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TEXTURING WASTE: ATTACHMENT AND IDENTITY IN EVERY-DAY CONSUMPTION AND WASTE PRACTICES

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ABSTRACT

Waste has often been a target of literature and policy promoting pro-environmental behaviour. However, little attention has been paid to how subjects interpret and construct waste in their daily lives. In this article we develop a synthesis of practice theory and psycho-social concepts of attachment and transitional space to explore how biographically patterned relationships and attachments to practice shape subjects' understandings of resource consumption and disposal. Deploying biographical interview data produced by the Energy Biographies Project, we illustrate how tangible, intersubjective and interdependent experiences rub up against cultural and behavioural norms, reshaping the meanings and strategies through which subjects interpret and manage waste.

KEYWORDS: practice theory, attachment, narrative interviews, energy, pro-environmental behaviour

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INTRODUCTION

Waste performs an ambivalent and value-laden function in contemporary academic and policy discourse. Such use reflects conceptualisations of waste that are broadly in line with Douglas's definition of waste as 'matter out of place' (Douglas 1966), wherein materials are spatially separated according to evolving socio-cultural norms and values which specify that which is clean, useful, valuable, dirty, unhygienic or unnecessary (Gee 2010; Scanlan 2005). As a noun, the term 'waste' tends to be applied to flows of diverse materials that may be deemed unsafe or undesirable, or from which full human usefulness has been exhausted (Hird 2012; Kennedy 2007; Rootes 2009). However, the spatial distinctions and material flows constituting waste and waste-management processes are themselves undergoing a shift. Increasingly, materials formerly designated as waste are being differentiated and reclassified

as economically and ecologically efficient resources, provided their flows can be realigned and correctly positioned in 'circular' resource and consumption systems (EMF 2013; Watson et al. 2008). Such flows may comprise reusable, repairable or recyclable resources and consumer goods (Barr 2007; DEFRA 2008), or potentially useable resources such as energy and food that are unnecessarily disposed of or allowed to spoil before consumption (Parnell and Larsen 2005; Quested et al. 2013: 47).

However, waste can also be used as a verb, designating profligate, careless or heedless consumption and disposal routines. In the move from a waste paradigm centred around disposal to one that treats waste products as a potential resource (Lane and Watson 2012), we see a concerted effort on the part of governments to alter the behaviour of individuals both instrumentally through price signals, and also by extending individual and corporate responsibilities for proper disposal of formerly owned goods (DEFRA 2013). We have also seen a growing focus on identities, habits, norms and values as loci of individual behaviour that, in combination with wider infrastructure systems, may either promote or discourage wasteful forms of behaviour (Collingwood and Darnton 2010; DEFRA 2008; Stern et al. 1999). This approach has been influential in helping reframe waste governance as an activity that focuses on individual behaviour in relation to material objects. This new discourse on waste extends beyond material flows traditionally designated as part of the waste stream and also covers other forms of resource-consuming behaviour such as domestic energy use (DECC 2011: 38–39; 2015).

Increasingly, work in the tradition of practice theory has challenged approaches focusing on individual behaviour in favour of examining the social and infrastructural relations that shape environmentally significant practices (Shove 2010). Practice-oriented work instead seeks to foreground contextualised interactions between a diversity of human and non-human actants as key to shaping the performance of environmentally significant routines (Shove et al. 2012; Strengers and Maller 2012). Behaviour is then conceptualised as a product of biographically patterned engagement in practices that may be more or less deeply embedded in the material spaces subjects inhabit, and which are constitutive of their identities, relationships and values (Hards 2011). We see elements of this co-evolution of biographies, identities and relationships in waste literatures emphasising the influence of shifts in family structure and identity upon routines of disposal and divestment (Gregson et al. 2007; Hird 2012).

This conceptualisation takes a relational perspective that brings together practice theory and biographical approaches to examine how people make sense of waste as substance and as activity. In taking up this perspective we follow practice theory in understanding waste as constructed through contextually specific meanings, materials and competences which pattern subjects' enactments of consumption and disposal (Shove et al. 2012). In line with other recent work (Groves et al. 2016a; Henwood et al. 2016), we seek to deepen and complicate practice theoretical understandings of values and identity through the incorporation of psycho-social concepts of emotional attachment and transition. We deploy these concepts, adapted from developmental psychology and object relations theories (e.g. Bretherton 1992), in order to explore how subjects' capacity for engaging in practical interactions with others is shaped by experiences of transition through relationships with an expanding range of subjects and objects (Winnicott 1971). Such processes are mediated by a

plethora of relational connections, socio-cultural identities and emotional investments that help shape subjects' identities, alongside the competencies and meanings which compose regimes of practice (Groves et al. 2016a; Marris 1996).

The core of the combination of practice theory along with biographical and psycho-social approaches we develop here is the concept of 'texturing', a term we deploy to draw together ideas of meaning-making and identification as performances through which subjects stitch together diverse linguistic and material elements in an ongoing labour of situating themselves in relation to their wider social and cultural contexts (Hall 1996; Wetherell and Edley 1998). Importantly, such performances rely on embodied competencies as well as linguistic ones (Watson and Shove 2008). By texturing we thus refer to how biographically patterned experiences create emotional and relational bonds that tangibly shape how people engage in these performances. In particular, we are interested in how texturing in this sense influences how we interpret objects and practices as wasteful. As such, texturing is best read as contributing to but analytically distinct from the discursively informed concept of construction, drawing attention to how embodied and affective social and material relationships shape how subjects construct meanings.

Drawing on data produced as part of the Energy Biographies Project, we illustrate how emotional attachments can lead subjects to identify with consumption and disposal practices in particular ways, thus influencing the degree to which such practices are perceived as wasteful. Rather than viewing waste as the product of abstract knowledge, values or norms specifying the efficiency of resource flows, we show how tangible, intersubjective and interdependent experiences of the world rub up against and reshape articulations of waste in everyday life. From this we argue that approaches to waste reduction and pro-environmental behaviour should look to the tangible interdependencies through which subjects experience and designate waste in practice.

THEORISING WASTE: BEHAVIOUR, PRACTICE AND INTERDEPENDENCY

Context, norms and values in policy and pro-environmental behaviour discourse

While we opt for a practice-based rather than behavioural model, for many the extensive work on pro-environmental behaviour has provided a useful starting point for considering waste and waste reduction. Beginning by noting the 'value action gap' between stated intentions and actions, this literature models human agency as the product of individual decision-making processes (Kollmuss and Agyeman 2002).

