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# A missing link? Capabilities, the ethics of care, and the relational context of energy justice

Christopher Groves\* (corresponding author, grovesc1@cf.ac.uk)

Fiona Shirani\*

Nick Pidgeon<sup>†</sup>

Catherine Cherry<sup>†</sup>

Gareth Thomas<sup>†</sup>

Erin Roberts\*

Karen Henwood\*

# **Author Biographies**

Christopher Groves is a research fellow on the FLEXIS project in the School of Social Sciences at Cardiff University. His research interests include risk, uncertainty, social futures, the ethics of technology, and intergenerational ethics.

Fiona Shirani is a research associate in the School of Social Sciences at Cardiff University on the Energy FLEXIS project. Her interests include qualitative longitudinal methods, time, the significance of imagined futures, and experiences of life transitions, and families and relationships.

Nick Pidgeon is a professor of environmental psychology and director of the Understanding Risk Research Group within the School of Psychology at Cardiff University. His research covers risk, risk perception, and risk communication with a current focus on public responses to energy technologies, climate change risks, nanotechnologies, and climate geoengineering.

Catherine Cherry is a Research Associate in the School of Psychology at Cardiff University, with interests in sustainable consumption, the social acceptability of demand reduction strategies, and the role environmental and everyday values play in public understandings of energy.

Gareth Thomas is a Research Associate in the School of Psychology at Cardiff University on the FLEXIS project. He has a background in policy, science and technology studies specialising in the social acceptability of socio-technical transitions, particularly in the field of energy.

<sup>\*</sup> School of Social Sciences and Understanding Risk Group, Cardiff University

<sup>&</sup>lt;sup>†</sup> School of Psychology and Understanding Risk Group, Cardiff University

Erin Roberts is a Research Associate on the FLEXIS project, based in the School of Social Sciences at Cardiff University, interested in the transformative power of the relationship between energy and society. Combining social science and geography, she works on how identity, place and practice create unique cultural landscapes that provide opportunities and pose barriers to change.

Karen Henwood is a professor in the School of Social Sciences at Cardiff University and principal social science investigator on the FLEXIS project. A specialist in qualitative research methods, her research areas span the social science of risk (environment and personal lives) and identity studies.

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# Abstract

Difficulties experienced in obtaining energy services have been represented as unjust because of how they can prevent people from realising primary human capabilities. Capabilities are relational, being embedded within complex interdependencies between people and socio-material systems. These complexities can cause problems for approaches to energy justice that are based on concepts of welfare rights. We argue that the ethics of care, with its emphasis on relationality as the ground of obligation, and particularly on how social relationships are bound up with power and responsibility, can provide firmer foundations for thinking about energy injustice. Care ethicists distinguish between different forms of dependency, some necessary, others oppressive. Using qualitative longitudinal methods to explore people's experiences of energy challenges and energy vulnerability can show how power and responsibility within relationships can change over time. With data from a longitudinal study in South Wales, we explore how everyday energy-using practices can become entangled with harmful forms of dependency. We show how the everyday ethical evaluation of these relationship undertaken by participants harmonises with the ethics of care. Our data shows the utility of understanding relationships of dependence within the energy system in terms of responsibility and irresponsibility, in order to better understand energy justice.

# Keywords

Capabilities, energy justice, ethics of care, dependence, vulnerability.

# Introduction

The global transition to lower-carbon forms of energy raises urgent questions about energy justice, including how the benefits and costs of such a transition will be distributed (Sovacool et al., 2019). Among the tools available to researchers interested in defining and applying energy justice, the concept of capabilities has recently become highly influential, on the basis that it avoids some of the problems associated with defining questions of

justice solely in terms of the distribution of resources. One way of applying the capabilities approach is to combine it with theories of welfare rights (Jones et al 2015) that identify a welfare right to certain energy services as a necessary support for other, already legally established welfare and civil rights (Gleick, 1998). However, it has been argued that a problem with rights-theories in general is that a welfare rights-claim does not specify who is obligated to respond to any such claims and in what way (O'Neill, 1998, p. 199). These issues are particularly significant in relation to energy, where the connections between capabilities and energy services are complex, and are themselves bound up with relationships between a variety of social actors, from landlords and tenants to utility companies and governance institutions (Middlemiss, 2017).

It is perhaps striking, then, that the ethics of care — which focuses analytically on relationality and obligation, and has been seen as having strong affinities with capability approaches (Kittay et al 2005) — has, as yet, not been considered as a resource for thinking about the complexities of energy justice. Where rights-theories emphasise the entitlements of individual claimants as the basis of moral decision-making, the ethics of care emphasises how moral considerations arise out of contexts of interdependence and dependence. While rights-theories emphasise the importance of considerations relating to individual liberty and worth, such as autonomy and dignity, the ethics of care emphasises the importance of unequal vulnerabilities, along with unequal distributions of power and related distributions of responsibility for the well-being of others. Finally, where theories of rights identify decisions relating to individual entitlements as the substance of moral reflection, the ethics of care identifies this substance as biographical narratives and what they reveal about changing relationships between those who care for others' needs and those who receive such care (e.g. Gilligan 1982).

