

Article

Perspectives on Sustainability: Exploring the Views of Tenants in Supported Social Housing

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*Received: 13 May 2013; in revised form: 21 November 2013 / Accepted: 21 November 2013 /
Published: 9 December 2013*

Abstract: Government policy aimed at curbing carbon emissions often focusses on encouraging individual action, however the effectiveness of this approach has been limited. Investigations of why this might be have included segmentation, to identify different groups who undertake more or less action, and analysis of various “barriers” to action. Those on lower incomes who are not home owners have previously been found to be less engaged in seeking out energy efficiency information. Working with low-income tenants living in supported social housing we conducted three group interviews, accompanied by a 7-item scale measuring general attitude towards the environment. The interviews were aimed at opening up discussion about environmental and energy issues, including exploring more deeply what, for these participants, underlies barriers to conservation behaviours. We found participants to be very willing to engage in conversation and knowledgeable about a range of relevant issues. Barriers explored include: lack of confidence in existing levels of knowledge, habit, self-interest and lack of agency, and in all cases several different perspectives were voiced by participants. Implications for policy, interventions and public engagement are given, including ways to increase dialogue and reflection on sustainability issues for all sectors of society.

Keywords: households; energy use; motivations; barriers; social housing; environment

1. Introduction

Energy use within households currently accounts for just under a third of total energy use in Britain [1]. Alongside plans for transport, industry, and electricity generation, the promotion of energy efficiency within households is a central plank in the UK government's strategy to meet its carbon emissions reduction targets [2], as committed to in the Climate Change Act of 2008. A significant proportion of UK government policy aimed at curbing carbon emissions is focussed on the promotion of individual action, and encouraging lower-carbon choices. Surveys repeatedly show that the majority of the public do have a degree of personal concern about climate change, and a significant percentage profess a willingness to change their own behaviour to help limit climate change, including more efficient energy use within the home. In a 2011 UK survey, Shuckburgh *et al.* found 63% of respondents were either "fairly" or "very" concerned about climate change, and 69% agreed with the statement "I would be prepared to change my behaviour to help limit climate change" [3]. However, there is also the perception of an apparent lack of action, and lack of appetite, at the individual level in actually *switching* to more pro-environmental behaviours. For example Lorenzoni *et al.* state that a focus at the policy level on "*voluntary* reduction of energy use by individuals, encouraged through provision of information and economic incentives and subsidies...seems to have had little or no impact on individual behaviour" [4].

To better understand factors which may affect whether individuals undertake personal action or not some survey studies have used segmentation to assess whether different groups of people are more or less likely to feel concerned about environmental issues, such as climate change, and/or take action as a result [5]. This approach can also be seen in policy documents, such as the UK's Department of Food and Rural Affairs' (Defra's) seven-group segmentation from the "positively greens" to the "honestly disengaged" [6]. In these studies, attempts are made to link demographics to environmental attitudes and behaviours, but are often not able to more deeply explore the issues underlying the survey responses with particular groups. There has also been much research in recent years working to identify the "barriers" to pro-environmental behaviours in both specific and general situations—if we believe that people are willing to change their behaviour, but are not actually doing so, what is stopping them? The two aims of this paper are therefore to explore the views of a particular group—those living in supported social housing on lower incomes, with less formal education—who have been less represented in the literature to date, and secondly to highlight some of the barriers which were most top-of-mind for our participants, and illustrate how they were seen from multiple perspectives within the conversations. We next outline previous research in both of these areas.

1.1. Previous Research with Lower Income Groups

One of the key contributions of this paper is to reflect, and reflect on, the voices of a group which have been less well represented to date within the qualitative pro-environmental and energy conservation behaviour academic literature. Our participants were drawn from the population of three small blocks of flats providing supported social housing. They had low incomes, were not home owners, and had generally not received education beyond GCSE/O-Level (age 16), although some were undertaking further training. Previous survey-based demographic studies have found that people

in these groups may be less engaged in “environmental” issues, and less likely to seek information about energy efficiency measures [7]. For example, Barr *et al.* [8] explored the demographics of “energy savers” through a survey and cluster analysis of 1265 households in Devon, UK. They found that “non-environmentalists” were least likely to own their own home, and most likely to be on low incomes, however we note that this group also included more people on high incomes than other groups. Interestingly the group of “committed environmentalists” both included a greater proportion of those who had had no formal education, and those who had degrees. Barr *et al.* also reviewed previous work in this area and identified a set of factors which had been consistently identified as indicating a greater likelihood to undertake energy saving behaviours: home ownership, higher income (or socio-economic status), smaller household size and increased age of head of household. Dillman [9] has found those on lower incomes were more likely to undertake “lifestyle cutbacks”—*i.e.*, direct changes to everyday actions—but less likely to purchase energy saving items.

Fuel poverty is an issue which rightly receives a lot of attention, at policy level and within academic research. It is seen as both linked to housing carbon emissions, and of a different nature, for example involving shorter term impacts and sometimes therefore attracting short term solutions [10]. Many environmental initiatives aimed at giving information on how to reduce energy consumption (and therefore bills) in more systemic ways (such as improvements to building fabrics) tend to attract those on higher incomes, who are home owners. In a study of households in Virginia, USA, Emmel *et al.* [7] concluded that “educational efforts should be directed at renters and those with the lowest incomes. These two groups perceive the largest energy cost burdens, yet they are not making the efforts they could to save additional energy” also noting that “a possible explanation is that these low-income households may think they are doing all they can and they do not feel they would be able to improve their energy management practices”.

One of the few studies we have found to have worked specifically with these harder to reach groups was undertaken by the organisation ReachAbility in Oxford, UK, in 2010 [11]. They ran several workshops for those living in particular housing estates, users of homeless hostels, and elderly people in rural Oxfordshire at risk of social exclusion. ReachAbility saw a key role of the workshops to be to build confidence and empowerment. Key findings included that learners enjoyed working in small groups in a safe learning environment, and that “most learners we worked with at grassroots level had a good overall grasp of what is happening *i.e.*, that climate is changing and there will be impacts. They however were often confused and/or sceptical about why *i.e.*, the causes of climate change and unaware of the timescales involved”. Their work was a pilot study testing course materials about climate change, rather than an exploration of pre-existing views. Our study therefore aimed to reflect and explore in more depth, using primarily qualitative methods, the views of a particular group within society.