Within this literature, the role of values and identities is somewhat contested. Approaches that focus on attitude, choice and planned behaviour theory have tended to treat values as little more than the sum of social norms. Here values take the form of personal norms, the internalised products of injunctive messages and subjective observations of what constitutes acceptable or average behaviour. Combined with situational constraints, beliefs about the causal efficacy of an action, and judgements as to the possibility and convenience of carrying it out, norms are key drivers of behavioural choices (Ajzen 1991; Corraliza and Berenguer 2000; Kollmuss and Agyeman 2002). Conversely, value-belief-norm approaches identify pro-environmental behaviour with acting on personal norms, which are accepted on

the basis of prior knowledge and beliefs located in relatively stable value sets that may be more or less altruistic, egoistic or biospheric in orientation (Steg et al. 2005; Stern 2000). While allowing for contextual changes to facilitate behavioural reassessment, these approaches also emphasise the capacity for norm- or value-driven behaviour to become habitual and entrenched over time.

For others, values and norms are variables rooted in self-identity, their acceptance determined by individuals' self-conceptions as role holders or members of particular social groupings. In this view, habitual conformity to norms and more intentional, symbolically significant behaviour is undertaken for the social acceptance and emotional rewards it provides (Nigbur et al. 2010; Whitmarsh and O'Neill 2010). Nevertheless, identifying as, for example, a recycler does not always require acceptance of pro-environmental norms and values (Rettie et al. 2014; Thomas and Sharp 2013). Collingwood and Darnton (2010) suggest that identifying with values of frugality, thrift and anti-consumerism can all alter perceptions of appropriate consumption and disposal behaviour in ways which may enhance or limit participation in various kinds of pro-environmental behaviour.

Practice theory, interdependency and biographical texturing

The idea that values and behaviour are rooted in identity is not unique to behavioural models. Theories of practice suggest that identifying as a practitioner of a given skill can endow subjects with access to values and meanings internal to that practice. Such values may encompass ideas about what it is to perform a practice well, or norms of behaviour and beliefs about the desirability and efficacy of particular actions. They derive from rules about what participation in a given practice entails that are widely recognised by the communities participating in it (Shove and Pantzar 2007; Wenger 1998). Where approaches derived from practice theory differ from approaches discussed earlier is in their insistence that identities are one among other co-evolving elements of practice. For Shove et al. (2012: 14), these elements consist of:

- materials: objects, technological devices, tangible physical entities and the stuff of which they are made;
- competences: skills, embodied know-how and technique;
- meanings: symbols, beliefs, ideas, norms and values.

Practices are never the products solely of individual choices, but instead result from the making and breaking of links between configurations of elements that co-evolve over time (Shove and Pantzar 2007). Individuals are then understood as carriers of practices whose identities and actions are patterned by the contextualised relationships and shared routines that are shaped by practices (Reckwitz 2002; Strengers and Maller 2012). Over time, old practices may be transformed or new ones introduced through the migration of ideas, frames of reference and competences between practices (Maller and Strengers 2013; Shove et al. 2012). Practices may also be influenced by biographical experiences of transformation that

pattern the meanings and competences carriers develop throughout their lives (Hards 2011; Wenger 1998).

Given the insistence of theories of practice on the co-evolution of meanings, materials and competences, little room is left in some iterations for ideas, values or identities beyond the knowledge and know-how that enrolment in practice provides (Reckwitz 2002). Elsewhere, Groves et al. (2016a) have suggested it is the performance of a practice according to shared understandings of proper performance that makes participation meaningful and internally rewarding – securing access to valued culturally available identities. For Schatzki, to engage in practice is to become subject to its ‘teleoaffective structures’, which hierarchically order tasks and projects, specifying the normatively appropriate purposes and emotions they produce (Schatzki 2003: 193). By insisting such structures are the products of practices rather than simply being the mental states of individual practitioners, Schatzki leaves space for multiple intersecting practices to differently shape individual identities, desires and emotional attachments to particular elements of practice.

Other work in the field of practice theory has sought to move beyond accounts that embed individual performances thoroughly within structures of practice. Hobson (2006) notes how the integration of sustainable consumption technologies into the home does not simply script consumer practices. Instead, it can be a prompt for ethical negotiation between object and subject which may draw on a wider array of values and emotional commitments that shape perceptions of reasonable consumption and disposal activities. Drawing on Collingwood’s theory of interaction rituals, Spaargaren (2011) suggests material flows and the practices that sustain them are energised and motivated by emotional rewards derived from their symbolic significance. Desire, fantasy, cultural meaning and social solidarities are positioned as external to these flows but sustain emotional investment in the meaningful practices which propel them through society. While both these accounts depart from the kinds of embodied relationships and attachments we wish to focus on, the notion of object relationships as sites of ethical negotiation and meaning-making that can influence how people engage in practices provides a valuable starting point for our own work.

In other work deriving from the Energy Biographies Project, we have sought to illustrate how regimes of practice serve not only to sustain particular routines but also valued emotional attachments, identities and intersubjective relationships (Groves et al. 2016a; Henwood et al. 2016). While shared meanings may mediate these relationships and provide some emotional rewards that are internal to a given practice, experiences of attachment and relationships at the subjective level are ontologically distinct from and irreducible to such structures. Thus, we follow Borgmann (1993) in arguing that interactions with some objects (for example, stoves and fireplaces) provide physical, emotional and imaginative satisfaction, derived from the embodied experiences and relationships of care that practices involving such objects enact (Groves et al. 2016b).

Similarly, the concept of attachment, derived from object relations theory and developmental psychology, captures the sense of physical and emotional security we derive from our relationships with other subjects and objects, the range of which expands as we transition into adulthood (Bretherton 1992; Winnicott 1971). For Marris (1996), attachment allows us to make sense of our place in an uncertain world, providing the sense of emotional security we need to explore and act within it. Others also emphasise the centrality of

attachment relationships to identity formation. In such accounts, individuation takes place through a series of relationships with other subjects (starting with caregivers), objects, places and ideas, such that practical interactions and interdependencies between them become central to subjects' conceptions of self and also to their capacity to act in the world (Groves 2015; Yates and Sclater 2000). Identity is thus dependent on ongoing processes of attachment formation, loss and reattachment, and so is our sense of agency and our propensity to adopt practices and perform them. Conversely, the emotional attachments and competences we develop as practitioners may induce us to seek out new social, cultural or object relationships.

Working with ideas of practice and attachment, rather than norms and behaviour, fundamentally alters how we approach the production of waste in daily life. Practice theory situates waste as a product of the material contexts we inhabit and the competences we develop over time. What defines waste changes over time as a result of the co-evolution of competences, materials and meanings – as when recycling practices change as a result of technological innovation. Relationships of attachment to objects and other subjects add more complexity, as is demonstrated by accounts of waste that emphasise the shifting meanings and emotional values objects take on within social networks as individuals within them proceed through their life-course (Gregson et al. 2007). In contrast to top-down models that pre-specify waste as a particular form of substance or specific set of individual behaviour, we show below how subjects construct and texture waste as performers of practice but also as participants within affective and embodied interactions and relationships. Through such practical and emotional interdependencies, consumption and disposal routines are physically and emotionally felt, their texture shaping how subjects define what is useful, useless, efficient or wasteful.