The ethics of care has, admittedly, often been seen as opposed to rights-theories, and also as deficient in comparison. For example, it may be seen as restricted in scope to private relationships, while rights-theories are seen as encompassing the public sphere. However, this characterisation of the difference between the two approaches has often been challenged by care ethicists, on the basis that even private care is always entangled with the public sphere, and also that an analysis of relationality and obligation can provide a stronger ground for understanding what people are entitled to. Writers in the ethics of care have for many years explored the connections between private and public that are implicit in the forms of dependence to which the ethics of care has attended. These connections have been made in political philosophy (Tronto, 1993a), in debates over social welfare (Engster, 2007a), and even extended to international relations (Robinson, 1999) and intergenerational ethics (Groves, 2014). Many such contributions have suggested that the ethics of care is not so much a critical opponent of theories of rights, as a critical friend that may provide more secure grounding for them (Held, 2006).

In this paper, we ask whether using the ethics of care as a framework to explore the connections between private troubles and public issues can make a comparable positive contribution to debates on energy justice. We examine how the ethics of care can supplement work on distributive energy justice and particularly approaches to it which make use of concepts of capabilities. We argue that the emphasis of the ethics of care on the moral significance of dependence makes this tradition particularly suited to understanding how detriment can result from the often complex relationships of sociomaterial dependence that have developed within energy systems. In addition, we show,

using data from a qualitative longitudinal study carried out in South Wales, how people faced with significant energy challenges understand their experiences in ways which echo the analyses of care ethicists, placing particular emphasis on the distribution of power within the energy system and the ways in which asymmetric relationships between actors in this system can lead to 'bad' forms of dependency in which obligations to vulnerable others go unrecognised.

# Conceptual section

In writings on social justice in general, there are two major questions which invite significant debate. First, there is the question of the currency of justice, that is, which goods matter when trying to decide whether people are being treated fairly or justly. Second, there is the normative content of justice, that is, what concepts or principles provide normatively compelling reasons for treating people fairly or justly. The idea of rights, for example, provides one way of articulating what the normative content of justice is, as does the idea of obligations.

The currency of justice may be conceived of in terms of distributive justice, that is, as a sharing out of goods. Although other forms of justice (e.g. procedural and recognition justice) have also been discussed in relation to energy, just distribution of energy-related goods remains central (Jenkins et al., 2016). Distributive energy justice has chiefly been theorised in terms of a right to a fair distribution of energy services, as called for by activists who insist that constitutional or legal entitlements to energy should be established. Arguments for the normative basis for such rights have drawn on existing justifications for wider welfare rights and rights to resources, such as the right to water, for example. These have established that such welfare rights to resources are necessary in order to secure other rights already internationally-recognised (Gleick, 1998). Consequently, some have called for states to recognise a 'right to electricity', for example (Tully, 2006).

A right to energy may be conceived of in terms of an entitlement to a particular quantified level of energy consumption (Smil, 2003). Alternatively, it could be understood as a right to access particular forms of energy carrier (electricity, mains gas etc.) or to consume specific energy services (Walker, 2015). Some scholars have proposed instead that the concept of *capabilities* may offer a way of understanding what goods should be seen as the ultimate 'currency' of distributive energy justice should be (Day et al., 2016; Jones et al. 2015; Sovacool & Dworkin, 2013). This is because, instead of trying to determine what constitutes a universally adequate level of resource consumption, capabilities approaches focus instead on what people are able to achieve or be with the resources they have, and within their specific circumstances. Making capabilities the currency of justice makes it possible to recognise how differences in people's circumstances, and their significance for how people are able to obtain adequate resources, play a constitutive role in creating injustice.

A capabilities approach requires distinctions to be made between several key concepts. Valued ways of doing or being are *functionings* that, taken together, present socially-valued *forms of life. Capabilities*, by contrast, are actual opportunities to choose between functionings. Capability, writes Amartya Sen, is 'the real opportunity that we have to accomplish what we value' (Sen, 1992, p. 31). An example of a functioning might be being healthy. A key capability needed to support such a functioning would be being able to be healthy, which is only possible (and therefore a real opportunity) given certain conditions. What these conditions are vary for different people. People living in distinct circumstances

might require different levels of resources in order to have such opportunities. As Martha Nussbaum writes, capabilities

are not just abilities residing inside a person but also the freedoms or opportunities created by a combination of personal abilities and the political, social and economic environment (Nussbaum, 2011, p. 20)

Whether people are equally able to transform resources into actual capabilities is therefore influenced by three kinds of *conversion factors* – personal (such as sex or physical condition), social (such as policies, norms or design standards and how they may create discrimination and thus injustice) and environmental (such as local climate or geographical location) (Robeyns, 2005). Capabilities are thus inherently relational in nature, rather than being 'possessed' by individuals.