1.2. Previous Research on Barriers

Research by psychologists into the barriers to pro-environmental behaviours amongst individuals has been ongoing for several decades. For example, in 2002 Kolmuss and Agyeman [12] identified a range of barriers which might help explain the “attitude-behaviour gap” commonly observed. As referenced above, in 2008 Defra produced a “Framework for Pro-Environmental Behaviours” [6], which outlined many of the typical barriers often identified, including: external factors (such as

available infrastructure and financial constraints), impacts on time and freedom (reduced convenience), habitual behaviour, apathy towards change, maintaining one's self-identity, scepticism around the climate change debate and distrust of both government and industry, and disempowerment. More recently, in 2011, Gifford [13] provided a review of 29 barriers which limit climate change mitigation and adaptation behaviours, organised under seven overarching themes. It is commonly recognised that barriers vary between individuals, that change is not usually effected by removing one of these barriers alone (a combination may be needed), and also that addressing these barriers is a complex matter which may require a range of strategies [14,15].

The removal of barriers is currently seen by policymakers as a necessary requirement in the "behaviour change" process. For example, the current UK government's central strategy for achieving the desired improvements in household energy efficiency is the "Green Deal", a scheme through which energy efficiency measures (for example, solid wall insulation) can be installed at no upfront costs to the householder, instead being paid back over time through energy bills. The Green Deal is a prime example of an attempt to overcome, through policy, identified barriers to the uptake of energy efficiency measures, such as the availability of financial capital. Indeed, the government's Green Deal proposal (2010) states "...building on our knowledge of the barriers, the Green Deal is structured around consumer and business needs, because this will ensure widespread uptake..." [16].

However a second line of academic argument, more commonly, but not exclusively, found within the sociological literature, posits that the "value-behaviour" gap which a barrier-based analysis is aimed at explaining is only "mystifying if we suppose that values do (or should) translate into action" [17]. In her 2010 paper, Shove expresses the view that if one is seeking cause-and-effect type relationship to explain specific behaviours, one needs to be able to decide whether something qualifies as a barrier or not, whereas within the existing psychology- and policy-based literature one person's "barrier" may be described as the next person's "motivator". For example, "self-identity" is seen to be categorised in the literature as either a barrier or motivator, depending on the situation. Shove also focusses on the example of "habit" as being labelled as a "barrier to pro-environmental behaviour", but which is actually an aspect of behaviour itself, not some external factor. An alternative is to take a more circular view of values and behaviours as self-reinforcing and co-constructing, as proposed by Hards [18], and that our practices are "continually made and re-made" through our action of undertaking them.

Whether or not barriers can be clearly identified and categorised, the fact remains that people's perception of these barriers is real. What is meant by a barrier is not always explicitly defined in papers on the topic, presumably as it is seen as a self-evident everyday term. In this paper, when analysing material from the group interviews, we were most interested in participants' perceived barriers, *i.e.*, reasons or explanations that they gave verbally for why a pro-environmental behaviour is not or was not undertaken (either experienced by themselves or perceived as affecting others) even while a certain amount of desirability of that behaviour was also recognised. We also know that some people manage to undertake pro-environmental behaviours despite the existence of similar barriers to those who feel unable to. There is a gathering body of work from researchers who have interviewed people who are making very large and active pro-environmental choices in their lives [19,20]. It is not clear whether those who choose to make such changes are able to do so because in fact many (even if not all) of the barriers in fact objectively do not exist for those people (such as a lack of capital) and/or because their subjective attitude to the existing barriers is different. If the latter (that barriers are subjective entities) is

part of the reason for differences in different people's responses to their experience of barriers, the question remains—is this position of empowerment to make pro-environmental choices currently achievable by a wide sector of the population? The fact that barriers can be very individual with underlying complexity suggests that they should not be taken at face value.

There has been less research undertaken to date, within the field of environment psychology, exploring people's awareness of their own barriers, and how they themselves view them. We propose that many people do have awareness of multiple aspects of their own and others' behaviour, and can identify these, but do not always "piece the jigsaw together". This is what we set out to illustrate with the material highlighted in this paper. Our thesis is that, when explored with individuals, many of the "barriers" commonly identified are seen from several different perspectives, which may be useful in the promotion of pro-environmental behaviours.

2. Method

2.1. Participants

The data derive from three group interviews with participants living in three blocks of housing association owned flats which provide sheltered housing in a town in Norfolk, UK, as well as a 7-item scale testing environmental attitude completed by the participants. The tenants are people who had previously been homeless, or experienced unstable housing situations. Most of these tenants had previously stayed in a hostel (owned by the same housing association) for a period and had been deemed capable to manage within a sheltered housing community. The sheltered housing provides support for its residents who are able to live independently but are not yet able to be fully self-sufficient.

Each block consists of 6–12 small flats, managed by the independent housing organisation. There is significant current interest, at both a policy and academic level, in the potential for greater energy efficiency retrofitting of social housing properties, which represent a large segment of the UK housing stock and also encompass many fuel poor households [10], and thus this group of tenants were part of a wider population of particular interest, especially to housing associations. In the East of England there are approximately 125 sheltered housing "estates" of which some are specifically for single mothers and families (www.homeless.org.uk). Some of the flats in the three blocks are two-bedroomed, and shared between two occupants, some are one-bedroomed individual flats. Typically tenants live in these flats for between six months and a year before moving on to rent their own place. Hence the blocks of flats are a "stepping stone" to becoming once more fully integrated into society. The tenants are mainly men aged between 18–64, with a mean age of around 36.

Contact with potential participants was made via the on-site service manager. All tenants from the three blocks of flats were asked if they wished to take part, and the majority who were able to participate did so (the flats are generally not fully occupied at any one time, and some occupants were attending training, work or visiting family when the group interviews were conducted). An opportunistic sampling method for the group interviews was therefore employed. Working with a potentially vulnerable population, some of whom suffer from mental health or drug/alcohol related issues, it was deemed best to use an opportunistic method as it meant that if any of the participants were on the day of the interview dealing with personal difficulties of any kind they did not have to take

part. The three group interviews therefore consisted of between two and four participants (nine in total), and the demographics of participants well represented the wider population of the flats. Although this is a small sample, the purpose of the research was not to produce specific generalisable results, for example regarding the precise barriers identified, but rather to explore the process of discussion with a particular demographic group, in a setting which allowed for greater participation of each tenant. Seven participants were male and two were female, reflecting the typical split in the flats. We note here that both women were in the same group interview with one man, and thus two groups were all male (and all were with a female interviewer). This was in part due to availability of individual participants. The overall dynamics of the three groups, including gender dynamics, were reflected upon by the researchers and are discussed in Section 3.1. below. The ages of participants ranged from 21 to late fifties/early sixties, with two participants in their twenties, two in their thirties, three in their forties, and two over fifty. Participants came from a range of different backgrounds in that they had different life experiences regarding education, employment, marriage, children, mental health problems, and drug abuse. Part of the requirements to live in the flats is that tenants must engage in support activities to combat any mental health or drug related problems. The educational qualifications of the group were generally around Diploma/NVQs or GCSEs/O-Levels, and income levels were low. Participants had a range of employment backgrounds, for example from services such as retail, and industry. Most were in paid or voluntary employment or undertaking further training at the time.

