initial research task was to identify areas with contrasting levels and forms of carbon dependency. As discussed in Phillips and Dickie (2012, 2014) and Phillips et al. (2012), the classification of rural areas created by 'Rural Futures' (Future Foundation, 2002; Lowe and Ward, 2009) was useful because it incorporated assessments of economic activity and commuting, both highly associated with carbon energy consumption. The districts of East Lindsey, Harborough and West Berkshire were identified as having contrasting characteristics. East Lindsey was classified as 'deep rural', a category seen to involve areas that "resonate most closely with popular perceptions of the 'traditional' countryside" (Lowe and Ward, 2009, p. 1324), with agriculture a major component of the local economy, often alongside tourism, and limited in-migration or commuting. Given these features, it was unsurprising that this District had estimated per capita CO₂ emissions levels below the national average in 2010 (Table 1). West Berkshire was classified as a 'Dynamic Commuter Area', implying the area exhibited

socio-economic dynamism as well as extensive commuting in both amount and spread. This District had per capita CO₂ emissions well above the national average, although almost 27% was from external sources such as roads passing through the district. Harborough, classified as 'Transient Rural', was thereby characterised as lacking "the energizing commuting systems" of the 'dynamic commuter' zones and the "prominent agricultural sector" of the 'deep rural areas', although having above-average levels of commuting centred on 'provincial centres' (Lowe and Ward, 2009, p. 1325). Travel to work distances (Fig. 2) broadly confirm this, with Harborough having a high proportion of people travelling 10–20 km, distances that encompass the urban centres of Leicester, Nottingham, Corby and Peterborough. This district had above average per capita CO₂ emissions, although approaching 23% was from external sources.

Travel is not the only source of CO₂ emissions, with people apparently generating as much greenhouse gas emissions through life within their homes as through travel, with per capita domestic energy use and CO₂ emissions being generally higher in rural areas than urban ones (CRC, 2010). These features have been ascribed to the higher presence of 'hard to heat' and 'hard to treat' homes due to the greater relative number of old properties with solid walls in the countryside (BRE Housing, 2008), although it has also been argued that higher domestic energy consumption reflects cross-correlation between rural areas and spatial variations in socio-economic variables such as social class, income, housing form and tenure (CRC, 2007; Defra, 2008). It has also been suggested that fuel poverty impacts a larger proportion of households in some rural areas than it does urban households in the same region, due to higher numbers of 'hard to heat'/'hard to treat' properties, low levels of pay in some rural businesses, and the presence of more householders unconnected to the gas network and hence reliant on other, higher cost, fuels (CRC, 2007, 2008, 2010). Figures on the presence of solid wall properties and off-grid households reveal high numbers of both within rural areas across the study districts (Fig. 3). There were, however, significant differences in household energy consumption levels (Fig. 4), with East Lindsey having noticeably lower per-capita electricity consumption than expected given the proportion of households living in solid wall properties or lacking mains gas supply. Such findings support the contention that energy consumption may be more influenced by the social character of inhabitants than by the character of properties or the source of power supply. As Fig. 5 indicates, the three Districts had distinct socio-economic structures, with West Berkshire having well above the national average of higher managerial and professional workers, as well as high numbers of lower managerial and professional occupations, although Harborough had a higher percentage of this group. In clear contrast, East Lindsey had below average numbers of people in professional and managerial occupations, although had above average numbers of small employers

Table 1

CO₂ emissions in 2011, case study rural districts. Source: Local and Regional CO₂ Emissions Estimates for 2005–2012, Department of Energy and Climate Change (2013).

Dataset and area	Per capita emissions CO ₂	Sector contribution (%)			
		Transport	Domestic	Industry and commerce	Land use, land use change and forestry
<i>Full emissions</i>					
East Lindsey	7.0	30	33	33	3
Harborough	8.2	47	27	25	2
West Berkshire	10.0	50	22	28	0
UK Average	6.8	29	30	43	−2
<i>Subset (excludes emissions local authorities unable to directly influence, such as emissions from motorways, EU Emissions Trading System sites, diesel railways)</i>					
East Lindsey	6.8	32	34	34	0
Harborough	6.2	32	35	33	0
West Berkshire	7.2	31	31	37	0
UK Average	5.9	25	34	40	0

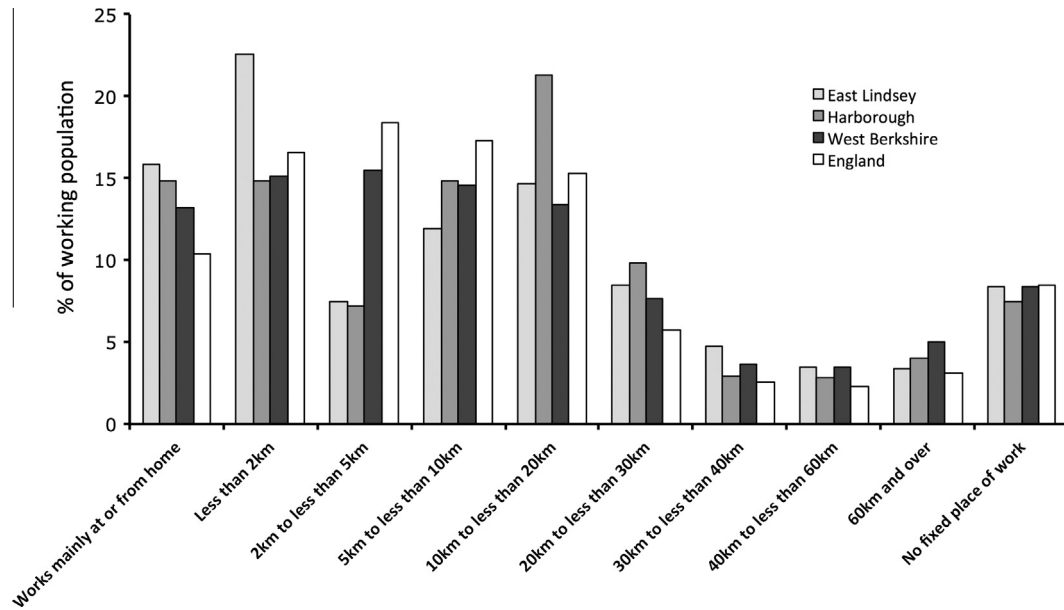
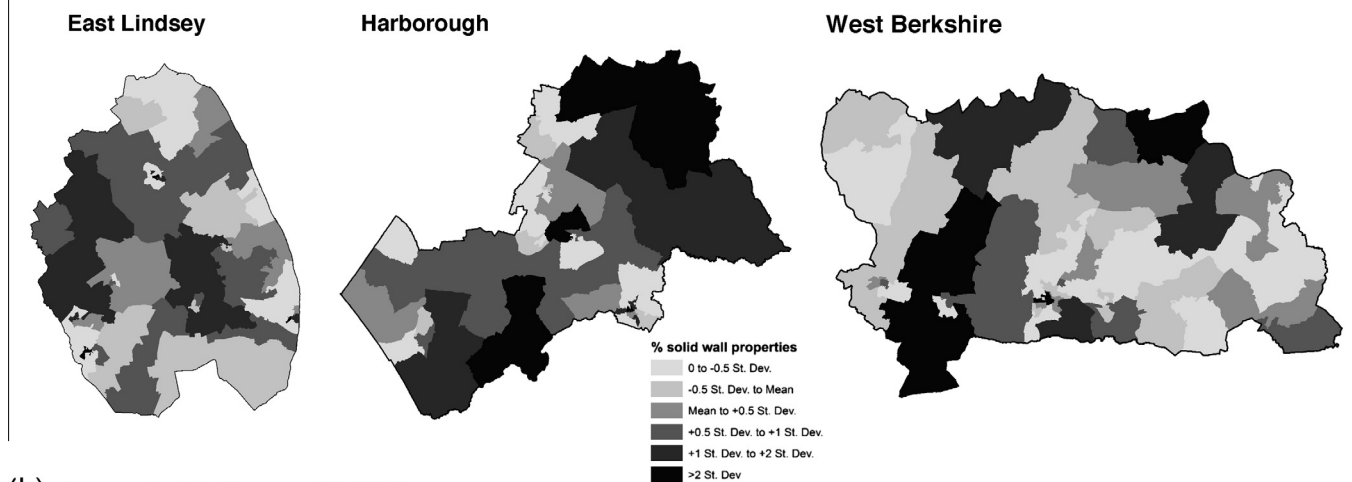


Fig. 2. Travel to work patterns, case study districts (2011 Census). *Source:* Adapted from data from the Office for National Statistics licensed under the Open Government Licence v.2.0.

(a) Solid wall properties, 2001



(b) Household off gas grid, 2012

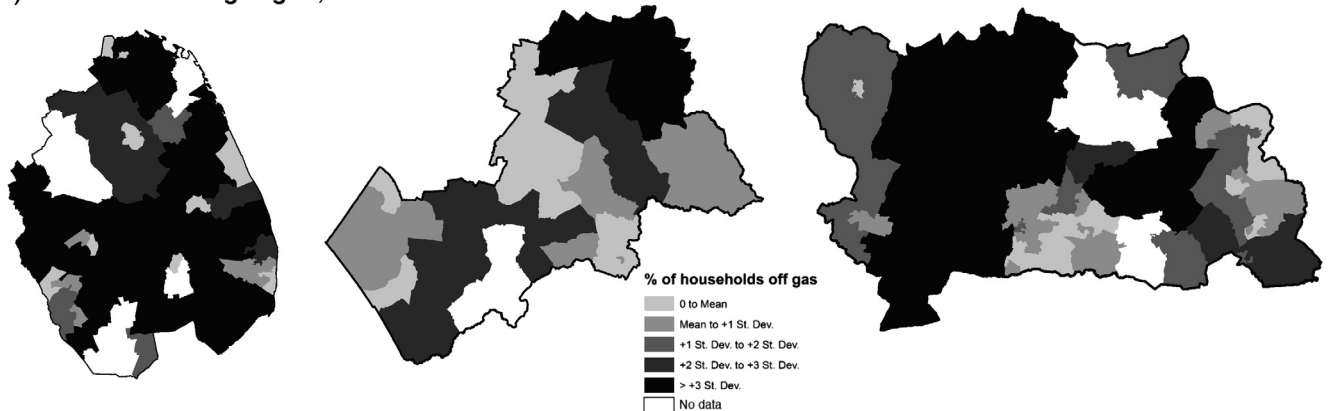


Fig. 3. Households in solid-wall properties or off gas, case study districts. *Sources:* (a) Centre for Sustainable Energy, Lower Superoutput Area data and (b) DECC LSOA estimates of households not connected to the gas network 2012.