Nussbaum's approach, rather than Sen's, has been influential on recent energy justice scholarship. Her most recent versions of this approach reflect John Rawls' approach to justice by stipulating a set of primary capabilities that, she argues, would be necessary for any valued form of life to be possible. This list includes physical and bodily health, but also 'affiliation' (including social respect, dignity and social participation) and an ability to exert some control over one's material and political environment. While there is significant debate as to whether Nussbaum's approach, as contrasted with Sen's, can be considered paternalistic (Deneulin, 2002), in practice the meaning of each capability can be opened up to further specification and variation by involving those who suffer inequalities in the work of definition (Sacchetto et al., 2018).

Nussbaum also notes that there are 'material prerequisites' for capabilities (2006, p 289). Energy has been identified as one such (Jones et al 2015). However, a distinction can be made here between energy as a resource and how it is utilised. Energy justice research has seen energy services (e.g. lighting, heating) as a necessary support for primary capabilities, insofar as they sustain 'secondary capabilities' (such as thermal comfort) (Day et al., 2016). What counts as a real secondary capability will vary between households. For example, households with senior citizens, people with disabilities or children (where higher ambient temperatures and/or use of heating for longer periods might be necessary) will differ in what levels of resources they require to achieve adequate levels of heating and thus have thermal comfort, compared to other households. This illustrates the relevance to secondary as well as primary capabilities of the concept of personal conversion factors. Social conversion factors are equally relevant, too.

For example, Middlemiss and Gillard's (2015) research shows how both the condition of housing and relationships between tenants and landlords can support or erode both secondary and primary capabilities. The energy efficiency of buildings can be considered a resource that significantly affects heating costs, for example. But where a household is renting, the willingness of landlords to make properties more efficient may, in turn, affect household energy efficiency. Social relationships here act as a social conversion factor that makes it harder to obtain energy efficient housing. Just as enabling conditions need to be present in order to prevent people being vulnerable to a loss of capability in general, the lack of comparable enabling conditions in the context of energy service access can render households energy vulnerable (Bouzarovski et al., 2014) by increasing their likelihood of suffering a loss of secondary and perhaps primary capabilities.

In general, then, a capabilities-based approach to energy justice has the advantage over one which focuses on resources that it enables analysts to think about the extent to which changes to personal or social conversion factors can make people more vulnerable to losing real opportunities to live flourishing lives, should they face energy challenges (Bouzarovski et al., 2014) like rising prices or lower levels of energy efficiency within the home. A theory of welfare rights based on a capabilities approach has been defended by Nussbaum (2006, pp. 284-6), and its applicability to energy justice also defended (e.g. Tully, 2006). But two problems may exist. First, some moral philosophers argue that it is not logically possible to derive particular obligations which weigh on some specific actor solely from the idea of a given right – and suggest that, on the contrary, specific obligations come first, and from these can rights be derived (O'Neill, 2000, p. 125). Some have suggested that such fundamental obligations (and rights which mirror them) can only arise from the vulnerability of actors to the actions of others (Goodin, 1985; West, 2000). The question of how vulnerability can generate such obligations is particularly important in relation to energy justice. Research on capabilities and energy has underlined the complex nature of the conditions which are necessary to support secondary and primary capabilities. Energy systems, as socio-technical systems, involve a host of different actors, involved with each other in complex relationships. The questions of where vulnerability in such a system might exist, and on whom any resulting obligations may fall, are thus particularly pertinent.

Notably, the ethics of care – overlooked to date in relation to energy justice – positions relationality and interdependence as themselves the ground of obligations (Held 2006). Some have seen the ethics of care as compatible with capabilities approaches (Kittay et al 2005), insofar as it seeks to

enable individuals to survive, develop as fully as possible given their innate capacities, and live and function in the world as well as possible, including being able to care for themselves and others, form meaningful relationships, engage in productive work, participate in social activities, and pursue some conception of a good life' (Engster, 2015, p. 19).

Care ethicists argue that humans are existentially vulnerable in ways which necessitate interdependence to support both survival and flourishing. Asymmetrical relationships of dependence between particular people or groups are often a necessary aspect of this interdependence, in specific circumstances. Human lives are thus generally characterised by some kinds of 'inevitable dependency' (Kittay et al 2005). Care ethicists suggest that from these existential facts about human beings, general and specific obligations may be derived (Engster 2007), as ethicists from other traditions also argue:

Each individual is not so much born as a bearer of rights to live a dignified human life as a bearer of obligations towards others to allow them to live a human life – there are obligations to provide what is lacking in the lives of others (Deneulin, 2002, p 516)

What the ethics of care adds to this general premise, however, is the recognition that such obligations to benefit (as well as not to harm) are distributed on the basis of power to benefit and to harm. All human beings are subject to differing degrees of dependence and vulnerability throughout their lives, but actors are obligated to others relative to their power to harm and to benefit others who become positioned as dependent on them

(Groenhout, 2004). With these aspects of obligation clarified, care ethicists identify certain ways of acting within relationships of interdependence and vulnerability as better than others. The criterion for such distinctions is whether or not an actor successfully engages in practices oriented towards the needs of others who have some degree of dependence on them (Ruddick 1989). Part of what 'success' means here is that such practices should embody specific dispositions, in particular, attentive and responsive attending to others' perspectives to determine what these needs might be (Tronto, 1993). Such concrete relationships of effective and respectful care are a good which care ethics sees as both instrumentally and inherently valuable.