ENERGY BIOGRAPHIES AND THE TEXTURING OF WASTE

The following sections draw on data generated by phase one of the Energy Biographies Project, a qualitative longitudinal study examining personal interactions with energy across the life course. The project sought to encourage participants to explore through personal narratives their changing identities and temporal and spatial contexts, examining how pasts and imagined futures shaped energy-related practices in the present (Groves et al. 2016b; Shirani et al. 2016). Narrative elicitation has been praised for its capacity to examine dynamic mediations of identity and socio-cultural positioning in and through time, and for its capacity for insight into transformative moments and future expectations in which subjects reassess, defect from or enrol in new practices (Finn and Henwood 2009; Hards 2012). In eliciting biographies tied but not restricted to energy use, the Energy Biographies Project has rendered visible what Pink and Mackley (2012) describe as the contingent material, sensory, social and experiential aspects of mundane energy consuming (and waste) practices through which places, relationships and identities are (re)negotiated and (re)made.

The extracts we present below are drawn from narrative interviews conducted during phase one of the project, representing passages where participants discussed practices and relationships they considered to exhibit waste or wastefulness. Seventy-four interviews were conducted, drawn from four case sites selected for their capacity to represent a range of energy use practices and contextual variations. These sites are: Ely and Caerau (a Cardiff

inner-city ward), Peterston-Super-Ely (an affluent commuter village near Cardiff), Lammas Tir-y-Gafel eco-village (a nine-household, low-impact development in Pembrokeshire), and the Royal Free Hospital (or RFH, a large teaching hospital in North London).

The analysis highlights the ways in which participants' understandings of waste were textured through their everyday lives. Waste was not the subject of prescribed questions or prompts used in phase one interviews. Rather, in treating 'energy' as an element of practice, the interviews created spaces for participants to discuss its use and embedding in a range of materials and practices (including its embodiment in physical objects). Discussions of waste appeared within interviews as an emergent theme, one which participants textured in relation to a variety of everyday practices and experiences. The extracts we present below illustrate some of the key means through which attachment, emotional investment in practices and felt interdependence textured particular constructions of waste.

'Blend[ing] our lives': waste reduction and familial attachment

In line with much of the pro-environmental behaviour literature, awareness of wasteful activity as contravening social norms was commonplace across case sites. Minimising waste in lighting, heating and disposal were often framed through reference to descriptive and injunctive norms to consider the environment or cut costs. Compliance with injunctive slogans such as 'reduce, reuse, recycle' and common descriptive norms for energy conservation and domestic recycling practice were taken as the proper and appropriate responses of environmentally conscious citizens (Thomas and Sharp 2013). Others interpreted waste as a cost, not in purely calculative terms but also through ideas and assumptions about common standards of normal or 'proper' resource consumption. Often cost and environmental norms overlaid one another, as seen in Suzanna's account of waste reduction norms experienced as a child and today at home and in the workplace:

I think, when I was a child, the argument was, switch off the light because it costs a lot, whereas today the argument would be more, switch off the light because it costs a lot and it's not environmentally friendly.

Suzanna (RFH) contrasts changing meanings connected to the practice of switching off electrical products, which she associates with the injunctive norm 'switch off the light'. In part this can be read as an example of meaning migration, in which an old practice gradually comes to be integrated into new cultural contexts (Maller and Strengers 2013). In this view the meaning of waste and the practice of switching off becomes renegotiated through the introduction of an environmental frame of reference, overlaying cost-reduction norms.

However, this interpretation belies more complex interactions between injunctive norms and attachments to shared practices and identities present in Suzanna's and others' interviews, represented particularly in discussions of parental attitudes and practices relating to energy. Perceptions of familial hardship, thriftiness and frugality were often reinterpreted in light of contemporary environmental concerns. Recounting her childhood in Brazil, Suzanna provides a narrative of hardship encountered due to the failure of a family business, describing the changes in normality and expectation the family underwent:

So we had to downsize a bit and downgrade. And one of the things that we had to learn is how to use less resources because, then, my parents couldn't afford to have big energy bills, big water bills. And we had to reduce as much as we could, still keeping warm and clothed and everything. I think my parents were great on that because they managed to show us that life could still be very good ... Because we're a very close family, we didn't need to have anything that we had before in a material way, because we would spend time with each other, we would read together.

Normative expectations of warmth and clothing remain present in this extract, positioned as essential elements of modern family life requiring trade-offs in the light of new-found situational constraints on consumption. Partly this narrative points to the priority given to highly normative forms of consumption deemed necessary by wider society (Shove 2003). However, Suzanna also highlights the more affective emotional bonds holding the family together during their transition to more constrained economic circumstances. Waste is constructed not in relation to habitual lighting and heating patterns, but instead in relation to what are felt to be expenditures surplus to the health and togetherness of the family. This process reflects common themes in literature on attachment and insecurity, wherein perceptions of personal insecurity lead subjects to seek stability from relationships of attachment and the structures of shared meaning and competence they provide (Marris 1996; Scannell and Gifford 2010). In Suzanna's narrative it is shared practices of collective reading and close living which allow her to reconceptualise the relations she deems necessary to a good life. For Suzanna, familial attachments become key elements texturing how she perceives waste.

Familial togetherness reappears later in Suzanna's narrative as a central organising principal for her waste-reducing efforts. In relation to her shifting and unstable rental and lodging arrangements since moving to the UK, energy use becomes intertwined with Suzanna's description of how she 'blended into the family habits' of those with whom she cohabited. 'Blending' applied to a range of practices from cooking and laundry to shared television viewing, and remained a theme in Suzanna's current relationship and domestic practices:

And now that I'm living by myself, I try to keep that and, as I said, bring my boyfriend's clothes to wash with mine if I don't have a big darks washing, so it can complement. I cook for both of us, sometimes I go to his house and then he cooks for both of us. It's easier to make things that we both like, so I don't have to cook two separate foods. Yes, [we] try to blend our lives as much as we can, in order to make it easier and waste less time, less energy, less money.

Mirroring her childhood narrative, Suzanna constructs waste reduction as inherent to interpersonal connectedness and participation in shared practices. The processes of blending she describes stitches together Suzanna's own daily practices with those of her cohabiters. These practices then take on the texture of the emotionally stabilising familial practices of her youth. Suzanna does not privilege any single motivation, invoking money, time and energy as

forms of waste lessened by shared cooking and laundry routines. However, her description of blending as waste-reducing speaks to a texturing of wastefulness in opposition to attachments associated with the routines of familial togetherness that provide her with a sense of stability and self-efficacy as she manages her transition from Brazil to life in the UK. Despite strong environmental value statements made elsewhere in Suzanna's interview, they are not foregrounded in her account of waste. Instead, waste is textured by memories of blended family life and is constructed as a failure to attend to the relationship practices that allow her to manage the pressures posed by financial or geographical life-course transitions.