Fig. 4. Electricity consumption per household, case study districts. Source: based on DECC LLSOA domestic electricity and gas dataset, 2011.

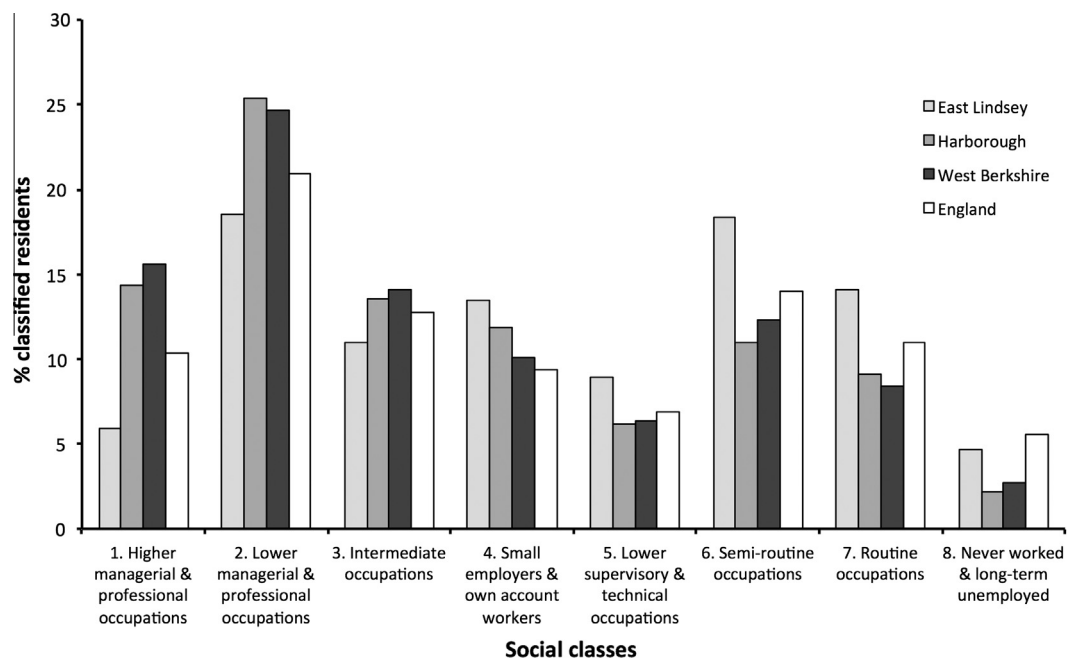


Fig. 5. Social class structure, 2011, case study districts. Source: Office for National Statistics, 2011 Census: Aggregate data (England and Wales) [computer file]. UK Data Service Census Support. Downloaded from: <http://infuse.mimas.ac.uk>. This data is licensed under the terms of the Open Government Licence [<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2>].

and own account, lower supervisory, semi-routine and routine workers. Similar differences emerge in mappings of income and house prices (Fig. 6), with East Lindsey standing in clear contrast to the other two Districts.

Socio-economic character has been seen to not only influence levels of energy consumption but also environmental attitudes. It has long been claimed that environmental concerns are most widely expressed by members of the middle class (e.g. CRC,

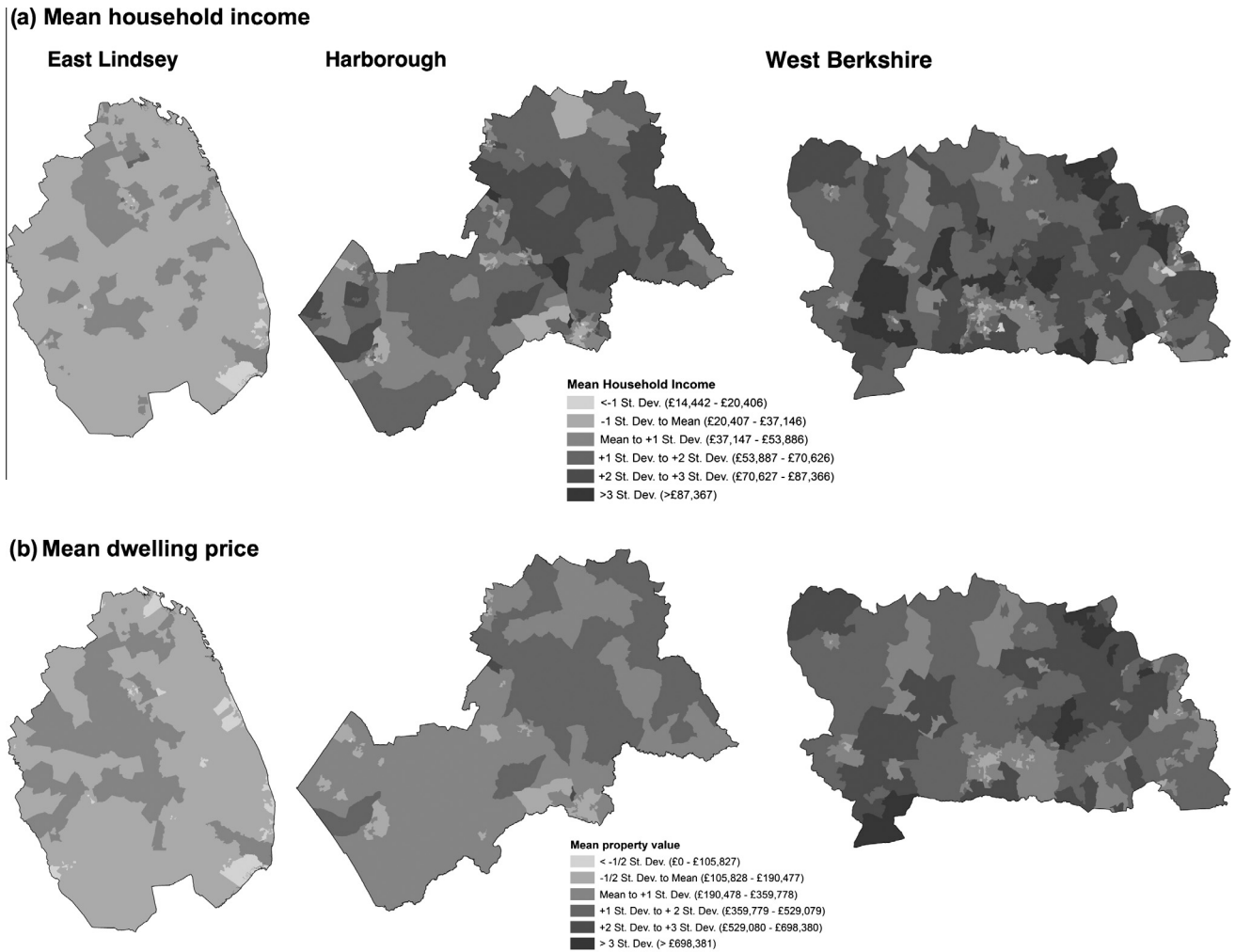


Fig. 6. Mean rural household income and dwelling price 2013, case study districts. *Source:* Experian Personal Income Data and Public Property Value Data Profiles November 2013, Version 1/November 2013 Experian Pub.

2007; Franzen, 2003; Franzen and Meyer, 2010; Inglehart, 1981; Norton and Leaman, 2004; Poortinga et al., 2011; Van Liere and Dunlap, 1980), although this argument has also been long contested (e.g. Buttel and Flinn, 1978; Dunlap and McCright, 2008; Samdahl and Robertson, 1989; Summerfield et al., 2007), as well as disquiet expressed about the non-translation of concern into associated actions amongst this class (Trier and Maiboroda, 2009). One response to such variability has been to turn to 'lifestyle' or 'market segmentation' analysis (e.g. Barr et al., 2006, 2011; Gilg et al., 2005), which as Diamantopoulos et al. (2003) notes, has often become conjoined with geodemographic approaches, such as the 'Greenaware' classification created by Experian (Experian, n.d.). This classification is based on indicators of environmental awareness, attitudes and behaviour, and suggests that the largest categorisations of people within many areas in the Districts were the so-called 'doing their best' and 'green but doubtful' groups (Fig. 7). These groups constitute the nationally most prevalent of Experian's segments (Experian, n.d.), with people in both categories being said to be highly concerned about climate change. In the former category, people have the self-perception that they have little knowledge about its causes while adoption of mitigative actions is limited by their perceived personal costs. In the latter category there is seen to be greater depth of knowledge and levels of mitigative activity, but also higher levels of direct scepticism (Experian, n.d.). Many of the most sceptical/envi-

ronmentally inactive segments, such as so-called 'sceptical libertarians' and 'constrained by price', also appeared in significant numbers of areas in the case study Districts, especially in the Harborough and West Berkshire Districts, while the latter group was also a strong presence in East Lindsey.

3.2. Carbon dependency and attitudes transition in four English villages

Drawing on the preceding analysis, four villages were selected to represent some of the diversity present across the Districts (see Phillips and Dickie, 2012). A village in West Berkshire was selected with a high service class and service sector presence, high mean house prices and incomes, along with a high proportion of people working over 10 km from their place of residence, and a significant presence of Experian segments with relatively high levels of environmental awareness (Table 2). In East Lindsey a village was selected with much lower levels of service class presence, mean household incomes and house prices, as well as high numbers of economically inactive residents and a slightly lower proportion of residents travelling over 10 km to work. A second village in East Lindsey was also selected, in part because the size of potential study locations proved to be significantly smaller here than in the other two Districts. There was also evidence suggesting that the two communities in East Lindsey, whilst within a mile of each