Relationships are not static, but change over time. Consequently, time is a therefore a key aspect of care ethicists' analyses, beginning with Carol Gilligan's insistence that narratives about relationships are the unit of analysis for what she identified as a 'care perspective' (Gilligan, 1982, p. 28). In particular, asymmetrical and unequal relationships of dependence may shift over time. To understand whether someone is suffering harm within the relationships of dependence in which they participate, it is necessary to examine how the meaning of these relationships changes for those who participate within them, which means exploring the narratives they tell of these experiences, which Sevenhuijsen (2003) identifies as the central analytical practice of care ethics.

Respectful and genuinely effective care must therefore necessarily attend to differences between individuals (personal conversion factors) as well as differences in their wider circumstances (social and environmental conversion factors). Nussbaum writes about care that it 'addresses, or should address, the entire range of the central human capabilities' (Nussbaum, 2006, 169), attending to what conditions are necessary to support health, self-respect and social participation, emotional attachments, and so on. Further, care itself can be considered a capability essential to human well-being, given that it is a source of meaningful agency as well as being instrumentally useful for those cared-for (Kittay et al., 2005).

This means that even private, concrete care relationships between individuals are intimately connected to the public sphere. To be attentive to social and environmental conversion factors, the exercise of care has to bring into the sphere of ethical reflection perhaps hitherto overlooked social relationships and material circumstances. It can thus show how relationships within households, and especially how people are able to exercise care for themselves and their own dependents, are often dependent in turn upon public institutions and infrastructures (for income, healthcare, energy provision, and so on), in ways that are refracted through gender, ethnicity, disability and so on. These socially-constructed relationships of dependence, care ethicists argue, place obligations on public actors, given that these actors can, through their actions, position vulnerable others in ways that make them more vulnerable to harm (Pettersen 2011).

In this way, some relationships on which individuals or groups depend as support for capabilities can become sources of harm in themselves, in addition to how they fail to provide for particular needs, particularly where they result in internalisation of a sense of being abandoned or unworthy of being cared-for, creating harmful dependence (Liebow 2016). Analyses from within care ethics of social justice therefore tend to focus on where responsibility for looking after others fall, and how these responsibilities are distributed across societies (e.g. Engster, 2007; Kittay, 2001; Tronto, 1993). A narrative understanding

of change, particularly one that prioritises narratives articulated by subjects of need themselves (Sevenhuijsen, 2003), is thus often seen as methodologically necessary.

There are several points of contact between these analytical and methodological features of the ethics of care and recent research on energy vulnerability. The longitudinal qualitative approach to understanding experiences of energy challenges and energy vulnerability undertaken by Middlemiss et al (2019), promotes shifting the terms of energy justice debates to include understanding how dependence (including their own caring responsibilities) creates problems for households over time, and how perceived failures to take responsibility on the part of powerful actors within the energy system is seen by people themselves as morally significant. There may well therefore be scope for understanding how the ethics of care can enhance how capabilities theory has been employed within debates on energy justice, to help justify and render more compelling normative claims about fair and just access to energy services. We now turn to examine how qualitative longitudinal data can help inform more nuanced and detailed understandings of the relational contexts that affect how energy challenges are experienced, and to what extent findings from such data reflect key themes in the literature on care ethics and social justice.

# Methodology and Sample

Participants in our study all lived in Caerau, a peri-urban ex-mining community in the South Wales Valleys that scores highly on a number of measures of deprivation<sup>1</sup>. The case site was chosen as the location of a planned innovative geothermal district heating scheme<sup>2</sup>. Participants were recruited to our research study through leaflets delivered to all households in the area potentially eligible to participate in the scheme, through contacts made at information events, social media advertisements and introductions through local gatekeepers. Sampling decisions were not based on demographic criteria. Participants were provided with detailed information about the research before each interview, and about anonymity and confidentiality procedures, before being asked for written consent to participate.

Three rounds of interviews were conducted from 2017-2019. During 2017, 18 interviews were conducted involving 24 participants aged between their early 20s and late 70s, with some participants being interviewed with a partner. 22 participants were interviewed a second time one year later (2018), and 19 on a third occasion after another 12-month interval (2019). Interviews were semi-structured, exploring how participants' energy-using practices had changed over time in response to lifecourse changes and energy challenges, together with their perspectives on the proposed energy scheme. At the time of the initial interviews, four participants lived in social housing, six were privately renting and the remainder owned their own homes. Eight participants were retired, ten unemployed and five in employment (a mixture of full-time, part-time and self-employed). Using a demographic definition of household vulnerability taken from Jenkins et al. (2011), which covers dwellings where children, elderly or sick/disabled occupants are present, 19 of the 24 participants in our sample could be described as living in vulnerable households at the time of the first interview. While such definitions represent a crude indication of whether households actually experience energy vulnerability (Bouzarovski et al., 2014), they did

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<sup>&</sup>lt;sup>1</sup> Pseudonyms are used throughout this paper

provide interviewers with a way of introducing discussion about what constitutes vulnerability and whether participants' own experiences of energy challenges induced them to see themselves as vulnerable. For the analysis presented in this paper, data were primarily coded using Nvivo qualitative analysis software in relation to reports of energy challenges extensively mapped in the literature (such as financial, housing fabric related, landlord related, and so on), with a view to reading for 'through lines' where consistent narratives of household change and its implications were present (Saldaña, 2003).