'I've carried it forward': repurposing norms, transition and identity

Transitional attachments to familial practices and identities arose in several interviews, often associated with cultural narratives of scarcity and frugality. These attachments were often signified via injunctive norms and slogans ('make do and mend', 'waste not, want not'). However, these did not carry identical meanings for participants; rather, slogans referred back to the biographical relationships and identities participants valued and associated them with (Hards 2011; Thomas and Sharp 2013).

For Jack (Ely), the injunction to 'waste not, want not' conjured strong memories of regional identity and experiences of his mother's domestic practices:

Well, I'm from Yorkshire and we make do and mend, and I think when I grew up we didn't have a lot of money and so we did recycle things. My mum would knit our clothes and make our clothes, and she would take old knitted garments apart and wash the wool and reknit it. And she would collect, because she came from a generation that lived through the war, and so they saved things – they'd save and wash out plastic bags and keep pots and things, and she's actually got a hoarding issue with it.

Above, Jack associates his Yorkshire identity and familial background with frugal norms and practices. Saving potentially useful items and applying skills to repair and reuse old garments and fabrics are remembered as practices integral to this identity. Invoking the wartime generation and the slogan 'make do and mend', Jack explains these practices as necessities of scarcity and rationing while tying them to the symbolically powerful imagined community (Anderson 2006) embodied in narratives of the Second World War. Jack therefore situates waste reduction within the cultural discourses and familial identities he values.

Explaining his aversion to waste today, Jack cites his eating practices and disgust at behaviour he perceives as wasteful. The sickening feeling he describes is discomfiting precisely because such practices contravene his biographically experienced norms and identity attachments:

I grew up with that so we didn't waste anything, so I don't do it now, I've carried it forward. I hate throwing anything away. I would adjust my meals to accommodate something leftover from a previous day. I see people and I would – I eat everything on the plate. I see people wasting so much it makes me feel quite physically ill actually. I actually feel ill with it, I just see it as unnecessary.

Elsewhere in Jack's interview he describes his business – buying and selling 'vintage and retro items and collectibles' – in terms of 'reusing', which adds to his claims of his own waste awareness. In each case, the meaning of waste reduction and reuse migrates to and is transformed within new practices as Jack moves through his life course. Waste is no longer defined by hardship, scarcity and frugality. However, embodied, emotional and cultural experiences continue to be an important part of his identity and practices, particularly in relation to eating.

There is, however, ambivalence in how Jack's textures waste through mentions of his mother's 'hoarding'. This theme informs Jack's discussion of his 'efficient' household consumption and disposal strategies, whereby he tries to only keep items he finds useful:

But everything else I use and ... I'm quite proud to say that because I've cut things down to what I need. In my mum's house she's kept everything from everywhere so she has lots of things that she doesn't use. I don't do that. I've made a conscious decision to just keep the things I use, and that goes with everything, so if I do have a compulsion it's to do with being efficient.

Jack describes his mother's collecting 'everything from everywhere' as problematic. Nonetheless, he understands hoarding as addressing uncertainty, cluttering life with unnecessary material objects that may 'one day' be useful. Jack's narratives construct hoarding as an old-fashioned compulsion, unsuited to contemporary consumer identities and cultures in which accumulating and wasting goods is easier. Opposing both forms of consumer identity, Jack's conception of efficiency allows him to manage relations with material objects in a manner consistent with his desired identity. Rather than rejecting his Yorkshire identity, efficiency allows him to carry it forward, reinterpreting and reintegrating his aversion to waste within new contexts and practices.

In contrast with its dominant meaning in policy discourse, for Jack 'efficiency' relates to the use and enjoyment he derives from particular practices and objects. Noting that his ownership of two vacuum cleaners and a hot tub could be perceived as wasteful, he deems them nonetheless acceptable given the satisfaction their use provides. Similarly, he enthusiastically describes the pleasure and use provided by his 'gadgets' built in clocks and standby lights: 'at night time it's like the starship *Enterprise*, everything has got a little light on it but I quite like it'.

Such assemblages speak to notions of homeliness and sensory comfort that have formed recurrent themes in other publications arising from the Energy Biographies Project (Groves et al. 2016a; Henwood et al. 2016), when different ways of using energy are valued to the extent that they reinforce valued relationships, identities and attachments. In Jack's case, home is constructed as a space wherein the threats of potentially wasteful modern society are, through his idiosyncratic interpretation of efficiency, balanced against a cultural and familial tendency to hoard. In constructing home as a space of efficiency, Jack seeks to secure his valued Yorkshire identity, while transitioning to a very different lifestyle from that of his mother. Negotiating this liminal space between identities, Jack experiences varying

degrees of friction between the diverse energy and waste implications of the practices with which he identifies, a phenomenon explored in more detail by Groves et al. (2016c).

The biographical experiences narrated in Jack's and Suzanna's accounts bear resemblance to Jensen's discussion of the 'consumption of everyday life' (Jensen 2008), wherein the perceived normality of a practice and its fit with subjects' desired lifestyles and identities combine in the meaning given to a particular mode of consumption, or in this case, waste reduction. However, the accounts we present also highlight ways in which transitions in identity over time are materially and emotionally shaped by shifting attachments and relationships with other subjects, objects and contexts that may be experienced as necessary, wasteful or ambivalent. For Jack, Suzanna and several other participants, wastefulness was also textured by the uncertainties and insecurities associated with life-course transitions. In such instances, disruptions to material and cultural contexts can operate to reframe distinctions between necessity and wastefulness.

'All that used to feed the farm animals': tangible interdependency and narratives of loss

In the two accounts above, the retexturing of waste has formed a key component of interviewees' attempts to conceptualise those elements of life that they deem necessary to their identities and their flourishing. This in some ways mirrors conceptions of waste as garbage, materials deemed to be used or useless and that are best forgotten and cast aside (Hird 2012; Kennedy 2007). However, such accounts tend to miss the ways usefulness and uselessness can be re-evaluated and rearticulated over time.

By flourishing, we refer to concerns for the 'good life', interpreted relationally as products of the relationships which make life possible and give it meaning. A growing literature on environmental ethics situates human flourishing within what Hannis terms networks of 'acknowledged ecological dependence' (Hannis 2015). It is only through awareness of and attending to our interdependencies that we can come to understand our own identities as mediated by the wider preconditions for our flourishing (Adam and Groves 2011; Hannis 2015). For many participants, waste was textured through reference to these physically and emotionally tangible interdependencies.