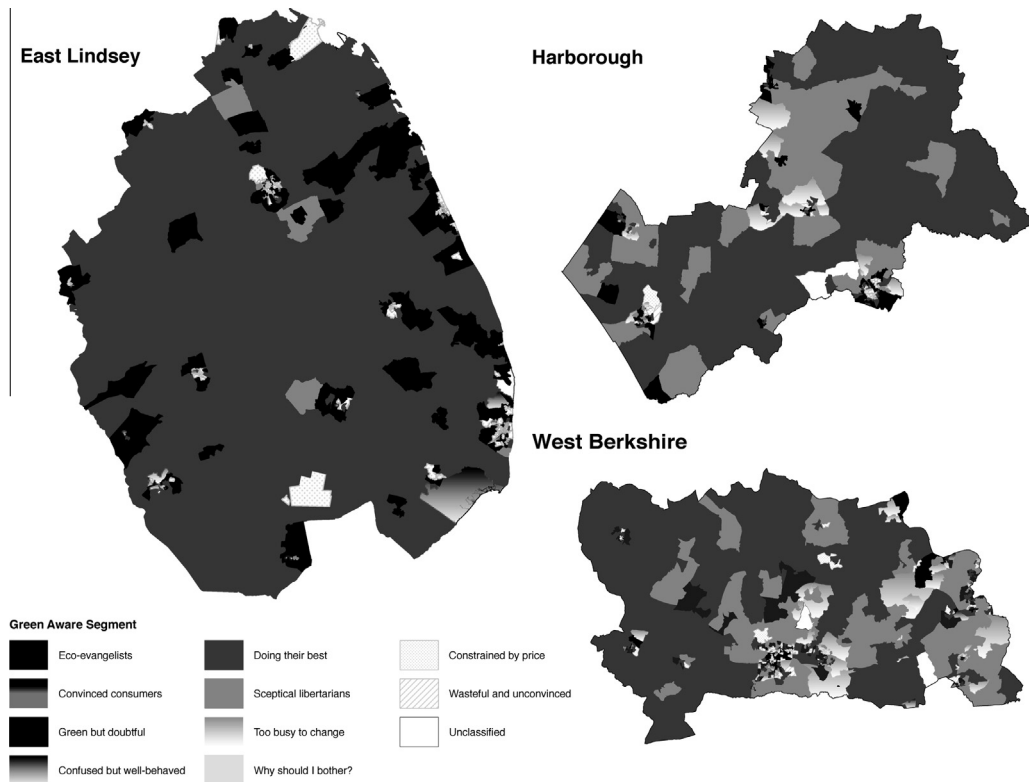


Fig. 7. Modal Experian 'green awareness' segment. Source: Experian GreenAware Green Segments Data Profile Version 1|UK 2013 Data Release Experian Public.

other, had significantly different social profiles and attitudes to certain climate change mitigation activities. The second village, for example, had a higher service class presence and a lower proportion of economically inactive residents, although similar indices of social deprivation and fuel poverty, as well as low mean incomes and house prices. Both villages also had high proportions of residents classified by Experian as 'doing their best', which as mentioned earlier was seen to imply people with concerns about climate change but limited knowledge of its causes and a reticence for action due to perceived cost. The Harborough village lay between the West Berkshire village and the first of the East Lindsey villages on many of the selected indices. According to Experian's classification, over half the village's population could be described as 'sceptical libertarians', although it also had an active 'green group' whose activities included climate change consciousness-raising activities, such as screenings of the film *Age of Stupid* (Armstrong, 2009), and energy saving initiatives such as thermal image displays, renewable energy technology demonstrations and an energy conservation competition.

To explore household use, awareness and understandings of climate change and carbon-based forms of energy, and the adoption of energy conservation and climate change adaptation/mitigation activities, a questionnaire-based survey of residents in the four villages was conducted between October 2011 and May 2012. In total 194 residents over 18 were interviewed using a variety of open and closed questions.

The questionnaire confirmed and extended the analysis of secondary data, highlighting, for instance, that some residents in all the villages travelled extensive distances to work (Fig. 8), with 97% of adult residents having private motor vehicle access and almost 86% of respondents having never used public transport from their villages. It was also evident that household incomes were much higher in the West Berkshire village than in the other villages, with over a third of its residents having a gross income

of over £60,000, in clear contrast to Village 1 in East Lindsey, where 73% of the surveyed households described their gross annual household income as below £30,000. However, even the West Berkshire village had households falling into this lowest income category, highlighting average incomes can obscure significant differences. Likewise, whilst a quarter of surveyed householders had domestic electricity bills over £1000 per annum, well above the annual average for England and Wales of £469 in 2011 (DECC, 2012), there were also significant differences within and between villages. Over a third of householders in the West Berkshire village paid £1000 or more per annum, a figure closely matched by East Lindsey Village 1, although here over a fifth of households had electricity bills lying below the national average. Fig. 9 shows the inter-relationships between income and domestic electricity consumption, revealing that households with gross annual incomes under £15,000 formed a significant proportion of households expending less than £600 per annum on electricity, whilst households with incomes above £35,000 were the largest contributors to households with electricity bills of over £600. Such findings support the contention that energy consumption is skewed in relation to income, with higher income householders consuming more domestic energy. It was, however, also evident that the distribution was far from uniform, with some high-income households appearing in the lowest category of electricity consumers, whilst some households with low incomes were high electricity consumers. It was also evident that across the range of energy use, there was significant concern about energy cost, with almost 89% of respondents stating they were worried that fuel would become unaffordable, whilst 83% expressed concern about domestic energy costs (see Fig. 10).

Fig. 10 also reveals that people's fuel concerns were not simply centred on issues of price, but also frequently encompassed issues of supply security. It was further evident that whilst concerns about global climate change were widely expressed,

Table 2

Selected statistics, case study villages. Sources: Office for National Statistics, 2011 Census: Aggregate data (England and Wales) [computer file], UK Data Service Census Support (Downloaded from: <http://infuse.mimas.ac.uk>, Information licensed under the terms of the Open Government Licence [<http://www.nationalarchives.gov.uk/doc/open-government-licence/version/2/>]); Experian Personal Income, Public Property Value and GreenAware Green Segments Data Profile Version 1|November 2013 Experian Public; SEIRA dataset (<http://www.sei.se/relu/seira/download.html>).

Variables	Case study villages			
	West Berkshire	Harborough	East Lindsey 1	East Lindsey 2
Service sector employment, 2011 (%)	80	77	54	68
Professional/managerial employees (%)	45	45	24	32
Economically inactive (%)	23	30	34	26
Index of Multiple Deprivation score, 2010 ^a	25,993	21,136	9625	8631
Households in fuel poverty, 10% indicator 2003 ^a (%)	14.7	40.5	46.0	49.2
People travelling over 10 km to work, 2011 (%)	45.5	56.6	41.5	30.3
Mean house prices, 2013	£401,724	£309,394	£148,563	£156,793
Mean Household Income, 2013	£66,509	£56,306	£30,929	£39,717
Area liable to flood, 2005 ^a (%)	0.5	1.0	33.6	82.2
Experian GreenAwareness segments (%)				
‘Doing their best’	72.5	39.5	97.5	94.8
‘Sceptical libertarians’	7.8	54.9	0.0	5.2
‘Green but doubtful’	13.0	5.6	2.5	0.0
‘Too busy to change’	6.3	0.0	0.0	0.0
‘Convinced consumers’	0.4	0.0	0.0	0.0

^a Data is at super output area (SOA) and therefore data relates to area well beyond village or parish boundaries. All other data relates to parish level.

energy-related worries were more widespread than concerns about local environmental and climate change, or indeed about the availability of local transport services. This is despite transport being long identified as a topic of concern to rural communities (see Farrington and Farrington, 2005; Higgs and White, 1997; Lowe et al., 1986; Moseley, 1979; White et al., 1997) and of clear relevance to climate change and energy consumption levels, although low level concern might be viewed as consistent with the evident reluctance to use public transport amongst the surveyed residents.

Despite extensive expressions of concern about climate change and energy, adoptions of mitigatory and adaptive actions were less widespread. For example, 64% of households seemingly made no attempt to monitor their energy consumption even through examination of bills, with 20% of household respondents stating they did not even know roughly how much they were paying annually for electricity. Similarly, as Fig. 11 illustrates, many residents were apparently not adopting, or even contemplating, carbon- and energy-reducing activities such as using public transport more, reducing their car journeys, purchasing a car with a smaller engine, or moving to or building an eco-house. This was despite widespread adoption of environmentally friendly activities such as recycling, replacing broken appliances with more energy-efficient ones, or purchasing locally grown food or food with less packaging. Overall, it was clear that across the villages, there was widespread dissonance between stated levels of awareness/concern and actions that might mitigate or adapt to these concerns. This was not unexpected given the high proportion of Experian’s Greenaware ‘doing their best’ category across the villages (see Table 2), a segment identified as being “[c]oncerned about the environment” but with only “intermediate level of engagement with green behaviours” (Experian, n.d., p. 72).

3.3. From attitudes and actions to narratives to the self and others

As discussed previously, it has been suggested that people may be highly aware of such dissonances and seek to deal with them

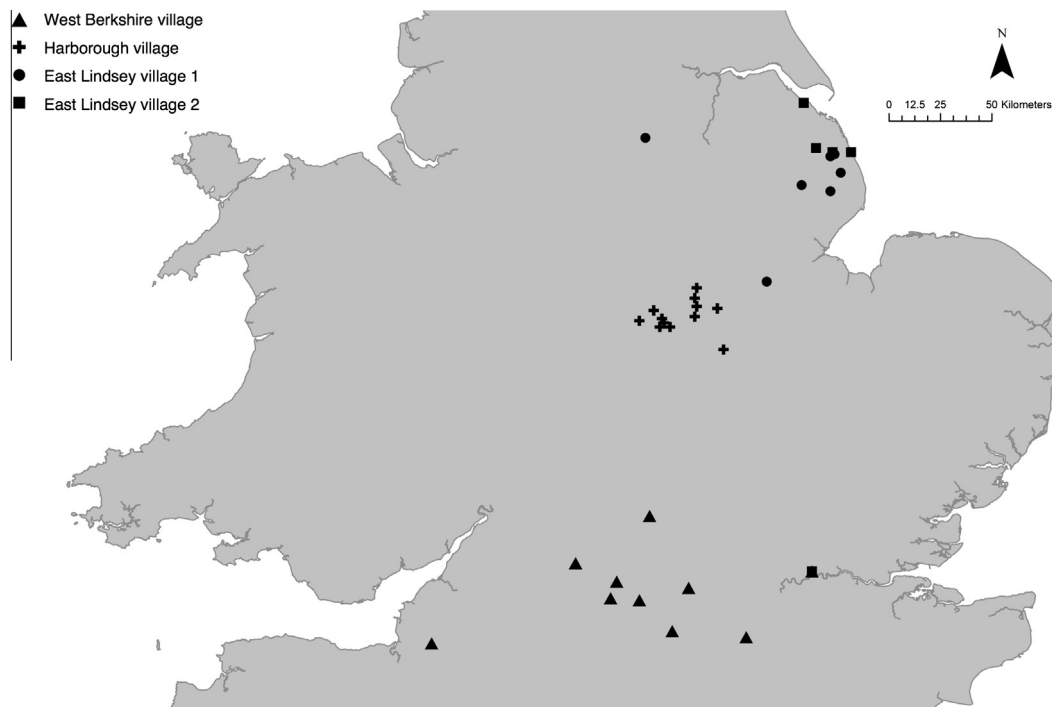


Fig. 8. Workplaces of residents of four case study villages.