2.2. Procedure

The group interviews were part of a wider tenant engagement programme, ongoing over two years, which is accompanying the installation of air source heat pumps in the flats. This installation took place in the months following these discussions, and thus the results presented here do not include their experiences of that process. Prior to participating in the research, all tenants went through a full consent procedure, including being informed about the nature of the project, that they were not obliged to take part, and that they could withdraw from the study at any time.

The interviewer firstly met with most of the tenants on a one-to-one basis, to run through a questionnaire recording environmental attitudes. Full information about the questionnaire construction will be given in a forthcoming publication. In brief: questions were constructed by using statements from other scales testing behaviours which impact on the environment. The statements were then presented to 16 undergraduate students who discussed their suitability for inclusion on our scale. The second author then edited the items for appropriate wording and a content validity was undertaken, resulting in a 69-item questionnaire. The scale was then administered to test for reliability and validity using Cronbach's alpha as well as a principal axis exploratory factor analysis with oblimin rotation leading to purification to 17 items. The 17-item scale was found to have a coefficient α of 0.88. Seven of the items were clustered into one factor deemed to measure overall environmental attitude (the one used for the purpose of comparison in this paper). This particular 7-item factor had a loading of above 0.7. In this paper we are simply using the results from the questionnaire to state whether participants had pro-environmental attitudes.

A group interview methodology was then employed with the aim of stimulating discussions with participants which could reveal perceptions and concerns that are not possible to explore in a survey. In particular, interviews allow people's emotional reactions to issues to surface to some degree [21]. We felt a group interview approach to be more suitable than individual interviews, as the other participants could provide support for each other and therefore increase the likelihood that they would be forthcoming with their thoughts and feelings, as well as providing a potentially friendlier and less intimidating atmosphere where they did not feel they were being put "on the spot". We felt this to be especially important for this group of participants. We also wanted to give some structure to the conversations, in terms of the interviewer providing particular prompt questions, and thus they were interviewer led, although each had periods of conversation directly between participants, as discussed in more detail in Section 3.1.

The interviews lasted between 30–45 min and were conducted in a meeting room that is part of the on-site manager and assistant's office, within one of the blocks of flats. They were designed to be appropriate to all participants, regardless of background. The group interviews were structured and made use of broad questions that would allow participants to speak about a wide range of topics under any one question. This was done through guiding them to discuss topics linked to the environment and sustainable living but providing them with the opportunity to state their own opinions and understanding without having to be constrained. All the interviews began with the question "Do you care about the environment?". Other questions included "Do most people in Britain care about environmental issues?" and "Do you think it's a good idea to monitor how much energy is used in a home?". Towards the end of the interviews the questions were a little more focussed but only in so much as that they steered them towards energy consumption. While the group interviews were guided by these questions, they were also allowed to develop according to the unique dynamics of each group discussion and the interviewer prompted participants to elaborate when suitable. Consequently, all the topics were not covered to the same depth with all three groups but provided us with enough information about their voiced thoughts and feelings so that they could be categorized into themes. Participants were thanked for their time with a £5 supermarket voucher and refreshments during the discussion.

The interviewer stressed that she was interested in respondents' personal opinions on the issues covered. All three interviews were recorded and transcribed with participants' permission.

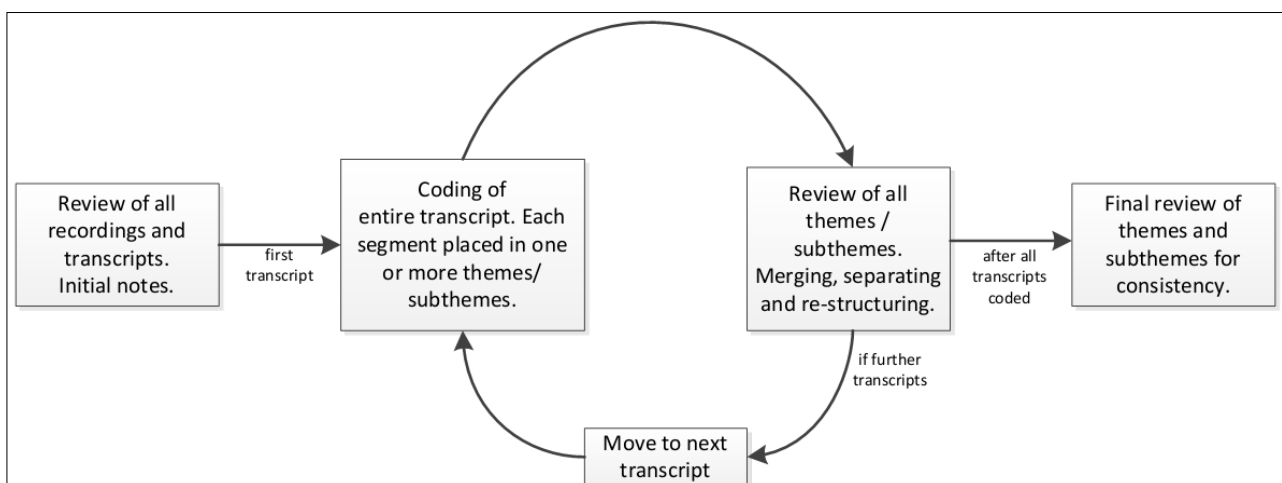
2.3. Data Analysis

A form of thematic analysis was used to analyse the data. Although the flexible and exploratory nature of qualitative data analysis means there is no exact "recipe", the procedures used closely followed the recommendations described in Braun and Clark [22], which has been very widely used by qualitative researchers [23,24]. Their approach to conducting thematic analysis consists of 6 steps, (1) familiarization of transcription and data; (2) coding of interesting features; (3) searching for themes; (4) inter-correlation of themes and coded extracts; (5) defining and naming themes and (6) production of the report. These are inter-related processes that occur cyclically throughout the analysis, ensuring that links between the data and emerging ideas are maintained throughout the process. Braun and Clarke's process carries the advantages of rigour and transparency, as well as

encouraging both description and interpretation. Hence the analysis is guided by previously identified areas of interest as well as allowing for unanticipated themes in the data to be given due prominence.