Interdependence often appeared in nostalgic cultural narratives bemoaning the loss of past competences as giving rise to more wasteful contemporary practices. While a minority of participants constructed post-industrial modernity as inherently harmful or wasteful, several narratives were more ambivalent, balancing lost competences with benefits from the decline of polluting industries and improved energy efficiency. Comparing contemporary energy provision and disposal routines to older or obsolete domestic norms and practices, the narrative provided by Pat (Ely) exemplified such ambivalence. Describing contemporary life as 'a lot quicker and [with] less electricity used', she nevertheless describes several obsolete physically and energy-intensive practices as waste reducing:

And then you used to have the boilers to stoke up the heating systems ... Far more chimneys, yeah. And the only thing I do think that we used less of are the landfill areas because, all right, we used to use a washing machine or whatever to boil nappies, but when you think of the amount of nappies and tissues that get buried! We

have the open fire, well that's a fake one [she gestures to the object concerned] ... You used to have a potato bag, which you went to the shops with, and that was an old canvas bag, much of what they're trying to do today ... Now ... apples or whatever, if they came in a brown bag they were used to light your fire, so you didn't bury them, so much so that you burnt most of your packages coz that was for your fuel ... to get your fire going. Anything around the house, dust or whatever, that would have got thrown on the fire. So you burnt more than you ever threw out.

Above, Pat outlines the wastefulness she sees in contemporary landfill habits through comparison with past practices wherein by-products from shopping, food production and domestic cleaning formed valued materials for domestic heating. Conversely, contemporary life is presented as a throwaway culture where formerly reusable materials (nappies, dust, paper bags) are no longer part of the tangible interdependencies of daily life. Where present-day practices are discussed, they are seen as imitating past usage, as in the case of potato sacks for shopping or the 'fake' fireplace.

The disappearance of boilers and chimneys Pat references above is symbolic of the shift away from the tangible energy and resource interdependencies of her youth to more abstract systems requiring lower levels of direct physical (but also emotional) engagement. Lost tangibility is underscored as her narrative moves to declining domestic and localised agricultural practices:

Your pig bin for your swills and that – that we now put out in a different bag, which is a bag to put the rubbish, the food and the waste in – that was in an old tin bucket and you washed it around with disinfectant once a week or whatever. That cost nothing. And then a man with an old electric cart used to come from the farm. So all that used to feed the farm animals, so you didn't have that [food waste] either. So where they are saying the environment now is better, in that respect I don't think it was, but in an electricity sense I think we used more then than what we do now.

Mirroring her earlier discussion of landfill habits, Pat's narrative here illustrates the detachment of kitchen scraps from tangible and meaningful practices of swill collection and animal husbandry, and their recruitment by a more anonymous system of domestic waste collection. Her sense of loss in this transition is highlighted by her attention to waste 'you didn't have' in the past but that one does have today, and partial disagreement with (what she perceives as) the consensus that the general environment is better today.

Through Pat's discussion we gain a sense of her attachment to an assemblage of past practices, stitching together a range of material practices including shopping, heating and cooking with the locality and community she inhabits. In putting herself at the centre of these interdependencies, Pat's daily practice assumes the role of mindful attendance to their needs, and the use of by-products as resources becomes an essential precondition for her own well-being. In severing these interdependencies, formerly useful resources become retextured as waste.

In remembering past attachments to meaningful practices, Pat's narrative of interdependencies renders visible the changes she and others have experienced in the shift to

faster, less meaningful infrastructures of energy and resource provision (Groves et al. 2016b). Furthermore, it highlights some of the deeper yet less tangible interdependencies associated with these more contemporary flows. Landfill disposal, artificial nutrients and animal feed, and distant power plants, pipes and cabling, take the place of the fireplace, scrap bucket and chimney. Constituted outside the more tangible practices on which Pat draws reference, such systems contribute to the sense of unease, dislocation and loss that permeates the above extracts from her interview.

'It basically connects people to their key resources': skills and remaking connections

The idea of waste as generated by the loss of, or disconnection from, wider energy and resource systems can in part be read as an emotional response to the severing of links to what Adam and Groves term 'lived futures' (Adam and Groves 2007: 198). Comprising relationships and narratives of care, lived futures provide orientation to the people, elements and practices that will continue to matter in uncertain futures, domesticating uncertainty by making tangible future relations that may be priorities or subject to risks (Adam and Groves 2011; Henwood and Pidgeon 2013). The loss we perceive when reading accounts such as Pat's stems in part from her disconnection from past interdependencies that allowed her to make sense of her identity and place in wider social systems. However, disconnection or surrender to perceived wastefulness were not always passively received. A sizeable minority of participants described strategies for reconnecting with the non-human world, creating new lived futures by articulating new relationships between themselves, their families and the material flows they engage with.

Several participants across case sites spoke of their efforts to develop new competences and material assemblages to reconnect with these systems. Discussing the 'vulnerability' he perceives in his dependence on national energy infrastructures, Jonathan (Peterston) extensively referred to the home alterations he has made in the past and would like to make in the future. Ranging from the development of capacities to cook and preserve food without depending on external infrastructures to installing a water meter to monitor consumption and waste, he narrated a desire to make tangible connections to human and natural resource systems and experience their textures in more rewarding ways. In other cases, efforts to reconnect included installing solar panels, meters for monitoring electricity consumption and the maintenance of various DIY skills. Participants described these skills and assemblages as means of facilitating the more careful and resourceful management of systematic interdependencies, in contrast to wasteful dependence upon them.

However, it was at the eco-village of Lammas where efforts to re-establish embodied interdependencies and attachments to wider resource systems appeared most vividly. Arising from purposeful but disruptive transitions to low-impact, 'off-grid' living, the following comments by Peter exemplify the sense of interdependency Lammas residents seek to engender in their new identities and lifestyles:

you know when people have some kind of direct relationship with their resources, that's the best way that I conceive of cultivating responsibility, and in many ways that is what Lammas is about. It basically connects people to their key resources, be it

water, fuel, food, air, soil, and thus engenders a sense of responsibility. And micro-generation, I think, is a step in the right direction.

Peter constructs living off-grid as a means of fostering a more direct relationship between people and the resource systems on which they depend. The terminological choice, ‘cultivating responsibility’, places his discussion within a horticulturalist discourse whereby interdependency requires effortful working with local resources and environments. His reference to ‘responsibility’ textures such practices as mindful and aware, in contrast to the wastefulness he associates with less tangible resource systems. For many Lammas residents, connectedness took the character of connection to land and a sense of mutual flourishing, encompassing humans and crops engendered by growing one’s own food (see also Groves et al. 2016b). In these accounts, various kinds of ‘waste’ or by-products take on characteristics and values associated with permaculture and its reduced reliance on external chemical and economic inputs (Suh 2014).