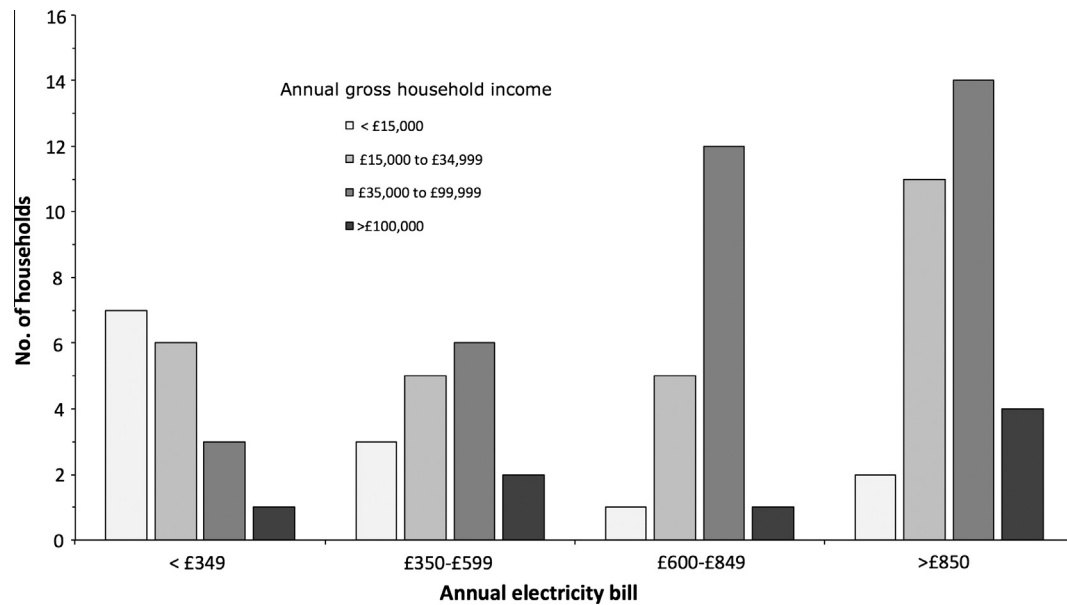


Fig. 9. Annual energy bills by gross household income.

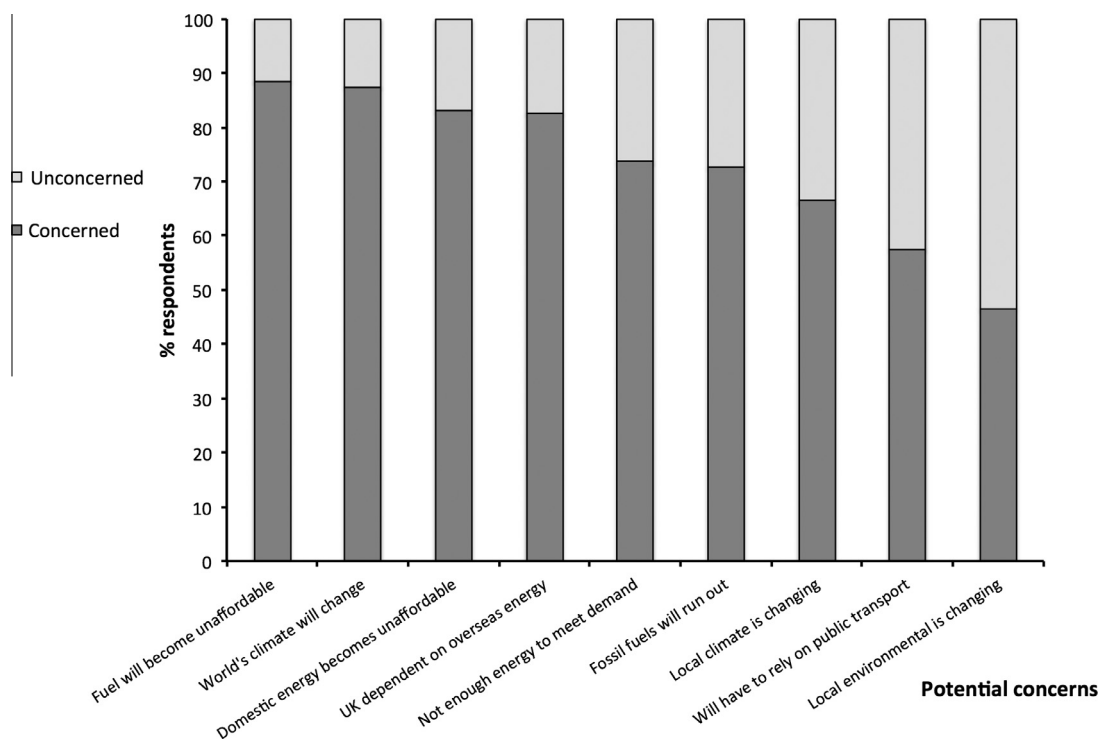


Fig. 10. Attitudes to climate change and energy.

using a range of psychological devices, including self-justifying narratives. Hards (2012) presents an over-view of the potential of narrative approaches to over-come problems associated with deficit interpretations, suggesting that narratives provide a means of recognising the context of actions, and associated 'lock-ins', emphasise the temporalities of engagement and disengagement, and stress the experiential and emotional dimensions of decision-making and actions. She also reviews the origins and development of narrative approaches, suggesting that whilst emerging in literary criticism their use in social science has taken a range of forms, including "highly-technical linguistic analysis

that focuses on structure to more interpretive approaches that focus on content ... [and] forms [that] address how narratives are performed" (Hards, 2012, p. 762). As discussed in Phillips and Dickie (2014, p. 90, quoting Wiles et al., 2005), the concept of narrative is "both simple and complex", being conceptualised minimally as involving people 'telling stories' that connect a sequence of events or situations but which may also be viewed as "both a mode of representation and a mode of reasoning ... with respect to difficult and intense emotional concepts". This emphasis on narratives as a mode of reasoning to the self about cognitively difficult and/or affective issues is particularly significant in relation to

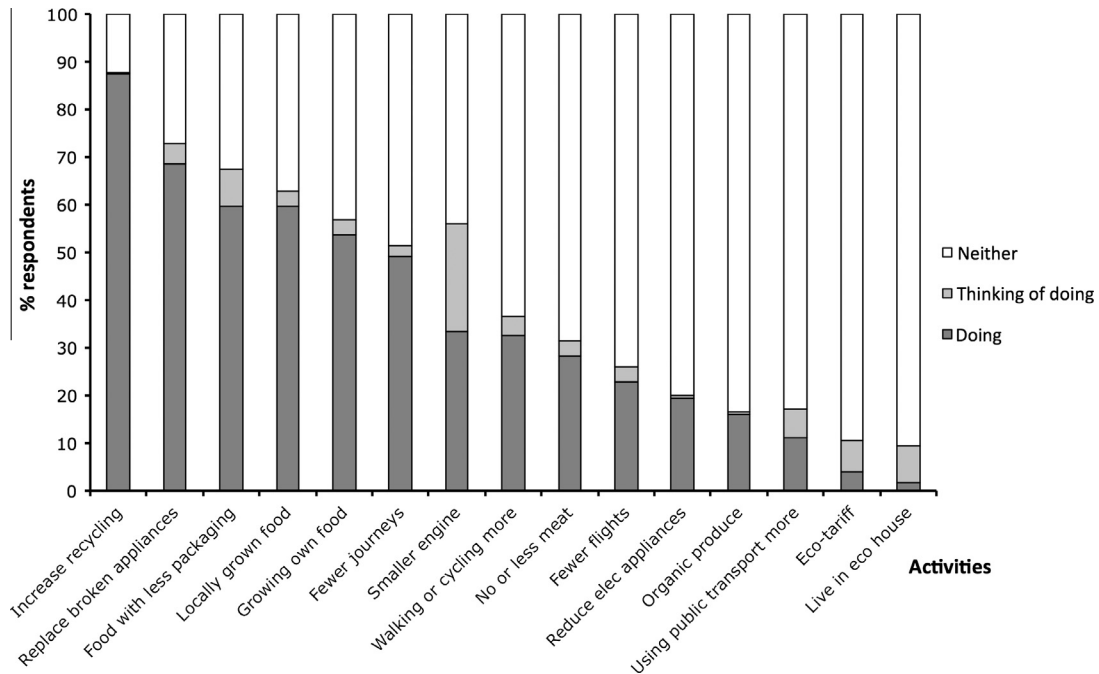


Fig. 11. Engagement with environmental activities.

disjunctures between attitudes and beliefs given the arguments of Stoll-Kleemann et al. (2001), Lorenzoni and Hulme (2009) and Norgaard (2011) about the cognitive and affective recognition of such dissonances.

Hards (2012) focused her work on the use of narratives across the life-course, an approach widely adopted in areas of geography such as migration studies (e.g. Lawson, 2000; Miles and Crush, 1993; Ní Laoire, 2014, 2007). She notes, however, Gudmundsdottir's (1996) claim that people often "spontaneously produce narratives" when interviewed (Hards, 2012, p. 762). Following Polkinghorne (1995b) and Smeyers and Verhesschen (2001), these might be described as 'prosaic narratives' whereby people undertake more than simple reportage of views, events or practices, but also provide reasons for presenting these accounts, or as Polanyi (1985, p. 13) puts it, make "the relevance of the telling clear". Such narratives can be seen as distinct from, although potentially contributing to, more structured narratives that seek to give senses of overall meaning, through "linking diverse events . . . into unified and understandable wholes" (Polkinghorne, 1995a, p. 136).

Hards' lifecourse analysis, like many narrative studies of migration, focused on these broader narratives, although this analysis was based upon the identification of commonalities and developmental differences across smaller prosaic narratives created through interviews. A similar approach is taken by Mills (2001, p. 298), who suggests that narratives can be seen to operate in two ways within interviews: "Brief stories could be located within each interview; subsequent reflection on each interview revealed . . . larger overall narratives". These studies, hence, suggest that interviews, including potentially those conducted through a questionnaire that contained a large number of open questions, are accessible to narrative analysis.

Drawing on such arguments, the transcripts of questionnaire interviews were analysed using NVivo to identify prosaic narratives whereby people provided some form of evaluation, justification or legitimisation of the relationships between their stated attitudes and beliefs concerning climate change and energy challenges. We then considered if more overarching narratives about transition and stasis emerged, either sequentially through the

course of interviews and/or as common elements across interviews. The next section will outline the results of this analysis, giving details of the gender, age, NS-SEC class, and the District in which the respondents lived.

4. Narratives of transition and non-transition

Examination of interview transcripts suggested at least eight distinct narratives about relations between awareness and action were being enacted with respect to climate change and energy. The first, more extensive group, were narratives of stasis, or non-transition, whereby people provided arguments as to why they, and/or others, would not change their behaviour, whilst in the second group people outlined reasons why they had or would alter their behaviour.