Qualitative longitudinal research enables multiple analytic approaches; an exploration of change over time across waves of interviews; a detailed analysis at one moment in time across a single wave of interviews; and various combinations of the two approaches (Thomson, 2007). Analysis at a single moment in time can provide detailed insight into experiences across the sample, for example, the impact of unanticipated events such as a period of extreme weather, or an economic recession (Henwood et al., 2010). A case study analysis following an individual or small number of participants is well-placed to elucidate change over time. For example, showing changes in the use of domestic technologies as interest wanes (Hargreaves et al. 2013), or alterations in consumption patterns following changes in life circumstances (Burningham et al., 2014), which have significant implications for understanding energy use. The qualitative longitudinal approach is inherently temporal and is therefore particularly suitable for exploring dynamic issues (Neale, 2019).

#### Results

#### General context

Interviewees often expressed a keen sense of inescapable dependence on the energy system to provide for both their essential needs, and for those for whom they themselves have caring responsibilities.

'I've been there where I've got no gas and no electric and I can't wash my child and, do you know what I mean ... when there's no gas or electric, you're stuck. You've got nothing, and that's your life ... (Stacey, 30s, I3)

This sense of inescapable dependence is often described in thoroughly negative terms:

We're a slave of the electricity company. It's something we've got to have. So, we end up paying for it and we've got no choice in how much we pay. You phone round and get different suppliers, but eventually, their prices go up as well so, you've got to keep changing and swapping suppliers to benefit, haven't you? So, you're a slave to them. I try to do without. (Terry, 60s, I2)

What is experienced as inevitable dependence creates challenges in a context where energy bills (and other costs, such as food) continue to increase in a community suffering relatively high unemployment levels, and where incomes from work tend to be, at best, low and unchanging: 'times are getting harder' (Angela, 40s, I2). Proportionately, then, residents tend to spend a gradually increasing amount of their income on energy. Further, perceptions are that Caerau is 'two overcoats colder than Bridgend' (Terry, 60s, I1) the nearest large town. The community is seen as subject to unpredictable cold weather that can affect budgeting for heating: 'all you need is for it to, to have a sudden bitter, freezing

snap and then all your maths is out' (Jenna, 30s, I1), as when, between the first and second interviews, the village experienced a very harsh winter, followed by water shortages due to a burst water main. The housing stock varies in age, but many houses date from the late 19<sup>th</sup> century expansion of housing built for colliery workers, and feature single-skin brick walls built with black mortar, which are inefficient to heat and often prone to damp in the valley's rainy climate: 'the other day, when we had all this heavy rain. We had damp patches on the wall' (Dawn and Paul, I2).

Despite the shared sense among most interviewees that costs were increasing, they did not generally perceive that local people were likely to lack adequate energy services, and thereby suffer from poor health or other consequences for primary capabilities. In general, Caerau residents were seen as struggling but managing to cope: 'We're just getting by, you know' (Dawn, 40s, I1). Some did report having seen direct evidence of vulnerability: 'I have seen people huddling around little paraffin stoves and that's the only heating they've got in their house' (Pamela, 50s, I1). Others described evidence that led them to suspect energy poverty was more widespread:

I get the feeling, because I've noticed that a lot of the people here tend to wear dressing gowns over their clothes because I think they obviously don't run their heating.' (Carole, 60s, I2)

Overall, then, there is awareness that Caerau faces specific challenges, which represent examples of both social and environmental conversion factors, and a sense that at least some residents within a community in which many are 'struggling' may be unable to obtain adequate energy services, and perhaps exhibit some visible signs of this.

# Material conditions: housing

Care can be understood as activities directed at maintenance of the material world insofar as it provides resources to support capabilities, as well as directed immediately at people (Fisher, Berenice & Tronto, 1990). In our interviews, issues relating to responsibilities and obligation surface prominently around housing quality and responsibilities for maintenance. House prices are low, and so there is a relatively large proportion of homeowners in the community. For some owner-occupiers, help with energy efficiency has been available through Welsh Government schemes like Arbed (Save) and Nydd (Nest) (Grey et al., 2017), and some householders were also able to make gradual improvements themselves by putting some of their income aside as savings over the course of several years: 'what I was earning I was buying a window at a time to get some in [laughs]' (Anne, 70s, I1). Experiences of getting help with insulation and other measures through schemes like Arbed were often positive, but some householders reported difficulties, mainly arising from companies contracted to carry out energy efficiency improvements producing work of a low standard or going out of business.