For others, including Peter, connectedness was shaped via the physical construction and management of off-grid domestic energy generation:

[S]ee that rig outside? So, we’ve got 500 watts of PV [solar panels] there, again to an independent battery unit which connects to our sockets, so that’s the main limiting facto. And so we’ve got a fairly good idea of how much electricity we can use without sort of taking the voltage levels too low. And the kids have as well, and that is a sort of hard thing to put your finger on. There are read-outs. We’re just so used to checking the read-outs, we kind of know now. And it makes a massive difference whether it’s sunny or not, so we know that if its sunny Harry can play his music full blast and you know it’s not a problem. He can play his music all day and into the evening, and if it’s been gloomy like today for three or four days, we know that we’ll probably need to check before turning on the computer for a film, you know, or whether we watch a film on Faye’s little small laptop or whether we use Harry’s big LCD screen, you know. So I think all of us are really good at conserving power and that is one of the massive advantages of being off-grid.

Following a longer description of the electricity generating systems he has installed in his family’s home, here Peter describes the changeable ways in which connection to the non-human world serves to designate waste. In times of abundance, higher levels of consumption can be justified; however, when batteries run low, otherwise justifiable consumption practices become wasteful. In addition, he outlines the means through which the family is developing new competences in the construction of off-grid electricity generation, and in the interpretation of its numerous read-outs and weather patterns to judge resource availability. Peter constructs these competences as making tangible and manageable resources, which before his move to Lammas were experienced as highly mediated abstract systems. The physical experience of building, exposure to the elements and resource constraint provide residents with a greater appreciation of interdependencies between themselves and their physical environment.

Peter's detailed description of his electrical interdependencies and the attentive practice of observing read-outs and the weather speak to a relationship of care and interdependency that he and other Lammas residents find meaningful and rewarding. This caring relationship is further underscored in the weight he accords it in relation to his children and wider family. In positioning conservation and familial activities as interdependent with their environment, the maintenance of that connection becomes intertwined with the family's collective enjoyment of watching films or listening to music. The transition to off-grid life thus becomes a means of constructing and enhancing emotional attachments through shared participation in a range of interconnected practices linking the intersubjective experiences of the family to their management of shared resources. Within this assemblage of devices, intersubjective relationships and natural resources, activities such as watching an LCD TV become enactments of interdependency tying the family to each other and the non-human system in which they are embedded.

Some aspects of this narrative were mirrored in accounts from Peterston and Ely in particular mention of energy monitors as a technology voluntarily brought into the home to better understand and manage energy consumption and waste. In mainstream sites, the integration of energy monitors was often seen as a way of rendering 'wasteful' consumption visible, prompting personal and familial renegotiations (sometimes described as 'nagging') around energy use. While this marked one means of making the experience of waste more tangible, at Lammas, monitors operated as a means of interpreting a more holistic connection to and relationship with the environment that also included experiences of bodily warmth, the quality of light and physical exertion. For Peter and others at Lammas, 'being off-grid' is not merely a statement of position in a physical infrastructure, it is an active form of identification with a more tangible complex of interdependencies that were often defined in opposition to 'wasteful' consumer culture.

In providing detailed descriptions of their assemblages for electricity production, attendance to batteries, meters, crops and soil, Lammas residents described waste by talking about experiences of physical, intersubjective and socio-cultural relationships. Rather than experiencing waste as mediated by abstract norms, materialised in bills or unhelpful objects cluttering their homes, some forms of waste became retextured as elements vital to cooking, food production, heating and leisure practices. Such deployments are only possible in and through the development of new competences, which allow for the management of interdependencies formerly surrendered to abstract systems. Indeed, Pat would likely recognise these more tangible interdependencies as requiring the reacquisition of old skills and ways of doing things, something not lost on many Lammas residents themselves.

The desire for more tangible interdependence with one's environment was not unique to Lammas residents. The desire for a sense of control and self-efficacy has been recognised as a key means through which loyalty to a particular practice is maintained (Shove et al. 2012). Similarly, psycho-social concepts of a secure (though flexible) holding environment or transitional space in which subjects develop skills to anticipate future events and respond to them has long been viewed as essential in generating a sense of effective agency, identity and security (Groves 2015; Marris 1996; Winnicott 1971). While Suzanna and Jack seek security within their immediate relational and object environments, efforts to recover more tangible forms of interdependency echo Kenneth Shockley's suggestion that facing the uncertainty of

climate change, we must identify new sources for societal flourishing by (re)developing our capabilities (Shockley 2014).

CONCLUSION

This article has reconsidered waste as material flow and as a set of activities, emphasising the role of attachment in shaping how waste is constructed through participation in practices. It has highlighted the role of practice in constituting attachments, while also detailing how embodied and affective relationships texture the meaning of waste in everyday life. By presenting a broader textural analysis, we have been able to explore experience and practice, and some of the ways in which they come together as physically and emotionally vital elements of embodied relationships that are part of everyday life within wider systems.

Responding to constructions of waste as material flows that reflect abstracted notions of inefficiency, habit, values or norms, we have illustrated how everyday articulations of waste are contingent upon the practical enactment of social, material and cultural interdependencies. In examining how elements of these interdependencies become stitched together, we have paid particular attention to ambivalences, areas where old attachments, identities and practice relationships undergo rupture. By analysing narratives of socio-cultural shifts and articulations of waste and value, we have been able to show how subjects manage these ambivalences by recovering, reconfiguring and restitching tangible and emotional interdependencies as part of what tangibly makes a life worth living now, and as part of efforts to 'tame' uncertainty about the future.

This article thus raises questions for research and policy efforts that aim to reduce waste and promote pro-environmental behaviour. We have shown how the meaning of 'waste' can be textured by attachments, shared relationships, meanings and object relations. Experienced both subjectively and intersubjectively, such relationships may undergo ruptures and reattachments over time. This may help explain the puzzle in pro-environmental behaviour literature as to why identifying with particular value statements can nonetheless be associated with contradictory environmentally significant kinds of behaviour (Collingwood and Darnton 2010; DEFRA 2008: 7). While policy may never be capable of catering to individual biographies and transitions in the way this study has, by signposting embodied and emotional relationships and interdependencies between social, cultural and practice identities, we have identified key mechanisms through which subjects articulate the preconditions for present and future flourishing.

Further research is required into the psycho-social and practical dimensions of these relationships in order to develop more nuanced, socially and affectively aware models for pro-environmental interventions into everyday life. More significantly, by identifying tangible interdependencies as key elements in the construction of waste reducing practices, we might begin to question policy approaches focused on information provision and systemic efficiency. To the extent that such measures seek to bypass practice and its meanings in favour of 'nudging' and infrastructural transitions towards more sustainable practices, they may further undermine the identities, competences and attachments subjects require to engage in alternate waste-reducing practices.