4.1. Narratives of stasis

One of the most widespread responses to questions relating to people's awareness and behavioural responses were narratives highlighting the presence of uncertainty and interpreting this as a reason for inactivity. The presence of uncertainties over the occurrence and impacts of climate change and the value of low-carbon energy production technologies has been widely recognised. Whitmarsh (2009, 2011), for example, highlights ambiguities surrounding the meanings people attach to the term climate change, suggesting that outright denial of anthropogenic-created climate change is much less widespread than expressions of uncertainty about its extent and causes. This argument bears similarities with Lorenzoni and Hulme's (2009) identification of a 'doubting' attitude to climate change, whilst Whitmarsh et al. (2011b) make similar remarks in relation to understandings of carbon.

Many residents across the study villages expressed uncertainty and ambiguity about climate change and energy technologies, often linking this with claims that the need or direction of change was so uncertain that action was irrational until greater certainty was evident.

"I'm in two minds about climate change and the rising of sea levels: it's either going to happen or scientists are scaremongering and it's not going to happen, in which case it'll be much the same as it was before" (Retired man, NS-SEC 1.2, East Lindsey); "Well if you believe what you read in the newspapers it's human activity but I don't really know, I'm a little bit on the fence about it to be quite honest" (Man, age not given, NS-SEC 4, East Lindsey);

"you get conflicting information, 'cause there are people saying ... we have got global warming, but there doesn't seem particularly to be evidence of that ... Some people say it's a myth and some people say it isn't" (Retired man, NS-SEC 1, Harborough).

Doubt and uncertainty are not exclusively expressed within narratives of stasis. They are, for instance, central components in arguments for change related to the 'precautionary principle' that has infused not only policy and legal discourses on climate change but also public understandings (see Adams, 2002; Kasemir et al., 2000; O'Riordan and Cameron, 1994). However, in the case study villages it appeared that doubt and uncertainty were predominantly used within narratives of stasis concerning climate change and carbon dependency.

In addition to people expressing uncertainty about climate change and low-carbon technologies, there were articulations of views consistent with Lorenzoni and Hulme's (2009) 'denial' category, exhibiting the literal form of denial identified by Norgaard (2011). Hence, as illustrated below, there were explicit rejections of climate change and movements away from carbon-based energy, the former being considered as either unlikely to occur or having little impact, whilst the need for carbon reduction or the ability of renewable technologies to deliver claimed benefits were rebuffed.

"I think we've been sold a pup on wind farms. You pay when they're switched off because it's too windy and most of the time they're not running because it's not windy enough ... everything is imported, most of the blades are made from plastics ... made from oil" (Man, 61–65, NS-SEC 4, Harborough);

"I have very, very, very strong views on global warming ... Climate change is a very new science. It is developing rapidly as it is trying to scare the life out of everybody ... [Q]uite frankly I have noticed no changes and whilst I believe there's a risk of change, I believe we will happily compensate for it" (Man, 41–50, occupation not given, West Berkshire);

"the investment in building these bloody things [windfarms] ... I don't think it'll ever ... pay off, ... never mind the really, really sad impact it has on the landscape ... I think the whole thing is a con" (Retired woman, NS-SEC 2, West Berkshire).

Whilst many of these expressions of denial were vehemently made and constituted a clear narrative of stasis, they were less widespread than expressions of uncertainty leading to inaction. They were also less common than a third narrative of stasis, in which people did not explicitly reject ideas of climate change or low carbon transition but instead appeared unable to see or imagine such change. Norgaard (2011, p. 91) has argued that some people exhibit 'selective cognition' in relation to climate change, effectively blocking out or "distancing themselves from information" in order, so she argues, "to maintain coherent meaning systems ... desirable states ... or a sense of self-efficacy". Cognition is, Norgaard claims, conditioned by emotion, cultural norms and identities, an argument that potentially connects to the significance of rurality within many expressions of what we might describe as a narrative of non-recognition.

A series of studies have highlighted how rural spaces are often conceived as places of the historic, the pre-modern, the timeless

and/or the unchanging (see Murdoch and Pratt, 1993; Phillips et al., 2001; Short, 1991). Indeed, Ward and Ray (2006, p. 7) argue that dominant imaginaries construct the rural as "essentially the antithesis of change". Whilst it is important to recognise alternative strands within conceptualisations of rurality (see Matless, 1994), it was certainly evident that many thought their settlements were unchanging, a status they could not conceive altering in the future, even in the face of challenges such as climate change and peak oil:

"it's not changed much in the 11 years I've been here and I can't think of a lot is going to happen" (Retired man, NS-SEC 2, Berkshire);

"I don't think this village has changed much since the middle ages ... I think it is timeless round here ... and there is no reason for it to change" (Woman, 51–60, NS-SEC 2, East Lindsey); "I can't imagine it [changing]. ... It is like a bubble ... so it is difficult to see how the bigger trends that are going to affect the rest of the country will play themselves out here" (Retired man, NS-SEC 1, West Berkshire).

Norgaard (2011) suggests cognitive selectivity can stem from feelings of fear and helplessness that are psychologically managed by blocking thoughts of change threatening a person's 'ontological security'. The significance of rurality as a space seen to be distanced from the mobility and change that characterises the contemporary world has been highlighted within a series of studies (e.g. Cloke et al., 1995, 1998; Halfacree, 1997, 1998). Such a perspective, whilst analytically questionable, is clearly evidenced in many of the quotes listed above and can be seen to inform the narratives given by many rural residents. Conceiving rural areas as unchanging places gives people a sense of ontological security that acts, in Norgaard's (2011, p. 146) terms, as a 'tool to order', allowing people to assert the possibility of stability and continuity in the face of the process of change that they fear.

Norgaard (2011, p. 54) argues that rurality also acts as a 'tool of innocence', with symbolic associations with nature, simplicity, purity and connections to land, creating a "kind of moral order" distancing rural people from responsibility to act on climate change. She argues, for instance, that notions of rural people living simple lives close to nature are used to construct narratives of innocence, such that "despite their rising materialism, petroleum development, and wealth" rural residents are "natural environmentalists" who are amongst those least responsible for climate change. There were certainly responses that identified the presence and causes of climate change and energy shortages, and indeed mitigative and adaptive responses, with places and people distant from rural England:

"If it's true what they put in the paper, the Arctic places are defreezing quite quickly and I think it is caused by people like the Chinese who have no responsibility at all, just out to make money" (Retired woman, NS-SEC 3, West Berkshire);

"I think it's a thing you can't really do much about, I mean totally I'm convinced about global warming ... but I just feel that too many of the figures have been massaged together [in] a global imprint or a global idea of what's happening. I would very much like to see the Indians and Chinese and Russians show a bit of concern to the world's climate, 'cause I'm convinced these are the places where, if there is global warming, that's the first place you should go, to the developing countries" (Retired man, NS-SEC 2, East Lindsey);

"I think cities will change and large towns will change, I think they will change much more ... I think the strong identity of rural village life is such that there is an inbuilt reluctance to change" (Man, 41–50, NS-SEC 2, West Berkshire).

A fourth narrative of stasis centred around a desire to simply keep things as they are, which can be seen as a variant of [Lorenzoni and Hulme's \(2009\)](#) 'disinterested' category of response, corresponding closely with [Stoll-Kleemann et al.'s \(2001, p. 107\)](#) 'comfort interpretation' of inactivity. Within this narrative, people were more content with their current situation than with prospects of having to change. It was clear that many residents had invested materially and psychologically in their current place of residence and lifestyle, and did not wish to see these being changed:

"truthful answer, I don't want to think about it ... I think there will be some huge changes and I hope there won't be" (Man over 65, NS-SEC 4, East Lindsey);

"I hope [the village will be] not a lot different, I really hope ... I don't always like to think too far ahead to what the future holds, it will make me worry" (Woman, 41–50, NS-SEC 5, East Lindsey);

"It is ... perfect ... we'd certainly hope it will be the same. I mean we arrived 10 years ago so ... if it has changed significantly in 8 years, when it hasn't changed, so far as we can tell, in the last 10, I'll be rather sad" (Retired woman, NS-SEC 2, West Berkshire);

"I think people, us down here, are trying to keep it traditional ... we ... don't like change ..., and that is one big thing you'll find with a village like this" (Woman, age not given, NS-SEC 1.2, East Lindsey).

A fifth narrative involved acceptance that some form of transition was needed, but people not seeing how they personally could change, or effect the required level of change:

"I do have twinges, very small twinges, of guilt when I hop on an aeroplane, but my attitude, I guess the way I justify it to myself is, you know, it's there, and me stopping doing it is going to make a minute change, although I do feel that if everybody took that attitude nothing would change" (Woman, 51–60, NS-SEC 2, Harborough);

"I would quite like ... rain water harvester ... but I wouldn't like the thought of putting it into this house because of the cost of converting everything" (Woman, 31–40, NS-SEC 2, West Berkshire);

"I just have this wishy-washy middle class Western European view that it's awful and something ought to be done about it. Not to the extent of doing too much to change my own behaviour ... [L]iving where we live, we have to drive motor cars, we have to burn some kind of fuel" (Man, age not given, NS-SEC 4, West Berkshire).

Such accounts resonate with the descriptions of 'doing their best' and 'too busy to change' Greenaware segments, which are both seen to exhibit awareness and acceptance of climate change and carbon issues whilst being car reliant and finding it difficult to reduce their usage. Interviews suggested that people with such views often constructed narratives to the self exhibiting at least one of the three "closely interlinked interpretations" of denial identified by [Stoll-Kleemann et al. \(2001, p. 112\)](#): namely an unwillingness to give up customary habits and favoured lifestyles (the 'comfort interpretation' mentioned above); claims of a disjuncture between personal costs and public benefits, with the former outweighing the latter; and calls upon the power of technology and state regulation to solve the problems of the future, a perspective clearly enacted in the following resident's account of their concerns and actions with respect to energy and climate futures:

"I am concerned but I think it is in the gift of the government to do something about it ... they will come up with something, the

technology is there, the oil companies just don't want to press the 'go' button" (Man, 31–40, NS-SEC 2, Harborough).

Arguments such as this can be interpreted as expressions of 'structurally nested ambivalence' as outlined by [Carolan \(2010\)](#), whereby an individual's response to issues is strongly conditioned by their assessment of their social agency vis-à-vis that of other social agents.

The five narratives of stasis are far from mutually exclusive and people often combined them when giving accounts of their attitudes to climate change and carbon-dependency. The narratives, in many instances, clearly extended beyond issues of cognitive awareness that form the focus of deficit models of public understanding, to encompass issues of identity, morality and, as [Norgaard \(2011, p. 80\)](#) puts it, a series of "troubling emotions" including insecurity, guilt, helplessness and loss. Many of these emotions and associated affective relations surfaced at most only fleetingly, and far from mimetically within spoken narratives (see [Phillips, 2014](#)), with narratives acting as mechanisms for managing emotional aspects of disjunctures between thought and action.

