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Challenges and opportunities for re-framing resource use policy with practice theories: The change points approach

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ABSTRACT

Concerns about the climate crisis and the escalating pace of global consumption are accelerating the pressure on governments to moderate public demand for resources like water, food and energy. Notwithstanding their increasing sophistication, standard behavioural change approaches continue to be criticised for a narrow understanding of what shapes behaviour. One alternative theoretical position comes from practice theories, which draw on interpretive and relational understandings to focus on practices rather than people's behaviour, and hence highlight the complex and distributed set of factors shaping resource use. While practice theories have gained considerable interest from policy institutions within and beyond the UK they so far have had limited impact upon policy. It has even been argued that there are insurmountable challenges in reconciling the ontological commitments of practice theories with the realities of policy processes. This article advances academic and policy debates about the practical implications of practice theories. It works with evidence from transdisciplinary research intended to establish whether and how key distinctive insights from social practice research can usefully be brought to bear on policy. We pursued this through co-productive research with four key UK national policy partners, focusing on effective communication of social practice research evidence on agreed issues. A key outcome of collaboratively negotiating challenging social theory to usefully influence policy processes is the 'Change Points' approach, which our partners identified as offering new thinking on initiatives promoting reductions in people's use and disposal of resources. The Change Points approach was developed to enable policy processes to confront the complexities of everyday action, transforming both how problems are framed and how practical initiatives for effecting change are developed. We discuss the case of food waste reduction in order to demonstrate the potential of Change Points to reframe behaviour change policy. We end the paper by addressing the potential and limitations of informing policy with insights from practice theories based upon the successes as well as the challenges we have met. This discussion has broader implications beyond practice theories to other fields of social theory, and to debates on the relations between academic research and policy more broadly. We argue that, through a co-productive approach with policy professionals, and so engagement with the practices of policy making, it is possible to provide a partial and pragmatic but nevertheless effective translation of key distinctive insights from practice theories and related research, to reframe policy problems and hence to identify spaces for effecting change for sustainability.

1. Introduction

Escalating demands for resources such as food, energy and water underlie multiple pressing environmental challenges. Historically, resource issues have been addressed through expanding supply or pursuing efficiency. However, the global scale of contemporary challenges necessitates urgent action also to reduce societal demand for resources such as energy and water, and mitigate detrimental impacts of other consumption practices (UNEP, 2015). While contemporary resource demand policies focus on changing consumer behaviour (Jackson, 2005), this article introduces a new approach to support the creation of policies that engage with the systemic connections between

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consumption and production, and wider socio-cultural, political, economic and material developments in which demand is enmeshed. This approach is informed by practice theories and in this paper we engage with critical debates regarding the challenge of working with practice theory to inform policy (Keller et al., 2016; Shove, 2014) by explaining the co-productive process through which our approach developed.

Behaviour change policy has become increasingly sophisticated, often moving well beyond naive models of individuals as rational economic actors and recognising the importance of unreflective routines, social norms, and the material context in which behaviour takes place (Browne, 2015; Whitehead et al., 2018). However, even this more sophisticated understanding is critiqued for maintaining a focus on individual behaviour and choices (Kurz et al., 2015; Russell and Fielding, 2010), requiring the adoption of pro-environmental behaviours on an unprecedented scale and neglecting to address wider societal developments in global consumption. Instead, social scientists outside of the established behaviour change paradigms (notably, Shove, 2010) draw on interpretive and relational perspectives to argue that policy initiatives can and should confront the complex and distributed relations shaping everyday routines and the resource demands they entail.

Within contemporary social science there are abundant theoretical resources for incorporating this complexity (Geels et al., 2015). Amongst these, practice theories are increasingly recognised as a way of reframing key policy problematics and initiatives in the face of global environmental change (Greene, 2018; Kadibadiba et al., 2018; Spaargaren, 2011; Strengers and Maller, 2012; Vihalemm et al., 2016). Empirical research informed by practice theories has repeatedly revealed how everyday actions are constituted across multiple sites and moments of doing, involving the convergence of different institutions, norms, materials, meanings and competencies. Such studies show the need for more nuanced and reflexive initiatives that engage in the distributed and non-linear processes that shape everyday action. Growing recognition of the limits of existing approaches has led policy and delivery bodies to show interest in practice theories (cf. Eppel et al., 2013; Hampton and Adams, 2018; Spurling et al., 2013). To date, however, there has been limited evidence of practice theories' practical policy applications (Orr et al., 2018).

This paper introduces a new approach, 'Change Points', which aims to inform policy initiatives relating to reducing resource consumption while holding on to the distinctiveness of ideas and insights from social practice research. A 'change point' is a moment in everyday routines when alterations in the patterns of doing could impact on resource use. Change Points, as a conceptual and methodological approach, was co-produced with partners from policy, industry and the third sector to leverage evidence from social practice literature and reframe specific policy challenges in the UK. The approach is distinctive in how it enables policy processes to confront the complexities of everyday action, transforming how problems are framed and how practical initiatives for effecting change ('change initiatives'[1]) are developed. Change Points is not a new version of practice theory, nor a new way of conducting academic research with practice theories, but rather a pragmatic move; an outcome of collaboratively negotiating challenging social ontology to usefully influence policy processes. Change Points is a research outcome, and one with demonstrated potential for reframing policy approaches. However, through introducing and critically reflecting on its uptake we contribute to debates over the potential for practice theories – and other relational interpretive theory – to make a difference to policy processes.