Data was analysed using NVivo software. The use of specialized computer software for qualitative analysis facilitates the systematic management of large amounts of data and the ability to continually check analytic procedures. There were three cycles to the data analysis, see Figure 1. The first part consisted of revisiting all the transcripts and audio recordings, and noting initial thoughts. The second cycle involved systematic coding of each of the transcripts, and was primarily descriptive in nature. Thirdly, following the complete coding of each transcript, the codes generated were revisited, to better combine, separate or structure the themes and subthemes. This process was more exploratory and data-driven. The three cycles were conducted by the first author, with results checked by the second author. The authors discussed the coding to ensure that they agreed each theme was sufficiently defined, so that it was clear what the themes were, and also sufficiently heterogeneous. This was done to ensure a degree of consensus in the interpretation, and provide a check on the analysis.

Figure 1. Illustration of the data analysis process.



3. Results and Discussion

We firstly discuss the group dynamics within each of the interviews in Section 3.1., before exploring the participants' apparent interest in and knowledge of the topics under discussion in Section 3.2. We next illustrate the different perspectives on barriers to action given during the conversations in Section 3.3. before lastly highlighting the importance of a particular aspect of different issues, that of their "visibility" in Section 3.4.

3.1. Group Dynamics

In this first results section we provide a brief discussion of the dynamics in each of the three group interviews, to set the scene and make some observations about the conduct of the conversations themselves. Group interview 1 (GI1, 42 min) consisted of four men, Trevor, Sebastian, Sam and Bill (we note that throughout this paper pseudonyms have been used). Sam was very engaged and talkative, often the first to respond to questions, and stepping in if there was a pause in the conversation. He related the conversation to wider issues, for example which had received media coverage. Trevor was a

more reserved member of the group, but always responded thoughtfully when brought into the conversation by someone else. He seemed particularly empathetic towards others, and came up with perhaps less “obvious” aspects of situations. Sebastian would also tend to wait to be brought into conversations. Particular issues seemed to be of importance to him, such as food waste, and he sometimes expressed frustration at why things were/weren’t done in certain ways. Finally Bill often used humour as a way to lighten the conversation (discussed below), and tended to give very quick and brief responses, often focussing on particularly visible aspects of situations (e.g., pollution)—discussed more in Section 3.4. He also prompted others to give their thoughts. As a group, all participants contributed, and gave each other time to respond to questions.

Group interview 2 (GI2, 33 min) consisted of both women, Sally and Antonia, as well as Ben. Ben was perhaps the quietest participant of the three groups. He did contribute, but was less forthcoming with his opinions or feelings. Interestingly, Sam and Ben, two younger men, were perhaps the most resigned in their attitudes—“it’s just the way it is” being an indicative comment. Antonia often related the questions to specific personal experiences she had had, and was willing to respond to questions, but sometimes openly saying she didn’t have any particular opinion. Sally was the most confident of the group, and seemed happy to give her thoughts, or explain why she didn’t have opinions about some things. She often followed up and clarified what others in the group had said.

Group interview 3 (GI3, 43.5 min) consisted of James and Alan. Probably due to its small size, this group had the most direct “conversation” between participants. Alan had much to say, often reflecting issues back fairly swiftly to how they would impact on him, or relating his personal experiences to the topics. James also related the topic of conversation to wider/global issues, as Sam had done. James was also particularly conscious of many aspects of issues such as climate change, and arguably expressed the most personal concern of all the participants. Although the smallest group, this was the longest interview. In terms of gender dynamics in the three groups, the interviewer did not feel there was a significant difference between the all-male groups (GI1 and GI3) and the mixed group (GI2), in terms of participants feeling comfortable contributing to the conversation, and giving each other respect and space to do so. However one could speculate that Ben might have been more talkative in a group with others of his own age and gender. In all the interviews the interviewer did provide a thread for the conversation and used follow-up prompts to encourage participants to elaborate on responses.

An interesting theme to emerge from the analysis was the use of humour within the conversations. For example in GI1, responses to the question “what can you do to reduce the amount of energy used in your home?” included “don’t make the tea!” (Bill) or “go round to everybody else’s!” (Sam), alongside less jocular responses. Humour served the purposes of enabling participants to talk more easily about the issues, give an initial reaction to potentially difficult questions, and reassure each other about their own behaviour. The everyday humour of these conversations seemed to be a potentially useful tool to keep conversation flowing in a positive way, and one which could be borne in mind when developing public engagement materials. Overall, we found participants to be happy to talk about and engage with these issues, when the conversation was brought to them and they were provided with prompts for topics of discussion or encouragement to follow-up on their initial comments. Opportunities for discussion which are easy to attend, within a familiar environment, and/or have some small incentive, may therefore be fruitful in furthering public engagement.

3.2. Interest in and Engagement with Environment and Energy Issues

In this section we cover two areas. Firstly the impression the interviews gave of participants' interest in the topics under discussion. This includes their views on whether the issues were important or not, in terms of whether one should act "pro-environmentally", together with the results of the accompanying questionnaire. Secondly, we discuss the levels of knowledge displayed by the participants regarding relevant issues.

As discussed in Section 3.1., all participants engaged with the conversations, and described their feelings, opinions and personal relevant experiences. They often expressed their own strong motivations, and desires to "do the right thing", or what they had been taught was right, even (or sometimes particularly) when they saw others not doing this. James said sometimes he'd been "really angry at myself" (GI3) after realising he'd left something switched on by accident. Some said they "should" know more than they did. Pro-environmental motivations mentioned by participants were often related to personal experience, for example previously doing a lot of fishing and observing negative trends in environmental conditions, being a "country lad" and getting pleasure from birdsong. There were also pro-social motivations mentioned, including considerations for the wellbeing of future generations, and issues of how one could feed a growing population.

At the same time, participants sometimes did express disinterest, or ambivalence towards the issues being discussed:

"I think most people in this day and age, a lot...I'd say about sixty per cent, care about themselves more, before they care about the environment. And I'm one of them as well, to be honest wiv ya. I want to save the environment but the cost..." —Alan, GI3

As can be seen from this quote, the desire to act pro-environmentally was sometimes seen to be constrained by other factors. That is, Alan did "want to" take positive action, however other aspects of a situation (such as cost) might take priority. When asked to reflect more broadly on the views of others, participants voiced the opinion that *some* other people did care about the environment, but some did not, and that this might depend on things like occupation, age, where they lived *etc.* Recognising our own mixed responses to situations and making the connection that others may be similarly affected by situational constraints may be helpful in resolving feelings of unfairness when others seem to take less action than ourselves, discussed in more detail in Section 3.3.3. below.

Alan's comments above, and participants' comments about others in general, could be interpreted as expressions of a degree of *apathy*. Ben also mentioned both the fact that damage had already occurred, and that it would not occur until some time in the future, in a disempowering light:

Ben: Yeah I do care about it but

RR: Yep.

Ben: It's already messed up as it is isn't it?

RR: Ok. What makes you say that? In what way?