4.2. Narratives of transition

Given the low level of mitigation and adaptation activities previously documented, narratives of stasis were unsurprisingly widespread in the case study villages. There were, however, also people who enacted what might be described as more 'transitional narratives' in which change from the current situation was envisaged, if not necessarily welcomed. At least three such narratives could be identified.

First, some people clearly held the view that change was inevitable and therefore stasis was impossible. These views were often expressed in narratives that positioned rural areas as places subject to wider and stronger forces that bring about change irrespective of their internal dynamics. Remarks were made such as:

"The only thing we can say about the future is that it'll be different to what it is now. If there's no climate change I think there's ... going to be a need for more housing ... I think that's inevitable, if there's more people there's going to be more houses and they're going to expand the existing areas of housing rather than start a completely new town somewhere" (Retired man, NS-SEC 1.2, East Lindsey);

"I think it will be different ... it has already changed probably over the last twenty or thirty years ... there is less employment in the village and I think that will continue and ... it will become much more of a dormitory type village ... I couldn't imagine living here 70 years ago, it would be a different world, it would be like a different planet, so I can only assume that is potentially what will happen in 70 years time" (Man, age not given, NS-SEC 2, Berkshire);

"I think in 2020 it will be owned by hardly any farmers, ... just be one big ... company running the whole show. I can see that happening around here. I don't think there will be many youngsters, young people here ... in years to come, because of the lack of work ... it will definitely change" (Retired man, NS-SEC 6, East Lindsey).

In such accounts, change was not necessarily welcomed, and indeed there were traces of many of the 'troubling emotions' that underlay some narratives of stasis. However, in these narratives of transition, change was seen as something that would have to be accepted or accommodated in some way or another, a viewpoint clearly articulated by a resident in one of the Lincolnshire villages:

"If it's going to flood, it's going to flood, I was here when the East Coast flooded in 1953 ... [B]y today's costs, it was billions and

billions of pounds put into creating a floodwall ... well they should have let it go you know and moved everybody, because it's just costing too much. I think if it's going to flood, let it flood and move somewhere else" (Man over 65, NS-SEC 4, East Lindsey).

A second set of narratives of transition could be described as utopian, in that change was seen as potentially improving existing conditions, even though change might not be explicitly advocated:

"I guess it might be more self-sustainable, I think that might be the way things might go... it will be more efficient I hope, efficient in terms of energy production" (Man, over 40, NS-SEC 4, East Lindsey)

"I think it's probably quite a forward looking village so maybe more... energy efficient ways ... of heating our homes, ... more people growing their own vegetables" (Woman, 31–40, NS-SEC 2, West Berkshire);

"I think ... the concept of the private car will go away. ... They'll be communal schemes for transport that will link you into transport hubs ... by 2020 ... we'll all be using electric ... or very efficient cars. But certainly by 2050 they'll be a centralised transport system. And it certainly won't involve private cars, I'm sure of it. They'll still be things with four wheels but I don't think individuals will own them in the way that we do. I think they'll be shared resources ... they'll be more working from home and more centres of people working remotely, but ... they'll be great efforts to preserve what is seen as a village and the countryside that surrounds it" (Man, 41–50, in paid employment but occupation not given, Berkshire).

These accounts were more positive than those in narratives stasis, or indeed the narrative of inevitability of change. However, as Kraftl (2007) has noted, whilst utopian narratives often posit some comforting endpoint they frequently simultaneously imply an unsettling of the present. Conversely, whilst it is clearly possible to view the narratives of stasis negatively – as implying a failure to recognise the need for change – many also involved positive emotional and affective relations with the present.

People who explicitly argued for change related to carbon dependency and climate change constituted a final narrative. These people were in a minority in the survey, a finding that parallels, to some extent, the GreenAware characterisation of the villages, whereby only a small percentage were identified as 'convinced consumers' within the West Berkshire village. We, however, found people across our case study Districts arguing, often in highly articulate and passionate ways, about the need for action and change:

"We do try and make fewer car journeys ... We avoid packaging like the plague, we buy fresh foods ... We have a policy in our family where we try and buy as locally grown as possible, during summer we grow as much as we can ourselves. ... We recycle virtually everything we can. We make the house as eco as well as we can in a 300 year old house, we have deliberately not bought things like dishwashers and tumble driers and we only have one telly, we don't have a microwave" (Man, 41–50, NS-SEC 4, East Lindsey Village 2);

"My concerns are mainly to do with the future, I worry myself sick, I watched that ... 'Age of stupid', I was really upset, I cried afterwards ... here I am flying and I feel bad about it every time ... I am an eco-queen, I have recycled for years ... I hated the fact that there was these landfills and England being a country that's not very big and everyone just dumps so we've got mountains and mountains of everything ... Regardless of what the outcome may or may not be, do you not think even if you did recycle and you cut back on energy consumption and your

water consumption, that at the end it would always be good regardless of what the outcome is. It's a good thing and so I have, you know, I do get a real bee in my bonnet on many aspects" (Woman, 41–50, NS-SEC 6, Harborough).

5. Conclusion

This paper explored the carbon dependency of life in four villages located in contrasting Districts of England and the degree to which residents were aware of and concerned about this dependency both with respect to energy availability and its impacts upon the climate. It highlighted heavy reliance on carbon-based energy for rural living, with this being marked most strongly amongst higher socio-economic groups, and a relative lack of mitigative and adaptive actions. This does not mean people were unaware or unconcerned about issues such as energy security and climate change, nor indeed were unaware or unconcerned about the discrepancy between their expressed attitudes and actions. A key claim of this paper is that people often construct narrative explanations to themselves, and to others, about why they are not enacting changes in their behaviour that their own beliefs would suggest they should be. The research lends weight to O'Brien's (2012, p. 588) arguments that studies of transition could pay greater attention to how people, "individually and collectively", approach issues of change, including why "change is so often resisted or impeded".

Five distinct narratives of non-transition or stasis were identified, centred on the presence of uncertainty, inability to observe or conceive of change, preference for the present, the difficulties of enacting change and, in a small number of cases, outright rejections of calls for change. It has been argued that representations of rurality as places of limited or no change, as well as material and emotional investments in rural places, played a strong role in fostering the second and third narratives of stasis, whilst emotional and affective relations played a significant role across all the narratives.

Whilst narratives of stasis predominated, there were people who articulated narratives of transition. Three specific narratives of change were identified: one drew upon notions of the inevitability of change, another centred on how change could bring about beneficial improvements, and a third focused specifically on issues of low-carbon transition and climate change. The first narrative often presented rural areas as places subject to external forces that could not be resisted, the second often stressed contemporary rural problems but foresaw these as potentially transformed for the better in the future, whilst the third appeared to involve a series of 'disturbing emotions' including worry, guilt and anger.

Such emotions have been seen by Stoll-Kleemann et al. (2001) and Norgaard (2011) as underpinning narratives of inaction, which act to manage or normalise these emotions through channelling them into socially acceptable forms of expression. Other work on environmental activism and pro-environment behaviour (e.g. Brown et al., 2012; Brown and Pickerill, 2009; Meijnders et al., 2001) has highlighted the significance of emotion and affect within such activity. This study suggests that there is value in continuing both sets of work, it having been shown that particular emotions were not necessarily associated with activity or non-activity, and indeed as the remarks of Latour (2012) demonstrated, one might question dualistic conceptions of activity and non-activity in relation to climate change given that we are all failing to exert control over human impacts upon the climate.

Many failings can be viewed as a consequence of material conditions that limit possibilities of acting on values, and it was clear that people across the four villages made use of such arguments.

The narratives by which people explained why it was ‘too difficult to change’ clearly identified a series of practical constraints to action, although this research highlighted other constituents of narratives of stasis.

One of these elements, the presence of considerable uncertainty and confusion about climate change and its links to carbon dependent lifestyles, has been widely recognised (e.g. Geoghegan and Leyshon, 2012; Lorenzoni et al., 2007). Whilst exponents of deficit interpretations often respond by arguing for more clarity and certainty in the construction of climate and carbon knowledges (see Hulme and Mahony, 2010), other researchers (e.g. Brace and Geoghegan, 2011; Hulme, 2008; Hulme et al., 2009) highlight how uncertainty is built into research on climate change and carbon emissions. Such arguments suggest that an emphasis on greater clarity and certainty could be misleading, but also imply greater attention might be paid to encouraging responses that do not entail inactivity until resolutions of certainty are achieved.

This research also argued for the adoption of psycho-social interpretations of uncertainty. Reference was made to Norgaard's (2011) arguments concerning the way emotional desires for ‘ontological security’ and ‘moral order’ could condition responses to ambiguities and uncertainties. Attention was also drawn to the ways actions could be conditioned by emotional and affective relations people have with particular practices and locations. It was evident that some residents were quite fearful of what the future might hold for their lives, and the lives of others, in the countryside. Whilst for some, such feelings surfaced, albeit far from mimetically, in explicit denials of transition, in many cases they were manifested more as a desire to avoid conscious reflection on the future and changes in practice that might disrupt contemporary conditions of rural life. Representations of rural life as unchanging certainly provided an important outlet for such feelings, not least through facilitating narratives of non-recognition and/or distancing, whereby climate change and the challenges of a carbon society were located elsewhere than rural space. Such constructions might well be described as ‘selective cognitions’ (Norgaard, 2011). As such they may be seen to have some foundation in the conditions of life as experienced by the residents in rural spaces within the minority world – as Roelvink and Gibson-Graham (2009, p. 146) remark, many consumers are “shielded by ... geography” from the worst environmental effects – but these narratives clearly occlude as well as represent these conditions. However, simply highlighting deficiencies in understanding are unlikely to impact such narratives, unless attention is also paid, as Norgaard (2011, p. 210) argues, to the socio-psycho processes from which “[c]ognition, awareness and denial emerge”.