Owner-occupiers' primary dependence here was on income from employment, and to a lesser extent on UK government (for pensions) and on Welsh government, local councils and contractors (for energy efficiency schemes). Tenants in social and private rental housing were dependent on their relationships with landlords, which they often experienced as asymmetric and as leaving them powerless. Debbie (30s, I1) reported that she relied on a highly inefficient and difficult to control heating system that imposed additional costs on her, and which initially her (private) landlord had avoided improving.

We've got no thermostats or anything, so it is purely by on or off. So you either bake or you freeze. There's no, and quite often we've got the heating on and the windows open, to try and regulate the amount (laughs) because you need some heat, but you don't need that much (laughs).

Amanda (30s, she and her partner both unemployed due to long-term ill-health), reported in her first interview how her social landlord had failed to take action for two years on a recurring damp problem affecting primarily her daughter's bedroom: 'In the end, I said I've had enough. You coming out to do my walls, I've had enough, I'm phoning environmental health'.

In each of these cases, action was finally taken, with Debbie's household receiving a new boiler through the Nest scheme. Amanda managed finally to get the housing association responsible for her house to address the damp problem. But this took a long time, and in the interim she had moved her daughter into her bed, while she slept on a sofa in the living room. By her second interview, she reported further difficulties in getting help ('I was on the phone screaming'), and that the process had taken so long that, once her daughter was able to move back into her room, Amanda found that moving back into her own bed caused significant consequences for her bodily health:

Because I'm so used to sleeping on the couch. When we got back, got the bed and got in, oh I was in so much agony. My back, my shoulder and my hips. (I2)

Amanda was one of the few interviewees who saw their household as genuinely suffering poverty, noting that she was careful to budget across the year to safeguard energy expenditure: 'I'm morally conscious about what I spend' (I1). She points out that her main priority is ensuring that her young daughter is warm enough while awake until her bedtime.

I put it up to 25 for about three, four hours. It warms the entire place up and then I knock it off then when the baby goes to bed, 'cause we, well, we don't really need the heating on. If I get cold, I just throw a blanket over me (I1)

Amanda's anger at what she sees as her social landlord's protracted lack of responsibility contrasts with her sense that she is doing the best she can to care for her family's health in difficult circumstances. Her sense of dependence and comparative powerlessness in her relationship with her landlord contrasts with her sense of agency in relation to her own energy use. At the time of the second interview, extensive problems remained with the fabric of both her own home and, she reported, with the other apartments in her residential complex:

We've been asking and asking when are they going to render and pebbledash the outside [...] when it rains it's going through the bricking in the wall and everything's damp inside (I2)

Her sense of being able to exert some control over her household's circumstances and ability to care effectively for her family's primary capabilities is therefore firmly circumscribed by what she sees as a lack of responsibility elsewhere and a lack of any means of addressing this failure of obligation. She represents her own agency

and capability to care for her dependents as undermined by the lack of responsibility shown by other actors.

# Making sense of dependence through social conversion factors

The relational context in which participants are living connects to other social relationships. Two sets of relationships emerge as particularly important in people's discussions of responsibility, obligation and care in relation to energy consumption. The first of these is the relationships households have with energy suppliers. Interviewees' perspectives on these relationships suggest that their dependence on utility companies is viewed as rendering consumers in general more vulnerable to energy challenges like price rises, and that little trust in companies to act responsibly towards consumers is felt.

As noted above, Terry's sense of lacking the power to meaningfully influence his dependence on his energy supplier is particularly intense, but is also reflected in others' comments. This was particularly so when people reflect on switching utility companies to save money or when they consider the effect of prepayment meters and the associated higher tariffs.

Switching suppliers tends to incur a double charge: 'as soon as you stop with this company, they want anything that you owe up to date then, and then this new company starts you off. So, you end up paying twice as much that month and you can't do it' (Jenna, 30s, I2). Prepayment meters and tariffs are imposed on customers by companies through contractual rules where a certain level of debt has accumulated. Seven participants (three in social housing and four in private rental properties) had prepayment meters. Some found them useful for helping manage cash flow week to week (while not being able to budget longer term), and for underlining that paying energy was a first priority, 'my meters always come first' (Kim, 30s, I1). But others stressed that the meters brought anxiety as they showed credit 'ticking down', and at the same time, emphasised constantly for householders how much more they were paying: 'you do see it come down a hell of a lot more quicker than what you do being on [a quarterly bill]' (Jessica, 20s, I1).

Experiencing the bills as a 'brick wall' (Terry, I1) householders had to get over before they could take care of themselves and the rest of their household in other ways meant that energy costs were a fixed priority, particularly given that two food banks existed in the village, one official and one unofficial. If insufficient money was left after paying for gas and electricity, food could be obtained from these sources: 'we had to pay the bills and we came here and had a food voucher' (Jessica, 30s, I3). Budgeting, in such circumstances, became a matter of managing insecure cash flow 'week to week' (Terry, 60s, I1).