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REFERENCES

- Adam, B., and C. Groves. 2007. *Future Matters: Action, Knowledge, Ethics*. Leiden: Brill.
- Adam, B., and C. Groves. 2011. 'Futures tended: Care and future-oriented responsibility'. *Bulletin of Science, Technology and Society* **31**(1): 17–27. <https://doi.org/10.1177/0270467610391237>
- Ajzen, I. 1991. 'The theory of planned behaviour'. *Organisational Behaviour and Human Decision Processes* **50**(2): 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Anderson, B. 2006. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*, rev. edn. London: Verso.
- Barr, S. 2007. 'Factors influencing environmental attitudes and behaviors: A UK case study of household waste management'. *Environment and Behavior* **39**(4): 435–473. <https://doi.org/10.1177/0013916505283421>
- Borgmann, A. 1993. *Crossing the Postmodern Divide*. Chicago: University of Chicago Press.
- Bretherton, I. 1992. 'The origins of attachment theory: Jon Bowlby and Mary Ainsworth'. *Developmental Psychology* **28**(5): 759–775. <https://doi.org/10.1037/0012-1649.28.5.759>
- Collingwood, P., and A. Darnton. 2010. 'Motivations for pro-environmental behaviour: A report to the Department for Environment, Food and Rural Affairs by RESOLVE'. London: DEFRA.
- Corraliza, J., and J. Berenguer. 2000. 'Environmental values, beliefs, and actions: A situational approach'. *Environment and Behaviour* **32**(6): 832–848. <https://doi.org/10.1177/00139160021972829>
- DECC (Department of Energy and Climate Change). 2011. 'The carbon plan: Delivering our low carbon future'. London: DECC.
- DECC. 2015. 'Smart metering early learning project: Synthesis report'. London: DECC.
- DEFRA (Department of Environment, Food and Rural Affairs). 2008. 'A framework for pro-environmental behaviour'. London; DEFRA.
- DEFRA. 2013. 'Prevention is better than cure: The role of waste prevention in moving to a more resource efficient economy'. London: DEFRA.
- Douglas, M. 1966. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. London: Routledge & Kegan Paul.
- EMF (Ellen MacArthur Foundation). 2013. 'Towards the circular economy: Economic and business rationale for an accelerated transition'. Cowes: Ellen MacArthur Foundation.

- Finn, M., and K. Henwood. 2009. 'Exploring masculinities within men's identificatory imaginings of first-time fatherhood'. *British Journal of Social Psychology* **48**(3): 547–562. <https://doi.org/10.1348/014466608X386099>
- Gee, S. 2010. *Making Waste: Leftovers and the Eighteenth-Century Imagination*. Princeton: Princeton University Press.
- Gregson, N., A. Metcalfe and L. Crewe. 2007. 'Moving things along: The conduits and practices of divestment in consumption'. *Transactions of the Institute of British Geographers* **32**(2): 187–200. <https://doi.org/10.1111/j.1475-5661.2007.00253.x>
- Groves, C. 2015. 'The bomb in my backyard, the serpent in my house: Environmental justice, risk, and the colonisation of attachment'. *Environmental Politics* **24**(6): 853–873. <https://doi.org/10.1080/09644016.2015.1067348>
- Groves, C., K. Henwood, F. Shirani, C. Butler, K. Parkhill and N. Pidgeon. 2016a. 'Invested in unsustainability? On the psychosocial patterning of engagement in practices'. *Environmental Values* **25**(3): 309–328. <https://doi.org/10.3197/096327116X14598445991466>
- Groves, C., K. Henwood, F. Shirani, C. Butler, K. Parkhill and N. Pidgeon. 2016b. 'The grit in the oyster: Questioning socio-technical imaginaries through biographical narratives of engagement with energy'. *Journal of Responsible Innovation* **3**(1): 4–25. <https://doi.org/10.1080/23299460.2016.1178897>
- Groves, C., K. Henwood, F. Shirani, C. Butler, K. Parkhill and N. Pidgeon. 2016c. 'Energy biographies: Narrative genres, lifecourse transitions, and practical change'. *Science, Technology and Human Values* **41**(3): 483–508. <https://doi.org/10.1177/0162243915609116>
- Hall, S. 1996. 'Introduction: Who needs identity?' In S. Hall and P. Du Gay (eds), *Questions of Cultural Identity*, pp. 1–17. London: Sage.
- Hannis, M. 2015. 'The virtues of acknowledged ecological dependence: Sustainability, autonomy and human flourishing'. *Environmental Values* **24**(2): 145–164. <https://doi.org/10.3197/096327114X13947900181437>
- Hards, S. 2011. 'Social practice and the evolution of personal environmental values'. *Environmental Values* **20**: 23–42. <https://doi.org/10.3197/096327111X12922350165996>
- Hards, S. 2012. 'Tales of transformation: The potential of a narrative approach'. *Geoforum* **43**(4): 760–771. <https://doi.org/10.1016/j.geoforum.2012.01.004>
- Henwood, K., C. Groves and F. Shirani. 2016. 'Relationality, entangled practices and psychosocial exploration of intergenerational dynamics in sustainable energy studies'. *Families, Relationships and Societies* **5**(3): 393–410. <https://doi.org/10.1332/204674316X147584383416945>
- Henwood, K., and N. Pidgeon. 2013. 'Future identities: Changing identities in the UK – the next 10 years: DR17'. London: Government Office for Science.
- Hird, M. 2012. 'Knowing waste: Towards an inhuman epistemology'. *Social Epistemology* **26**(3): 453–469. <https://doi.org/10.1080/02691728.2012.727195>
- Hobson, K. 2006. 'Bins, bulbs, and shower timers: On the techno-ethics of sustainable living'. *Ethics, Place and Environment* **9**(3): 317–336. <https://doi.org/10.1080/13668790600902375>