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References

- Adams, M., 2002. The precautionary principle and the rhetoric behind it. *J. Risk Res.* 5 (4), 301–316.
- Armstrong, F., 2009. *The Age of Stupid*. Spanner Films, London.
- Barr, S., Gilg, A., 2007. A conceptual framework for understanding and analyzing attitudes towards environmental behaviour. *Geografiska Annaler B* 89 (4), 361–379.
- Barr, S., Gilg, A., Shaw, G., 2006. *Promoting Sustainable Lifestyles: A Social Marketing Approach*. Final Summary Report. University of Exeter, Exeter.
- Barr, S., Gilg, A., Shaw, G., 2011. ‘Helping people make better choices’: exploring the behaviour change agenda for environmental sustainability. *Appl. Geogr.* 31 (2), 712–720.
- Betsill, B., Bulkeley, H., 2007. Looking back and thinking ahead: a decade of cities and climate change research. *Local Environ.* 12 (5), 447–456.
- Brace, C., Geoghegan, H., 2011. Human geographies of climate change: landscape, temporality, and lay knowledges. *Prog. Hum. Geogr.* 35 (3), 284–302.
- BRE Housing, 2008. *A Study of Hard to Treat Homes using the English House Condition Survey*. Defra & Energy Saving Trust, London.
- Brown, G., Kraftl, P., Pickerill, J., Upton, C., 2012. Holding the future together: towards a theorisation of the spaces and times of transition. *Environ. Plan. A* 44 (7), 1607–1623.
- Brown, G., Pickerill, J., 2009. Space for emotion in the spaces of activism. *Emot., Space Place* 2, 24–35.
- Bulkeley, H., 2000. Common knowledge? Public understanding of climate change in Newcastle, Australia. *Public Understand. Sci.* 9, 313–333.
- Bulkeley, H., Broto, V.C., Edwards, G., 2012. Bringing climate change to the city: towards low carbon urbanism? *Local Environ.* 17 (5), 545–551.
- Buttel, F., Flinn, W., 1978. Social class and mass environmental beliefs: a reconsideration. *Environ. Behav.* 10 (3), 433–450.
- Carolan, M., 2010. Sociological ambivalence and climate change. *Local Econ.* 15 (4), 309–321.
- Clarke, N., 2011. *Inhuman Nature: Sociable Life on a Dynamic Planet*. Sage, London.
- Cloke, P., Phillips, M., Thrift, N., 1995. The new middle classes and the social constructs of rural living. In: Butler, T., Savage, M. (Eds.), *Social Change and the Middle Classes*. UCL Press, London, pp. 220–238.
- Cloke, P., Phillips, M., Thrift, N., 1998. Class, colonisation and lifestyle strategies in Gower. In: Boyle, M., Halfacree, K. (Eds.), *Migration to Rural Areas*. Wiley, London, pp. 166–185.
- Cohen, S., 2001. *States of Denial: Knowing About Atrocities and Suffering*. Polity, Cambridge.
- CRC (Commission for Rural Communities), 2007. *The State of the Countryside 2007*. Countryside Agency Publications, Wetherby.
- CRC (Commission for Rural Communities), 2008. *The State of the Countryside 2008*. Countryside Agency Publications, Wetherby.
- CRC (Commission for Rural Communities), 2010. *The State of the Countryside 2010*. Countryside Agency Publications, Wetherby.
- Davis, M., 2010. Who will build the ark? *New Left Rev.* 61, 29–46.
- Defra (Department for Environment Food and Rural Affairs), 2008. *Distributional Impacts of Personal Carbon Trading*. HMSO, London.
- Diamantopoulos, A., Schlegelmilch, B., Sinkovics, R., Bohlen, G., 2003. Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation. *J. Bus. Res.* 56, 465–480.
- Dulal, H.B., Brodnig, G., Thakur, H.K., Green-Onoriose, C., 2010. Do the poor have what they need to adapt to climate change? A case study of Nepal. *Local Environ.* 15 (7), 621–635.
- Dunlap, R., McCright, A., 2008. Social movement identity: validating a measure of identification with the environmental movement. *Soc. Sci. Quart.* 89 (5), 1045–1065.
- Farrington, J., Farrington, C., 2005. Rural accessibility, social inclusion and social justice: towards conceptualisation. *J. Transp. Geogr.* 13, 1–12.
- Franzen, A., 2003. Environmental attitudes in international comparison: an analysis of the ISSP Surveys 1993 and 2000. *Soc. Sci. Quart.* 84 (2), 297–308.
- Franzen, A., Meyer, R., 2010. Environmental attitudes in cross-national perspective: a multilevel analysis of the ISSP 1993 and 2000. *Eur. Sociol. Rev.* 26 (2), 219–234.
- Future Foundation, 2002. *Scenario Building for Twenty Year and Fifty Year Futures*. Department for Environment Food and Rural Affairs, London.
- Geels, F.W., 2002. Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. *Res. Policy* 31 (8), 1257–1274.
- Geels, F.W., 2010. Ontologies, socio-technical transitions (to sustainability), and the multi-level perspective. *Res. Policy* 39 (4), 495–510.
- Geoghegan, H., Leyshon, C., 2012. On climate change and cultural geography: farming in the Lizard Peninsula, Cornwall, UK. *Climate Change* 113 (1), 55–66.
- Giddens, A., 2009. *The Politics of Climate Change*. Polity, Cambridge.
- Gilg, A., Barr, S., Ford, N., 2005. Green consumption or sustainable lifestyles? Identifying the sustainable consumer. *Futures* 37, 481–504.
- Grin, J., Rotmans, J., Schot, J., Geels, F.W., Loorbach, D., 2010. *Transitions to Sustainable Development: New Directions in the Study of Long Term Transformative Change*. Routledge, London.
- Gudmundsdottir, S., 1996. The teller, the tale, and the one being told: the narrative nature of the research interview. *Curriculum Inq.* 26 (3), 293–306.
- Hadfield-Hill, S., 2013. Living in a sustainable community: new spaces, new behaviours? *Local Environ.* 18 (3), 354–371.
- Haidera, M., Alhakimi, S.A., Noaman, A., Al Keksi, A., Noaman, A., Fencl, A., Dougherty, B., Swartz, C., 2011. Water scarcity and climate change adaptation for Yemen's vulnerable communities. *Local Environ.* 16 (5), 473–488.
- Halfacree, K., 1997. Contrasting roles for the post-productivist countryside: a postmodern perspective on counterurbanisation. In: Cloke, P., Little, J. (Eds.), *Contested Countryside: Otherness, Marginalisation and Rurality*. Routledge, London, pp. 109–122.
- Halfacree, K., 1998. Neo-tribes, migration and the post-productivist countryside. In: Boyle, P., Halfacree, K. (Eds.), *Migration into Rural Areas*. Wiley, London, pp. 200–214.