This distanced, wholly one-way relationship of dependence with utility companies was contrasted by some with earlier relationships of tangible interdependence, associated by older residents in particular with times when the collieries were the main source of local employment. The move from coal-fired heating to gas fired central heating from the late 1960s on was seen as the point where one set of relationships began to be replaced by the other: 'they took all the fires out then, and it's like, all struggling now, you know what I mean? They [older residents] miss it, like' (Paul, 40s, I1). Before this period, coal formed a community resource as well as a commodity sold beyond the community. Free coal was available to colliers' households through the National Concessionary Fuel Scheme fuel allowance (which began in the 1950s): 'the coal was free and you'd just chuck it on and

forget about it didn't you?' (Anne, 70s, I1). Even where households did not benefit directly from the NCFS, other beneficiary households would often share their excess coal: 'when my brothers left home we didn't have free coal so my mother used to have coal from the other neighbours' (Cheryl, 70s, I1). Even if this were not possible, free coal was available from spoil tips: 'they used to go and get their own coal, you'd have women up there with carrier bags,' (Paul, I1).

Although in the days when coal was freely available, 'everyone was poor' (Anne, 70s, I1), the role of the colliery and the National Coal Board supported relationships in the community that enabled a degree of resource-based solidarity, and underlined the mutual interdependence of local people with these institutions. The ability to share resources represented a kind of valued agency, supporting Nussbaum's capability of affiliation in a very concrete, tangible way. Dependence is represented as having largely been experienced more positively as interdependence. Actors were able to exert agency in looking after their dependents' and their own needs, both in private and in the local public sphere via e.g. union membership. In retrospect, a lack of care for the local environment, and the price paid by miners themselves in terms of health, were seen as highly negative. But the relationship between local people and a localised energy system was seen as more positive, and more expressive of valued forms of affiliation.

This community solidarity was widely perceived as having vanished alongside the mediating institutions that supported it. At the same time, events experienced by residents provided echoes of it. While directly sharing energy resources was no longer possible, some people described taking active care of others by giving them money to help with bills, or mutual assistance through sharing food.

I, one day, the young lady, single mum [next door neighbour]. She was saying that she hadn't been down to buy the meter, since she's run out of gas. So I said, well, if you want to borrow some money or something? (Alec, 60s, I1)

'You know food or heating, we try and help out each other. Years ago, it was even better, wasn't it, years ago?' (Terry, 60s, I2). Terry articulates here a widely shared sense that people still assisted each other whenever possible – but that this was now about private acts of care, dependent on people's own resources (as when Jessica described in her second interview being able to give a neighbour 'a little bit towards their gas' during the cold snap), rather than being part of social expectations secured by institutional commitments and resource abundance. Terry (I2) reports how he depends on private acts of care from friends to afford to heat his home, relying on free wood from friends for the wood burning stove he installed a few years previously.

Against this backdrop of sensitivity to the relationships of dependence that characterise the energy system, interviewees sometimes explicitly articulate ideas about the moral significance of energy. Jenna (30s, 12) states that 'it [access to energy services] should be a basic right', and articulates a view of why energy services are vital that echoes ideas of capabilities (noting that communication and health are key needs for example). At the same time, she also states that energy is such a 'basic need' that an increasing amount of activities are entirely dependent on it: 'all the things the government want you to do are all online [...] It's evolution, isn't it?', echoing views found among public participants in other studies on

the importance of energy as a public good (e.g. Thomas et al., 2020). Here, once again, dependence and vulnerability are implicitly felt to be the source of moral imperatives. Whether describing the impact of material conditions or that of social relationships on what they are able to be and to do, interviewees rely on discourses of need, unequal power and unequal (and often unfulfilled) responsibility to articulate their stories.

# Discussion

Overall, participants describe their relationship with wider energy systems as structured by relationships of dependence and interdependence that arise, change and sometimes disappear over time. Such relationships provide the basis for having primary capabilities (such as bodily health). Scholarship on energy justice has suggested that these capabilities are dependent on people having other, secondary capabilities which are, in turn, dependent on energy services. Having these secondary capabilities (and thus, having primary capabilities) depends on personal, social and environmental conversion factors. We have seen how differences in these conversion factors (for example, as experienced by owner-occupiers as contrasted with renters) can render households more sensitive to energy challenges and thus make them more energy-vulnerable.

Interviewees articulated their experiences of energy challenges against the backdrop of a keen awareness of their dependence on a complex socio-technical energy system, characterised by inequalities of power. Dependence and inequality in this sense, interviewees stress, are felt to be an inescapable fact of living in a contemporary society. Paying for energy is the first priority. One needs to scale the 'brick wall' of energy bills before even paying for food. Further, the system that produces such relationships of dependence is also interdependent with other elements that are not part of the energy system. Experiences of energy challenges in Caerau are shaped by the prevalent weather conditions in the valley, for example. Historical patterns of employment and unemployment create socio-economic conditions that also make rising energy prices harder to adapt to.