Ben: Well I'm not gonna live long enough to see it really am I, but for like my kids and that, obviously want the environment to be like, good and that.—GI2

Discussion of more affect-based reasons for inaction are arguably under-represented within mainstream debate (e.g., policy, pro-environmental advertising campaigns *etc.*), although there is a growing body of research in this area [25–27] and some increase in awareness of this issue. In using the framework of “the myth of apathy” Lertzman [28] challenges the position that people “do not care” and instead highlights the range of emotions (e.g., denial, anxiety) which can underlie a seemingly disinterested exterior. This approach to apathy is reflected in related sociological studies that focus on how certain responses or emotional engagements may be socially produced [26,29].

A further measure of participants’ attitudes towards environmental issues was provided by our survey. All but one interviewee ran through our questionnaire measuring attitudes toward the environment and energy use with the interviewer, undertaken either one month prior to the interviews, or on the same day. Examples of questions included within the 7-item factor for environmental attitude were “I am interested in environmental issues” and “I believe that it is important to preserve the environment”. The survey’s Likert-scale ran from 1 (Disagree a lot) to 7 (Agree a lot). Adjusting the reverse scored questions appropriately, the mean for the 8 interview participant questionnaires was 5 out of a possible 7, indicating that the tenants had pro-environmental attitudes overall, although this was not extremely strong. The minimum value was 3.71 and the maximum value 7, and thus some participants tended towards non pro-environmental views whilst some held strongly pro-environmental views. As discussed in the introduction, those on low incomes, who do not own their own home, have been found in previous studies to be less engaged in environmental issues, however our results suggested that the majority still felt these issues to be of some interest and importance.

A secondary element which emerged from the interviews was around the level of knowledge our participants had (or felt others had) regarding environmental and energy issues. “Lack of knowledge” remains an attractive top-of-mind reason for why people do not act, and this was indeed a view which was voiced several times by the interview participants themselves. One participant expressed this view when explaining why people might use more hot water than perceived to be necessary:

Antonia: That’s wasting it. Using too much hot water when we don’t need to.

RR: Uh huh. But why do you think that is?

Antonia: I don’t know why...they’re probably not educated or they haven’t been taught it or just a lack of...no-one’s been taught it. —GI2

However, whilst expressing these views, the participants at the same time actually displayed both a broad awareness and knowledge, as well as an understanding of how one could become more informed, if one chose. Within these (short) group interviews, which did not include any prompt material, diverse issues of relevance to our use of resources were spontaneously mentioned, including: the trend of increased use of solar and wind energy, the existence of Feed-in-Tariffs, the effects of the weather on recent wheat harvests in the UK, the use of electric vehicles, comparison of the length of time for hardwood *vs.* softwood to grow, public opinion on genetically modified foods, the dilemmas posed by the use of pesticides *vs.* feeding a growing population, and China’s increasing coal consumption. In fact, participants perhaps lacked confidence in their existing levels of knowledge, and maybe wanted someone else to “tell” them the real answers, or teach them, before having permission to act:

“What is the difference using energy saving [items from] ordinary? If we don’t know the difference or we’re not taught it...we can’t sort of improve anything.” —Sally, GI2

A related strand of the interviews was around disempowerment, and that those in positions of power may put systems in place which then constrain our own actions, whereas ordinary individuals have limited power (although participants also recognised some level of responsibility which was shared between everyone). Implicit in this view of things is the view that we are not experts and depend on the information we get from others, although sometimes participants seemed to express a degree of scepticism about some of what they had heard.

There was also high awareness of the common subjects of energy saving campaigns: everyday actions one could do to save energy such as switching lights off, switching things off standby, turning the water off when brushing your teeth *etc.* These actions were front of mind for the participants when asked “what can you do to reduce the amount of energy used?”, whereas larger actions (e.g., driving less) took longer to be thought of, or were not mentioned at all. There has been an emphasis within environmental campaigns over past decades to concentrate on the “small steps” and these repeated messages evidently are picked up, although no specific campaigns were mentioned by name by participants.

Arguably, the knowledge the participants said they lacked would be available to them, if they were very determined to find it. Participants recognised a range of ways in which knowledge could be improved. Most notably, education (particularly in schools) was seen as an important route: “they learn this at schools nowadays, which I think is a good thing”, (James, GI3). However discussion of educational issues was tinged sometimes with a sentiment that, for those people who were beyond their schooldays, it would be much harder to obtain new knowledge:

“Even though they teach it at schools now...what about them people who you know have grown up and that and don’t know nothing about it?” —Antonia, GI2

However, James saw other routes for knowledge acquisition for adults: “I love debating to be honest with you. You learn a lot as well just from talking”. Here was a clear expression of a desire for knowledge, and the recognition of the personal benefit which can come from being more informed.

A common view, amongst academics, policy makers and also the general public, is that many other members of the general public lack “awareness”, in some sense, of either the existence of any “problems” regarding our current use of resources (such as resource limits, climate change *etc.*) or what can be done at a societal or individual level to address these issues (both policy and behavioural “solutions”). Moreover, it can be tempting to assume that this lack of knowledge is the primary factor in why these issues persist. In some ways this is a “no fault” view of others—it’s not that people don’t care, it’s that they don’t know. It is also true that there is a level of knowledge that is necessary in order to make informed behavioural choices. However, this “information deficit” model has been shown to be severely limited regarding issues with a scientific basis (such as health, climate change *etc.*). That is, provision of information which “should” (“rationally” speaking) lead to a change in behaviour, may not do so, in part due to more fundamental worldviews which underlie our stated attitudes [12].

We therefore hypothesise that, if the reality is that it is impossible to reach a point of perfect knowledge about any issue, including environmentally related issues, then feeling empowered that one

is able to learn more as and when needed may be the more useful position. We found our participants to be both interested in the issues, keen to behave in sustainable ways at least some of the time, and fairly knowledgeable already, in the sense of having a broad awareness of a wide range of relevant issues, but feeling they perhaps lacked the level of knowledge needed to act in some areas. A key conclusion is that a change of emphasis from solely increasing people's knowledge to increasing people's confidence in their existing knowledge, and their own ability to gain knowledge and become more informed, may be effective in enabling active behavioural choices.

3.3. Barriers to Action

One sub-theme of this paper is a focus on the many layered nature of the barriers to pro-environmental behaviour, as identified by the interview participants themselves. In our reading of these discussions, we recognised an awareness amongst participants of how some of the barriers often cited are in fact more nuanced and multi-faceted than they seem at first sight. Many “front of mind” explanations given by participants for why they or others act in certain ways were revisited and expanded upon elsewhere within the same discussion. In this section, we highlight in turn three of the commonly mentioned personal barriers to action (habit, self-interest and lack of agency), where several different perspectives were explicitly voiced by participants.