- Hards, S., 2012. Tales of transformation: the potential of a narrative approach to pro-environmental practices. *Geoforum* 43 (4), 760–771.
- Harvey, D., 2015. *Seventeen Contradictions and the End of Capitalism*. Profile Books, London.
- Higgs, G., White, S., 1997. Changes in service provision in rural areas. Part 1: the use of GIS in analysing accessibility to services in rural deprivation research. *J. Rural Stud.* 13 (4), 441–451.
- Hobson, K., 2003. Thinking habits into action: the role of knowledge and process in questioning household consumption practices. *Local Environ.* 8 (1), 95–112.
- Hulme, M., 2008. Geographical work at the boundaries of climate change. *Trans. Inst. British Geogr.* 33 (1), 5–11.
- Hulme, M., Dessai, S., Lorenzoni, L., Nelson, D., 2009. Unstable climates: exploring the statistical and social constructions of 'normal' climate. *Geoforum* 40 (2), 197–206.
- Hulme, M., Mahony, M., 2010. Climate change: what do we know about the IPCC. *Prog. Phys. Geogr.* 34 (5), 705–718.
- Inglehart, R., 1981. Post-materialism in an environment of insecurity. *Am. Polit. Sci. Rev.* 75 (4), 880–900.
- Jamison, A., 2014. Climate change knowledge and social movement theory. *Wiley Interdiscip. Rev.: Climate Change* 1 (6), 811–823.
- Kasemir, B., Schibli, D., Stoll, S., Jaeger, C., 2000. Involving the public in climate and energy decisions. *Environment* 42 (3), 32–42.
- Kemp, R., Schot, J., Hoogma, R., 1998. Regime shifts to sustainability through processes of niche formation: the approach of strategic niche management. *Technol. Anal. Strategic Manage.* 10 (2), 175–198.
- Kraft, P., 2007. Utopia, performativity and the unhome. *Environ. Plan. D: Soc. Space* 25, 120–143.
- Latour, B., 2012. Waiting for Gaia. Composing the common world through arts and politics. *Equilibri* 16 (3), 515–538.
- Lawhon, M., Murphy, J., 2011. Socio-technical regimes and sustainability transitions: insights from political ecology. *Prog. Hum. Geogr.* 36 (3), 354–378.
- Lawson, V., 2000. Arguments within geographies of movement: the theoretical potential of migrants' stories. *Prog. Hum. Geogr.* 24 (2), 173–189.
- Lorenzoni, L., Hulme, M., 2009. Believing is seeing: lay people's views of future socio-economic and climate change in England and in Italy. *Public Understand. Sci.* 18, 383–400.
- Lorenzoni, L., Nicholson-Cole, S., Whitmarsh, L., 2007. Barriers perceived to engaging with climate change among the UK public and their policy implications. *Global Environ. Change* 17, 445–459.
- Lowe, P., Bradley, T., Wright, S., 1986. *Deprivation and Welfare in Rural Areas*. GeoBooks, Norwich.
- Lowe, P., Ward, N., 2009. England's rural futures: a socio-geographical approach to scenarios analysis. *Regional Stud.* 43 (10), 1319–1332.
- Magrath, J., 2010. The injustice of climate change: voices from Africa. *Local Environ.* 15 (9–10), 891–901.
- Matless, D., 1994. Doing the English Village, 1945–90: an essay in imaginative geography. In: Cloke, P., Doel, M., Matless, D., Phillips, M., Thrift, N. (Eds.), *Writing the Rural: Five Cultural Geographies*. Paul Chapman, London, pp. 7–88.
- Meijnders, A., Midden, C., Wilke, A., 2001. Role of negative emotion in communication about CO₂ risks. *Risk Anal.* 21 (5), 955–966.
- Miles, M., Crush, J., 1993. Personal narratives as interactive texts: collecting and interpreting migrant life-histories. *Professional Geogr.* 45 (1), 84–94.
- Miller, S., 2001. Public understanding of science at the crossroads. *Public Understand. Sci.* 10, 115–120.
- Mills, J., 2001. Self-construction through conversation and narratives in interviews. *Educ. Rev.* 53, 285–301.
- Moseley, M., 1979. *Accessibility: The Rural Challenge*. Methuen, London.
- Murdoch, J., Pratt, A., 1993. Rural studies: modernism, postmodernism and the 'post rural'. *J. Rural Stud.* 9 (4), 411–427.
- Ní Laoire, C., 2014. 'Settling back'? A biographical and life-course perspective on Ireland's recent return migration. *Irish Geogr.* 41 (2), 195–210.
- Ní Laoire, C., 2007. To name or not to name: reflections on the use of anonymity in an oral archive of migrant life narratives. *Social Cultural Geogr.* 8 (3), 373–390.
- Norgaard, K., 2011. *Living in Denial: Climate Change, Emotions and Everyday Life*. MIT Press, Cambridge, Massachusetts.
- Norton, A., Leaman, J., 2004. *The Day After Tomorrow: Public Opinion on Climate Change*. MORI Social Research Institute, London.
- Nye, M., Whitmarsh, L., Foxon, T., 2010a. Sociopsychological perspectives on the active roles of domestic actors in transition to a lower carbon electricity economy. *Environ. Plan. A* 42 (3), 697–714.
- Nye, M., Whitmarsh, L., Foxon, T., 2010b. Sociopsychological perspectives on the active roles of domestic actors in transition to a lower carbon electricity economy. *Environ. Plan. A* 42, 697–714.
- O'Brien, K., 2012. Global environmental change III: closing the gap between knowledge and action. *Prog. Hum. Geogr.* 37 (4), 587–596.
- O'Riordan, T., Cameron, J., 1994. *Interpreting the Precautionary Principle*. Earthscan, London.
- Phillips, M., 2014. Baroque rurality in an English village. *J. Rural Stud.* 33, 56–70.
- Phillips, M., Comber, A., Dickie, J., Harper, D., Jarvis, C.H., Kaduk, J., Page, S., Pickerill, J., 2012. *Adaptations to Rural Communities through Living with Climate Change: Final Report to ESRC*. University of Leicester, Leicester.
- Phillips, M., Dickie, J., 2012. *Energy, Housing and Agriculture in three English Rural Districts, Adaptations to Rural Communities through Living with Climate Change: Rural Economy and Land Use Programme*. University of Leicester, Leicester.
- Phillips, M., Dickie, J., 2014. Narratives of transition/non-transition towards low carbon futures within English rural communities. *J. Rural Stud.* 34, 79–95.
- Phillips, M., Fish, R., Agg, J., 2001. Putting together ruralities: towards a symbolic analysis of rurality in the British mass media. *J. Rural Stud.* 17 (1), 1–27.
- Pickerill, J., 2010. Building liveable cities: urban low impact developments as low carbon solutions? In: Bulkeley, H., Broto, V.C., Hodson, M., Maerlin, S. (Eds.), *Cities and Low Carbon Transitions*. Routledge, London, pp. 178–197.
- Polanyi, L., 1985. *Telling the American Story*. Ablex, Norwood.
- Polkinghorne, D., 1995a. Narrative and self concept. *J. Narrat. Life History* 1 (2–3), 135–154.
- Polkinghorne, D., 1995b. Narrative configuration in qualitative analysis. In: Hatch, J., Wisniewski, R. (Eds.), *Life History and Narrative*. Falmer Press, London, pp. 5–23.
- Poortinga, W., Pidgeon, N., 2003. Public Perceptions of Risk, Science and Governance: Main Findings of a British Survey of Five Risk Cases. University of East Anglia and MORI, Norwich.
- Poortinga, W., Pidgeon, N., Lorenzoni, L., 2006. Public perceptions of nuclear power, climate change and energy options in Britain: summary findings of a survey conducted during October and November 2005. Technical Report Understanding Risk Working Paper 06-02. Centre for Environmental Risk, University of East Anglia, Norwich. <http://www.esds.ac.uk/doc/5357/mrdoc/pdf/5357userguide.pdf>.
- Poortinga, W., Spence, A., Whitmarsh, L., Capstick, S., Pidgeon, N., 2011. Uncertain climate: an investigation into public scepticism about anthropogenic climate change. *Global Environ. Change* 21, 1015–1102.
- Punch, S., 2000. Children's strategies for creating playspaces: negotiating independence in rural Bolivia. In: Holloway, S., Valentine, G. (Eds.), *Children's Geographies: Playing, Living, Learning*. Routledge, London, pp. 41–53.
- Roelvink, G., Gibson-Graham, J.K., 2009. A postcapitalist politics of dwelling: ecological humanities and community economies in conversation. *Austral. Hum. Rev.* 46, 145–158.
- Samdahl, D., Robertson, R., 1989. Social determinants of environmental concern: specification and test of the model. *Environ. Behav.* 21 (1), 57–81.
- Sanne, C., 2002. Willing consumers or locked-in? Policies for a sustainable consumption. *Ecol. Econ.* 42, 273–287.
- Seyfang, G., Haxeltine, A., 2012. Growing grassroots innovations: exploring the role of community-based initiatives in governing sustainable energy transitions. *Environ. Plan. C: Govern. Policy* 30, 381–400.
- Seyfang, G., Haxeltine, A., Hargreaves, T., Longhurst, N., 2010. Energy and communities in transition: towards a new research agenda on agency and civil society in sustainability transitions. CSERGE Working Paper EDM, No. 10–13. University of East Anglia, Norwich. http://csERGE.ac.uk/sites/default/files/edm_2010_13.pdf.
- Short, J.R., 1991. *Imagined Country: Society, Culture and Environment*. Routledge, London.
- Shove, E., 2003. *Comfort, Cleanliness and Convenience: The Social Organization of Normality*. Berg, Oxford.
- Shove, E., 2010a. Beyond the ABC: climate change policy and theories of social change. *Environ. Plan. A* 42, 1273–1285.
- Shove, E., 2010b. Social theory and climate change questions often, sometimes and not yet asked. *Theory, Culture Soc.* 27 (2–3), 277–288.
- Shove, E., 2012. The shadowy side of innovation: unmaking and sustainability. *Technol. Anal. Strategic Manage.* 24 (4), 363–375.
- Shove, E., Pantzar, M., Watson, M., 2012. *The Dynamics of Social Practice: Everyday Life and How it Changes*. Sage, London.
- Shove, E., Walker, G., 2010. Governing transitions in the sustainability of everyday life. *Res. Policy* 39 (4), 471–476.
- Shove, E., Walker, G., 2014. What is energy for? Social practice and energy demand. *Theory, Culture Soc.* 31 (5), 41–58.
- Smeyers, P., Verhesschen, P., 2001. Narrative analysis as philosophical research: bridging the gap between the empirical and the conceptual. *Int. J. Qualit. Stud. Educ.* 14 (1), 71–84.
- Smith, A., Stirling, A., Berkhout, F., 2005. The governance of sustainable sociotechnical transitions. *Res. Policy* 34, 1491–1510.
- Smith, A., Voss, J.-P., Grin, J., 2010. Innovation studies and sustainability transitions: the allure of the multi-level perspective and its challenges. *Res. Policy* 39 (4), 435–448.
- Spaargaren, G., 2003. Sustainable consumption: a theoretical and environmental policy perspective. *Soc. Nat. Resour.* 16, 687–701.
- Spaargaren, G., 2011. Theories of practices: agency, technology, and culture: exploring the relevance of practice theories for the governance of sustainable consumption practices in the new world-order. *Global Environ. Change* 21 (3), 813–822.
- Stoll-Kleemann, S., O'Riordan, T., Jaeger, C., 2001. The psychology of denial concerning climate mitigation measures: evidence from Swiss focus groups. *Global Environ. Change* 11 (2), 107–117.
- Sturgis, P., Allum, N., 2004. Science in society: re-evaluating the deficit model of public attitudes. *Public Understand. Sci.* 13 (1), 55–74.
- Summerfield, A., Lowe, R., Bruhns, H., Caeiro, J., Steadman, J., Oreszczyn, T., 2007. Milton Keynes Energy Park revisited: changes in internal temperatures and energy usage. *Energy Build.* 39 (7), 783–791.
- Svensson, E., 2012. Achieving sustainable lifestyles? Socio-cultural dispositions, collective action and material culture as problems and possibilities. *Local Environ.* 17 (3), 369–386.

- Swyngedouw, E., 2010. Apocalypse forever? Post-political populism and the spectre of climate change. *Theory, Culture Soc.* 27 (2–3), 213–232.
- Tindall, D., Davies, S., Mauboulés, C., 2003. Activism and conservation behavior in an environmental movement: the contradictory effects of gender. *Soc. Nat. Resour.* 16 (10), 909–932.
- Trier, C., Maiboroda, O., 2009. Green Village project: a rural community's journey towards sustainability. *Local Environ.* 14 (9), 819–831.
- Unruh, G., 2000. Understanding carbon lock in. *Energy Policy* 28, 817–830.
- Upham, P., 2012. Environmental citizens: climate pledger attitudes and micro-generation installation. *Local Environ.* 17 (1), 75–91.
- Upham, P., Whitmarsh, L., Poortinga, W., Purdam, K., Darnton, A., McLachlan, C., Devine-Wright, P., 2009. Public attitudes to environmental change: a selective review of theory and practice. A Research Synthesis for the Living with Environmental Change Programme. Research Councils UK, Swindon. <http://www.esrc.ac.uk/files/public-engagement/public-dialogues/full-report-public-attitudes-to-environmental-change/>.
- Van Liere, K., Dunlap, R., 1980. The social bases of environmental concern: a review of hypotheses, explanations and empirical evidence. *Public Opin. Quart.* 44 (2), 181–197.
- Wainwright, J., Mann, G., 2013. Climate leviathan. *Antipode* 45 (1), 1–22.
- Wainwright, J., Mann, G., 2015. Climate change and the adaptation of the political. *Ann. Assoc. Am. Geogr.* 105 (2), 313–321.
- Wall, E., Marzall, K., 2006. Adaptive capacity for climate change in Canadian rural communities. *Local Environ.* 11 (4), 373–397.
- Ward, N., Ray, C., 2006. The futures of rural policy: the significance of rural futures studies. Centre for Rural Economy Discussion Paper Series No. 7. University of Newcastle, Newcastle upon Tyne. <http://www.ncl.ac.uk/cre/publish/discussionpapers/pdfs/dp7.pdf>.
- White, S., Guy, C., Higgs, G., 1997. Changes in service provision in rural areas. Part 2: changes in post office provision in mid-Wales: a GIS-based evaluation. *J. Rural Stud.* 13 (4), 451–465.
- Whitmarsh, L., 2009. What's in a name? Commonalities and differences in public understanding of 'climate change' and 'global warming'. *Public Understand. Sci.* 18, 401–420.
- Whitmarsh, L., 2011. Scepticism and uncertainty about climate change: dimensions, determinants and change over time. *Global Environ. Change* 21, 690–700.
- Whitmarsh, L., O'Neil, S., Lorenzoni, I., 2011a. Climate change or social change? Debate within, amongst, and beyond disciplines. *Environ. Plan. A* 43, 258–261.
- Whitmarsh, L., Seyfang, G., O'Neill, S., 2011b. Public engagement with carbon and climate change: to what extent is the public 'carbon capable'? *Global Environ. Change* 21, 56–65.
- Wiles, J., Rosenberg, M., Kearns, R., 2005. Narrative analysis as a strategy for understanding interview talk in geographic research. *Area* 37 (1), 89–99.