- Jensen, J.O. 2008. 'Measuring consumption in households: Interpretations and strategies'. *Ecological Economics* **68**: 353–361. <https://doi.org/10.1016/j.ecolecon.2008.03.016>
- Kennedy, G. 2007. *An Ontology of Trash: The Disposable and its Problematic Nature*. New York: State University of New York Press.
- Kollmuss, A., and J. Agyeman. 2002. 'Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior?' *Environmental Education Research* **8**(3): 239–260. <https://doi.org/10.1080/13504620220145401>
- Lane, R., and M. Watson. 2012. 'Stewardship of things: The radical potential of product stewardship for re-framing responsibilities and relationships to products and materials'. *Geoforum* **43**: 1254–1265. <https://doi.org/10.1016/j.geoforum.2012.03.012>
- Maller, C., and Y. Strengers. 2013. 'The global migration of everyday life: Investigating the practice memories of Australian migrants'. *Geoforum* **44**: 243–252. <https://doi.org/10.1016/j.geoforum.2012.09.002>
- Marris, P. 1996. *The Politics of Uncertainty: Attachment in Private and Public Life*. London: Routledge.
- Nigbur, D., E. Lyons and D. Uzzell. 2010. 'Attitudes, norms, identity and environmental behaviour: Using an expanded theory of planned behaviour to predict participation in a kerbside recycling programme'. *British Journal of Social Psychology* **49**: 259–284. <https://doi.org/10.1348/014466609X449395>
- Parnell, R., and O. Larsen. 2005. 'Informing the development of domestic energy efficiency initiatives: An everyday householder-centered framework' *Environment and Behavior* **37**(6): 787–807. <https://doi.org/10.1177/0013916504274008>
- Pink, S., and K. Mackley. 2012. 'Video and a sense of the invisible: Approaching domestic energy consumption through the sensory home'. *Sociological Research Online* **17**(1): 3. <https://doi.org/10.5153/sro.2583>
- Quested, T.E, E. Marsh, D. Stunell and A.D Parry. 2013. 'Spaghetti soup: The complex world of food waste behaviours'. *Resources, Conservation and Recycling* **79**: 43–51. <https://doi.org/10.1016/j.resconrec.2013.04.011>
- Reckwitz, A. 2002. 'Toward a theory of social practices: A development in culturalist theorizing'. *European Journal of Social Theory* **5**(2): 243–263. <https://doi.org/10.1177/13684310222225432>
- Rettie, R., K. Burchell and C. Bernham. 2014. 'Social normalisation: Using marketing to make green normal'. *Journal of Consumer Behaviour* **13**(1): 9–17. <https://doi.org/10.1002/cb.1439>
- Rootes, C. 2009. 'Environmental movements, waste and waste infrastructure: An introduction'. *Environmental Politics* **18**(6): 817–834. <https://doi.org/10.1080/09644010903345587>
- Scanlan, J. 2005. *On Garbage*. London: Reaktion.
- Scannell, L., and R. Gifford. 2010. 'Defining place attachment: A tripartite organizing framework'. *Journal of Environmental Psychology* **30**(1): 1–10. <https://doi.org/10.1016/j.jenvp.2009.09.006>
- Schatzki, T.R. 2003. 'A new societist social ontology'. *Philosophy of the Social Sciences* **33**(2): 174–202. <https://doi.org/10.1177/0048393103033002002>
- Shirani, F., K. Parkhill, C. Butler, C. Groves, N. Pidgeon and K. Henwood. 2016. 'Asking

- about the future: Methodological insights from energy biographies'. *International Journal of Social Research Methodology* 19(4): 429–444.
<https://doi.org/10.1080/13645579.2015.1029208>
- Shockley, K. 2014. 'Sourcing stability in a time of climate change'. *Environmental Values* 23: 199–217. <https://doi.org/10.3197/096327114X13894344179248>
- Shove, E. 2003. *Comfort, Cleanliness and Convenience: The Social Organization of Normality*. Oxford: Berg.
- Shove, E. 2010. 'Beyond the ABC: Climate change policy and theories of social change'. *Environment and Planning A* 42(6): 1273–1285. <https://doi.org/10.1068/a42282>
- Shove, E., and M. Pantzar. 2007. 'Recruitment and reproduction: The careers and carriers of digital photography and floorball'. *Human Affairs* 17(2): 154–167.
<https://doi.org/10.2478/v10023-007-0014-9>
- Shove, E., M. Pantzar and M. Watson. 2012. *The Dynamics of Social Practice: Everyday Life and How it Changes*. London: Sage.
- Spaargaren, G. 2011. 'Theories of practices: Agency, technology, and culture: Exploring the relevance of practice theories for the governance of sustainable consumption practices in the new world-order'. *Global Environmental Change* 21(3): 813–822.
<https://doi.org/10.1016/j.gloenvcha.2011.03.010>
- Steg, L., L. Dreijerink and W. Abrahamse. 2005. 'Factors influencing the acceptability of energy policies: A test of VBN theory'. *Journal of Environmental Psychology* 25(4): 415–425. <https://doi.org/10.1016/j.jenvp.2005.08.003>
- Stern, P.C. 2000. 'Toward a coherent theory of environmentally significant behaviour'. *Journal of Social Issues* 56(3): 407–424. <https://doi.org/10.1111/0022-4537.00175>
- Stern, P.C., T. Dietz, T. Abel, G.A. Guagnano and L. Kalof. 1999. 'A value-belief-norm theory of support for social movements: The case of environmentalism'. *Human Ecology Review* 6(2): 81–97.
- Strengers, Y., and C. Maller. 2012. 'Materialising energy and water resources in everyday practices: Insights for securing supply systems'. *Global Environmental Change* 22(3): 754–763. <https://doi.org/10.1016/j.gloenvcha.2012.04.004>
- Suh, J. 2014. 'Towards sustainable agricultural stewardship: Evolution and future directions of the permaculture concept'. *Environmental Values* 23(1): 75–98.
<https://doi.org/10.3197/096327114X13851122269089>
- Thomas, C., and V. Sharp. 2013. 'Understanding the normalisation of recycling behaviour and its implications for other pro-environmental behaviours: A review of social norms and recycling'. *Resources, Conservation and Recycling* 79: 11–20.
<https://doi.org/10.1016/j.resconrec.2013.04.010>
- Watson, M., H. Bulkeley and R. Hudson. 2008. 'Unpicking environmental policy integration with tales from waste management'. *Environment and Planning C* 26(3): 481–498.
<https://doi.org/10.1068/c0510j>
- Watson, M., and E. Shove. 2008. 'Product, competence, project and practice: DIY and the dynamics of craft consumption'. *Journal of Consumer Culture* 8(1): 69–89.
<https://doi.org/10.1177/1469540507085726>
- Wenger, E. 1998. *Communities of Practice: Learning, Meaning and Identity*. Cambridge: Cambridge University Press.

- Wetherell, M., and N. Edley. 1998. 'Gender practices: Steps in the analysis of men and masculinity'. In K. Henwood, C. Griffin and A. Phoenix (eds), *Standpoints and Differences: Essays in the Practice of Feminist Psychology*, pp. 156–173. London: Sage.
- Whitmarsh, L., and S. O'Neill. 2010. 'Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours'. *Identity, Place, and Environmental Behaviour* **30**(3): 305–314. <https://doi.org/10.1016/j.jenvp.2010.01.003>
- Winnicott, D.W. 1971. *Playing and Reality*. London: Tavistock.
- Yates, C., and S.D. Sclater. 2000. 'Culture, psychology and transitional space'. In C. Squire (ed.), *Culture in Psychology*, pp. 133–146. London: Routledge.