3.3.1. “Habit”

The explanation of “habit” for the participants’ own behaviour, or that of others, was repeated many times, in many forms. It was often referred to in the same breath as explanations such as people “don’t think”, “forget”, or are unaware. People are “set in their ways” (Alan, GI3), they “get into a routine... they just don’t understand” (Trevor, GI1). In another of the groups, when Antonia was (gently) challenged directly to explain why she had acted in a way which had been stated as not ideal, Sally stepped in and put it down to “habit”, perhaps partly again as this is a “no-blame” way of explaining actions:

Antonia: I do that. [Chuckle]

Sally: What turn it off, or leave it running?

Antonia: Leave it running.

Sally: Oooh!

RR: And why is that?

Antonia: Hmm?

RR: Why is that?

Antonia: Cos I clean my teeth and...

Sally: [cutting in]...it’s just habit to leave the tap on.

RR: Habit right.

Sally: But I do actually, switch mine off. —GI2

Alan also “admitted” to what he saw to be a non-environmentally friendly behaviour (leaving things on standby), explaining he “can’t help it”, (GI3). However, the very fact that Antonia and Alan had mentioned these behaviours at all showed that they were aware at some level, and at some times, of the behaviours. In this way there is more to the explanation of habit than first appears. Although we all

have habits which help us navigate the myriad decisions in day-to-day life, we also have the ability to bring some level of awareness to these habits. The very act of identifying a habit could be seen as a necessary step in deciding whether to change it. A further question this raises is whether and when we encounter the prompts to bring this awareness to the issue of energy conservation, which of course in this case was facilitated by the interview. These stimuli (be they conversations with other people, the media and so forth) may be more likely to be encountered or acted upon by some sections of the public, for example those in particular social groups, or for whom self-reflection is more habitual.

A second perspective on habit, which relates to wider issues of change at the societal level, was the observation that any change does take time. Sometimes a somewhat resigned view of the world or our own behaviour was voiced—it's just "how things are": "you're always going to throw away food no matter what you do" (Sam, GI1). However there was also a recognition that change does happen and has happened before—things today are very different in many ways to life previously. Sally expressed the opinion that it is always worth trying to change undesirable behaviours, even when they are heavily ingrained. When explaining that the elderly might not recycle as much as others because they never used to have to do so, she said:

Sally: So they won't sort of think to. It's like the saying you can't teach an old dog new tricks...but it's always worth a try. [Laughter]

RR: And do you think that's true?

Sally: Oh yes. It's always worth a try. —GI2

There was also mention of "good" habits participants had, such as never littering or never leaving things on standby. Alan for example provided an anecdote from his previous time in industry about the strict rules there for proper recycling of different items.

These observations highlight the need to think about when awareness of habitual behaviour might be prompted, and if there are useful ways of enabling reflection such as produced by these group interviews. The participants' discussion of the role of habit also involved the recognition that change doesn't happen overnight which can be useful to acknowledge when developing materials concerning change of personal behaviour. Finally, the active acknowledgement of the positive habits people already have may be a useful foundation to build upon, to help people further develop habits they see as positive.

3.3.2. "Self-Interest"

Here, we use the label "self-interest" to encompass a range of barriers mentioned. The increased ease or speed associated with taking one particular action (such as driving) over another (such as walking) was mentioned several times. A common accusation made of others for not "making more of an effort" towards energy reduction was that they were "lazy". However a further insight into this issue was put forward by Trevor who proposed that someone might make a decision for reasons of *immediate* self-interest, that are not in their *broader* self-interest, for example regarding their state of health. From a different viewpoint, this decision could be seen as potentially leading to less "comfort/ease" over time:

Trevor: A lot of people use their cars when they don't always have to—you know they could walk, or...could be healthier for them you know.

RR: And why do you think that is?

Trevor: They just...

Bill: Laziness

Sam: Laziness. [Laughter]

Trevor: Quicker to jump in the car and go out. Instead of walking...sort of thing.

RR: OK.

Trevor: Be healthier for them as well but sort of thing. —GI1

Other participants had stepped in fairly swiftly to label this behaviour as “lazy”, but Trevor saw another angle to it. He was sympathetic to the reasons why someone might choose to take the car, but also recognised there could be an actual cost to the individual of making that decision.

Immediate self-interest, rather than for example long term considerations, was also recognised as a reason behind the impactful actions of other countries, and the patterns of high consumption promoted by industry:

“You got places like China, Indonesia and places like that where they, they do that to keep their costs low so they can put their products out cheaper so they can...economy, it's all economy. Why should they worry about 200 years' time? They worry about now.” —Alan, GI3

Financial considerations were also a direct link made by participants between energy saving and immediate self-interest. When asked by the interviewer “do you think saving energy is important?”, Ben made this connection immediately, responding “yeah saving money” (GI2), following up secondly that it was also to “save the planet and all that”. However the flip side of this link was that if a pro-environmental behaviour was going to cost money, it might be very unattractive. Alan felt he would be much more prepared to give up his time than his money: “if it means that everyone's gotta go out for an hour picking up litter, then fine! ... It would cost you nothing.” (GI3). This approach was seen as more palatable for Alan, perhaps as he felt time was something he was able to give, whereas money was in shorter supply for him. This reflects the fact that the same monetary cost, or time donated, can be small for one person, but very large for another, and thus such demands are rarely equitable. A further consequence of linking energy savings primarily to financial motives was voiced by Alan, namely that if you do have money, why would you ever bother saving energy?:

“Cos I think the people with bloody money...I turn lights off because I'm trying to save me own bill. If people don't give two monkeys about leaving their lights on, cos they can afford to pay the bill...they're not worried.” —Alan, GI3

The question of whether using “intrinsic” motivations (e.g., “doing the right thing”), or extrinsic motivations (e.g., financial gain), impacts the effectiveness of pro-environmental messages is the subject of ongoing academic discussion [30]. Some limitations of using extrinsic motivations in achieving long term, large scale pro-environmental behaviours have been suggested [31], including the observation that if one appeals primarily to financial savings, what happens when a pro-environmental behaviour does actually cost more? It is therefore worth noting that some of these limitations were alluded to by participants within the discussions.

Within these conversations over self-interest therefore there seemed to be the beginnings of a debate about personal “short” and “long” term interests. A greater emphasis within public discussion of the *benefits* one might obtain personally (e.g., related to health) from making pro-environmental changes to behaviour may be merited. Secondly, some of the limitations of financial incentives in promoting pro-environmental behaviours were recognised by participants, and illustrate ways one might be able to talk about these limitations with the public.