These broader contexts structured by complex relationships of interdependence and dependence are reflected in the moral language of vulnerability and responsibility people use, as we have shown above, to help narrate how their circumstances have changed between interviews, and also to assist them in identifying where what they feel to be necessary dependence has become harmful dependence (Kittay et al., 2005). Dependence on utility companies, as Terry puts it, can become 'slavery', given the asymmetric distribution of power between energy companies and customers, contributing to a sense for some respondents that they can only survive 'week to week' (Terry, 60s, I1). This is powerfully contrasted with the more beneficial forms of interdependence which older residents associated with the days of coal mining. Dependence on social or private landlords can, if these actors do not take action to improve conditions within their properties, exhibit similar negative characteristics, as Amanda's story shows. Interviewees identify how, in some cases, detriment arises from a relationship in which an actor with power over the circumstances of a vulnerable other, and thereby over their possession of capabilities, is a relationship in which the powerful actor does not (they feel) exercise their power responsibly. The harmful effects of these failures to take responsibility are registered in relation to secondary capabilities like thermal comfort, but then also in relation to primary capabilities like bodily health, affiliation (specifically, the quality of social relationships on which one depends), and the ability to have meaningful influence over one's environment.

Interviewees' narratives about responses to energy challenges exhibit another important characteristic pattern. They show the extent to which energy challenges can require people to rely on ad hoc acts of kindness between members of the same community (Darby, 2017) to support others to access energy services, and heating in particular. While these private acts of care for the capabilities of vulnerable others are valued by people as expressive of a sense of loose mutual obligation, their value lies (especially for older people) in how such acts evoke memories of a historical past in which relationships of care were supported by broader relationships with specific institutions, including both the collieries as employers and the National Coal Board as guarantor of free energy. Interviewees recognised that coal mining also harmed those who worked in them in ways that manifested failures of responsibility. But older residents saw the broader social relationships that came with the institutions of the coal industry as more effective in providing for basic needs and in supporting forms of mutual obligation that they valued as key to community identity. These relationships, more evocative (at least as remembered) of solidarity, were felt to be more effective in supporting secondary and primary capabilities.

Overall, in describing their everyday care-oriented energy practices and how they changed (or not) over time in response to energy challenges, interviewees wove into these descriptions moral reflections on the broader relationships of dependence and interdependence implicated within these practices. How capabilities were individually and collectively cared for was seen as having been subject to significant transformations alongside broader patterns of socio-technical change connected to the energy system. A transition from patterns of interdependence to forms of dependence that could, over time, themselves become harmful, was detailed by several interviewees. Moral language employed by interviewees to articulate their sense of the significance of these changes identified the distribution of power and responsibility within the energy system as key elements in explaining how what we have characterised as harmful dependence could arise. Where an analysis of distributive injustice based on accounts of welfare rights might focus in the abstract on what people in general might need, the narratives provided by interviewees open up the possibility of locating an argument for rights to energy in the specific environmental and social contexts in which they are embedded. Further, such an argument would reflect in its definition of rights on specific distributions of a power to harm dependent others, and the obligations that a care-ethical analysis might identify as arising from such a distribution of power.

#### Conclusion

We have argued that combining capability and care approaches in thinking about distributive energy justice enables researchers to identify how wider social relationships as well as the material conditions in which people live shape the extent to which they have secondary and primary capabilities. Having capabilities is dependent on relationships within a complex system that is the result of long processes of socio-technical evolution. Consequently, the relational nature of care and capability-based approaches seems particularly appropriate to understanding how distributive energy injustices may arise and may be remedied. The importance of relational approaches in this context is underlined by the arguments made by Deneulin (2002) and by care ethicists such Engster (2007b) when they suggest that rights become normatively compelling only in connection with obligations which arise out of dependence. Such a combined analytical approach could help pinpoint not only where obligations arising out of dependence and vulnerability might exist, but also

whether these obligations are met or not, and whether failures to meet them leads to experiences of bad, oppressive dependency.

Longitudinal qualitative research, in conjunction with such an approach, can help to understand how relationships of dependence emerge and change over time. The resulting narratives can help elucidate shifts in relationships between how energy is used and whether or not people have specific capabilities (Middlemiss & Gillard, 2015). Further, attending to people's narratives about practices and relationships can show how the moral categories people use in these narrative descriptions may reflect moral logics that are different from those which currently dominate discussions of energy justice. In particular, these categories, our data suggest, appear to reflect concerns in the ethics of care regarding asymmetries of power in relationships of dependence, and how private caring responsibilities are inextricably bound up with public relationships of dependence and interdependence. From a policy point of view, such insights, when combined with a capabilities approach to energy justice, point to the need for an extensive reframing of how issues of energy access, fuel poverty and energy vulnerability are treated. They would require the starting point of policy to be the relationships of dependence and interdependence to which households are already subject from their position within particular communities with specific socio-economic histories and the energy system more widely, and the effect of these relationships on the capabilities that household members have. Understanding need and entitlement would then need to begin from a more adequate understanding of the ways in which actual relationships of dependence and interdependence within the energy system already entangle some actors within it in obligations to other, more vulnerable actors.

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