3.3.3. “Lack of Agency”

The commonly voiced justification for inaction that “one person’s action on their own will not make an impact” was also repeated in these group interviews. In this way the actions of other people, other countries, or those in positions of power was seen to significantly affect the impact of one’s own actions. As Sally stated: “there’s only a certain amount of things I personally can do, but you know if no-one else is gonna do it it’s not gonna make any difference” (GI2). Alan spoke similarly regarding whether one person’s energy use would have an impact on the environment:

“Individually no but...if you were to put it all together then yeah. If you put the whole town together and everyone puts their things full on then yeah. It will affect it. One person’s thing won’t affect, but add it together and yeah...” —Alan, GI3

Sally went on to suggest that in some cases if *one* person wasn’t doing their bit that could severely negatively impact on the effectiveness of other people’s actions, even if there were (relatively) *many* of them:

Sally: Because you know say five people recycle but you get the one that doesn’t you know...It’s no benefit hardly really. To my way of thinking. You know everybody’s got to be together. —GI2

A further dimension to the “lack of agency” narrative was also recognised by Sally. This related to the wider impact our actions can have, beyond their direct consequences. She saw a strong factor behind our actions as being the social norms we observe, the fact that we copy those around us, whether we’re aware of it or not:

Sally: Rubbish on the floor, no-one thinks about it... you see kids doin’ it well obviously, they’re just following what the adults do ...

RR: Sure.

Sally: If you can sort of set the adults’ minds differently then they can actually teach the children differently but a lot of kids even though they know it’s wrong they still do it anyway. —GI2

Many of the participants had noticed specific actions of others, and had remembered them, therefore acknowledging that our own actions have implications beyond their immediate consequence. Thus there were two different perspectives given (in this case including by the same person) on the impacts of one’s own actions; both that they only made the difference of one person (or even less if others didn’t act), but also that they could potentially have wider impacts for those who observe our actions.

It is possible that participants’ perception that individual actions are not enough to make a significant difference is linked to perceptions of fairness, in that it is important that everybody

contributes equally and be treated the same. For example, one person should not necessarily have the right to consume more energy, or produce more waste, than another. If others are not “doing their bit” then we might feel resentful of having to do our bit. Alan started suggesting ways a more “fair” system might be enacted, through home energy rationing. Other research has found that concepts of fairness and equality (for example, for those in developing countries) can be very strong motivators for pro-environmental behaviours amongst individuals who have made significant life decision relating to energy use. Howell for example interviewed those who had made strong pro-active decisions regarding their carbon emission, with one participant saying “it is deeply unfair that parts of the world are going to suffer because of our needless consumption and unthinkingness” [20]. Thus discussions of fairness in terms of our own actions contain the seeds of a sentiment which has been found to be significantly motivating for pro-environmental behaviours: the recognition of the unfairness that those who suffer from the effects of climate change are not necessarily those whose actions contribute most to it.

Thus we firstly hypothesise that recognition of the “example” effect, how one’s actions are observed and copied by others, may be a useful tool in overcoming feelings of lack of agency. Secondly, by validating people’s feelings of a sense of fairness, which can be given as a reason not to act when others do not, it may be possible to tap into a strong pro-environmental motivator.

3.4. *Visibility of Issues*

Finally we touch on one further theme to emerge from the interviews: the importance of visible phenomena in conversations about the environment and energy use. When “the environment” was mentioned pollution was often top-of-mind for participants, with recycling and visible waste or rubbish seen as critical issues, although, as highlighted previously, many other behaviours relating to energy consumption did emerge throughout the conversations. Issues such as pollution and recycling are particularly tangible and real to people, and tended to receive more attention than other issues. For example, Bill frequently referred to visible aspects of energy use:

“Better for the air than burnin’ coal and all that for energy. That way the more energy you would use the more coal you would burn and more pollution you are causing.” —Bill, GI1

Thus some ways of generating energy were seen as inherently cleaner than others, but this was not necessarily to do with carbon emissions: “Batteries ... are cleaner innit.” (Bill, GI1).

Sometimes this tendency to focus on “pollution” for example, is seen in a negative light within the climate change debate, as it diverts attention from behaviours which appear to be “clean” but are in fact associated with high carbon emissions. Carbon emissions can of course be regarded as pollution—however they are invisible and intangible and have no direct health effects. Some have tried to tackle this, for example by producing visualisations of carbon emissions.

People also talked about their personal experiences with pollution or rubbish:

“I’m a great believer in environment. I used to do a lot of fishing ... but the fishing went right downhill ... that was through pollution ... and that really peeved me.” —Alan, GI3

As has been observed in other studies [3], recycling was also a top-of-mind issue when one mentioned “the environment”. A complaint sometimes made by those looking for large scale change is a focus by the general public on recycling as being a core aspect of “looking after the environment”.

The worry is that people will assume that by doing the recycling they are “doing their bit” and therefore don’t need to worry about the less convenient aspects of sustainability, such as tackling increasing transport emissions.

Rather than seeing a focus on pollution and recycling as an inhibitor, one could ask if it is possible to capitalise on the visible and use it as a mechanism for helping to explain environmental damage. The tendency to be able to relate better to the tangible seems to be a common human trait. But we are also able to make the intangible more tangible, e.g., through discussion, imagination, sharing human experience, narrative, and story.

4. Conclusions

Our aim in this paper was to illustrate that, even within relatively short conversations, with members of the public with a range of levels of interest in environmental issues who were of lower socio-economic status and within a potentially “hard to reach” population, and with no deliberative prompt material, a degree of recognition of the complexity of the question of why we do, or do not, engage in pro-environmental behaviours was readily apparent, and a number of key insights were voiced. This research was undertaken with a small group, and therefore can be seen in an exploratory light. Further research and testing of the suggested uses of these insights, in the form of policy interventions or the development of public engagement materials, would be needed to infer generalisability.

Our participants were arguably not in a position of significant empowerment within society, and it might be assumed that the wider repercussions of our energy use might not be a front of mind issue amongst this group as they might understandably have other priorities at this time in their lives. In fact our first finding was they were extremely willing to talk about issues regarding climate change, energy and food supply, and the wider societal issues they raise. Accessible opportunities for discussion (e.g., which are easy to attend, within a familiar environment) may be fruitful in furthering public engagement with all sectors of the population. Humour was also found to play an important role in keeping conversations engaging. In a later section, it was illustrated how more visible and tangible issues (e.g., pollution, recycling) can be easier to relate to, and we suggested that embracing this tendency to a certain extent may also be useful in furthering public dialogue.

In the conversations participants expressed their motivation to “do the right thing”, with pro-environmental attitudes also indicated by our questionnaire results, although there was also openness about sometimes feeling disinterest or ambivalence. We also found an arguably high level of awareness of many of the issues of key relevance to the energy/environment debate today. However participants perhaps lacked confidence in their existing levels of knowledge. Many participants expressed an interest and recognised a personal benefit *in itself* of becoming more informed. A key conclusion is that a change of emphasis from solely increasing people’s knowledge to increasing people’s confidence and their own ability to gain knowledge and become more informed, may be effective in enabling active behavioural choices.

We found people’s perception of the existence of barriers to action was readily apparent. However there were also common perceptions about why we, or others act, that are not necessarily borne out by the research, e.g., citing a “lack of education/knowledge” as one of the primary reasons for non pro-environmental behaviour. These reflect some of the same assumptions which are commonly made at

a policy level. We therefore propose that people are aware of the many factors at play, but also tend to make some overarching assumptions about both their own behaviour, and similarly, about the behaviour of others. These beliefs can be usefully examined through the notion of “folk psychology” [32], meaning our own ideas about human behaviour, based on our life experience. Our beliefs about the reasons why others act, or do not act, are to some degree informed by and reflect our own perceptions of why we act, although we can also make assumptions about the behaviour of others based on less (or less accurate) information than is available to us concerning our own behaviour.

In our discussion of barriers we illustrated how they were each seen in several different lights, and then gave potential implications of our findings for policy, or public engagement. We have therefore attempted to point to the potential *usefulness* of so-called “barriers”. In fact, in a certain light, they can be seen as understandable, important and necessary to the change process. “Barriers” can for example be used to explain our behaviour without too much blame, therefore avoiding the demotivational aspects of guilt. From other domains, for example addiction research, we know that we are able to simply pick the most seemingly appropriate or acceptable “barrier” to suit the situation. Twerski observes that an alcoholic may “rationalise” why “they need this one drink now”, [33]. In this way barriers could also be seen as a post-hoc method of justifying our actions across a whole range of behaviours, including energy consumption generally. This is not to say these “rationalisations” are not real or “true” in some sense, simply that they may not have to inevitably lead to the behaviour in the way described by the individual. Thus greater public discussion about barriers themselves may be useful.

Taking each of the three barriers discussed in turn, we now summarise insights from our interpretation of the group interview material. Concerning “habits”, we saw a need to think about when prompts for awareness of existing habits might be usefully encouraged for different groups. The recognition of habits also helps explain, and perhaps reduce frustration at, why changes do not occur instantly, even when they are recognised as beneficial. Acknowledgment of the many positive habits individuals may already have could also help build a foundation for further change. Concerning “self-interest”, a greater emphasis within public discussion of the *benefits* (both short and long-term) one might obtain personally from making pro-environmental changes to behaviour may be merited. Participants also recognised some of the limitations of solely linking pro-environmental behaviours to financial savings, which have been discussed in academic literature, and these examples highlight the possibility of talking more directly about these limitations with the public. Lastly, a sense of the limited impact of our own behaviour was also accompanied by the observation that the actions of others do affect us, we remember them and may even copy them, and therefore our actions can have wider impacts, and greater power than we might at first think. In addition, by validating people’s desire for fairness (which can be given as a reason not to act when others do not) it may be possible to start a discussion concerning the “unfair” impacts felt by those who are often least responsible for environmental damage.

A final point is that in some sense all the barriers discussed can be seen as dilemmas, for example on the one hand one might want to undertake actions which feel easy and comfortable, on the other hand one recognises that there is value in actions which involve more effort. The constant occurrence of “dilemmas” in everyday life can help us understand how difficult situations may arise, through no particular “fault” of others, and recognise that no one has all the answers.

If one's starting point in attempting to tackle sustainability challenges, such as reducing "unnecessary" energy use by individuals, is to ask "how does one overcome this barrier?", one may quickly come up against limitations. Firstly, it is unlikely to be possible to remove all barriers which are present for all individuals, and therefore some barriers would still remain to be "overcome" by individuals themselves. Related to this, a focus on barrier removal may risk discounting the role the individual may play in overcoming their own barriers, and making a pro-active choice. A complementary strategy may therefore be to begin a conversation about these barriers with different sectors of society. In this paper we have provided evidence for the many different perspectives a group of harder to reach participants brought to a range of issues, including the barriers they felt they and others experienced, and the potential there is for further engagement with those from all backgrounds. We note also that many of the specific examples given by participants which helped lend insight arose when they had the time and space to reflect on these issues. Self-reflection is a potentially important component regarding behaviour change, for example providing motivation by facilitating an attitude of curiosity towards our own behaviour [34].

As with any interview-based study, there are issues regarding self-reporting and satisficing, and we acknowledge these—how much were the views voiced by participants reflective of their actual feelings or actions, and did they feel pressure, due to the social situation, to give particular answers? The longer term nature of the project, with the researchers meeting with participants several times before and after these group interviews, is intended to help create an atmosphere of trust and openness. However it is possible for this to have the opposite effect, by making it harder over time for participants to express views if they think these are in opposition to the views of the researchers. We also acknowledge that this process of reflecting on pro-environmental behaviours over time is not currently one which is experienced by the majority of the population. There are organisations and courses which aim to offer space for such discussions, such as the Transition movement [35] and the Carbon Conversations course [36], however it is worth noting that courses offered by those organisations can find it harder to recruit participants from lower socio-economic groups, as represented within this study. We also note that when discussing barriers, the focus was on individual barriers, not structural or systemic ones, although, as illustrated, these did arise during discussion. One thing which did not fall within the scope of this study (and would probably require more than one interaction) was to reflect our observations back to participants, and perhaps explore how they would respond when these possible links are pointed out. We note that a skilled approach would be needed to facilitate this type of discussion. This might be a next step within this research, through one-on-one interviews with participants to explore the issues raised further. A final limitation of the work is the small sample size, which was in part due to the nature of the sample being harder to reach. This has enabled a first exploration and illustration of general characteristics of the conversations, including the willingness to engage, the use of techniques such as humour, the importance of visibility, and the different perspectives quickly brought on specific issues within single conversations. However we cannot draw conclusions that, for example, the barriers our participants named would be the first named by others.

By identifying the areas that are of real importance and value to each individual, we believe energy efficiency is more likely to be adopted, appreciated, and maintained in the long term. In this way, being able to gather and reflect on many perspectives from all sectors of society can help paint a more nuanced picture of the everyday experience of sustainability related issues.

Acknowledgments

This work was funded through European Regional Development Fund grant 011/037, *Smartlife Retrofit for Business*. The authors thank Candice Howarth, Renee Lertzman, Rachel Manning and two anonymous reviewers for their considered comments which improved earlier draft versions of this paper.

Conflicts of Interest

The authors declare no conflict of interest.

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