The next section introduces the problematic that our research confronted – the challenges of effectively articulating insight from practice theories with the institutionalised practices of policy making. Section 3 provides an account of the methods through which we went about tackling this problematic. Section 4 gives an account of the idea of change points, before the following section works through the Change Points approach with the example of reducing household food waste. This provides the basis for Section 6, which reflects on the potential of the approach, and so what can be learned for articulation of practice theories and other relational and interpretive approaches to reshape policy processes.

2. The challenges of changing policy with practice theories

Practice theories have gained increasing prominence due to the trenchant critiques of behavioural economics they underpin (e.g. Shove, 2010) and the demonstrations of the salience of alternative viewpoints they enable (e.g. Spurling et al., 2013). Whilst still new as a field engaged with policy processes, social theories of practice have a long intellectual tradition that reaches back at least to the works of Wittgenstein and Heidegger. The branch of practice theories that has been influential in social science perspectives on resource use and sustainable consumption has its roots principally in the philosophical works of Schatzki (1996, 2002) and Reckwitz (2002). It has travelled through broadly sociological treatment, such as with Shove et al. (2012), providing theoretical direction in the environmental social sciences.

Research with practice theories starts from a distinctive ontological position, where 'practices' – as opposed to individuals, social structures or discourses – are the primary locus of the social (Schatzki, 2002). One result is a radical reframing of research on resource sustainability. First, it highlights the invisibility of resource consumption, stressing that most consumption of resources like energy and water is not direct, but through appliances providing services required for accomplishing everyday practices (e.g. Shove and Walker, 2014). Second, it explores resource intensive patterns of consumption through reference to the collective development and reproduction of 'normal' ways of life. Hence, the demand for energy and water that is embedded in patterns of food consumption can be explained with reference to broader processes of technological, infrastructural and cultural change (Shove, 2003), including shifts in globalising food provisioning systems. Third, it approaches the things that people do – such as environmentally damaging formulations of sourcing non-seasonal food – as largely matters of socially shared routine.

The ways that practice theories enable unpicking of the heterogeneous complexity of social life makes for significant advances in social scientific knowledge, as well as enabling the critical reframing of policy problems. However, practice theories' commitment to dealing with complexity and interdependencies poses problems in the design of change initiatives with measurable outcomes. Nevertheless, several researchers have addressed this challenge and advanced the use of practice theories for change initiative design.

Policy implementation of practice theories in the UK was spearheaded by the Sustainable Practices Research Group (SPRG) – part funded by the UK and Scottish Governments. In their international review of behaviour change initiatives, Southerton et al. (2011) used detailed case studies to exemplify how such initiatives might move beyond the individual to attend to the social and material constituents of practices. The subsequent work of the SPRG culminated in a more direct exposition of practice thinking and its implications for policy (Spurling et al., 2013). This report aimed to enable a shift in governmental understandings of behaviour from 'the expression of an individual's values and attitudes' to 'the observable expression of [a] social phenomenon' (Spurling et al., 2013: 47). Of particular note was a recognition of systemic interdependencies between practices and the

[1] The term 'change initiative' is used here to indicate a wide variety of programmes, actions or interventions that can be initiated to instigate change in order to influence household and system sustainability. Such actions invoke multiple actors (governance rather than government), may have different targets and scales of intervention (e.g., a policy change versus a direct intervention with a household).

resulting complexities for designing change initiatives.

Meanwhile, others have sought to provide practical tools to implement practice theories. A pioneering attempt arose when the Scottish Government commissioned the development of a new behaviour change model designed to synthesise the insights from different theoretical domains, recognising the importance of the 'Individual, Social and Material' contexts of practice as articulated by Southerton et al. (2011). The resulting 'ISM tool' (Darnton and Horne, 2013) has since been promoted widely amongst public and voluntary sector organisations within Scotland (Sustainable Scotland Network, 2015) and now plays an integral role in its draft Climate Change Plan (Scottish Government, 2018).

Efforts at 'making practice theories practical' have not been limited to the UK. Prominent attempts include Vihalemm et al. (2016) comprehensive guide on designing, implementing and evaluating initiatives informed by practice theories, drawing on the authors' extensive policy-facing action research in Estonia. Similar progress in Australia includes the activities of the Beyond Behaviour Change research programme at RMIT, working with public and private sector partners to design and implement projects responding to policy issues ranging from home energy use to air travel (Strengers et al., 2015). Work in Ireland has engaged practice approaches to develop a participatory backcasting method to reimagine strategies to support sustainable consumption (Davies et al., 2014; Davies and Doyle, 2015). ENERGISE, a European international research consortium, has worked with practice theories, including in the review of more than a thousand change initiatives targeting energy use (Jensen et al., 2018). Meanwhile, a number of researchers have explored how to make practice theories practicable through design methodologies (Kimbell, 2009; Kuijer and Bakker, 2015).

Together, these and related contributions have achieved some degree of traction in policy making circles. At a general level, the growing salience of practice theories can be seen in their frequent inclusion in reviews of behaviour change methods published by national governments and international agencies (Darnton et al., 2011; Umpfenbach, 2014; Orr et al., 2018). Despite these inroads, direct impacts on the design of policy measures remain limited; and evaluations of practice-informed initiatives are 'almost totally lacking' (Keller and Vihalemm, 2017: 233; see also Orr et al., 2018). Of course, from a practice theories grounding, this should not come as a surprise. The practices of state and corporate governance evolve incrementally and often unpredictably, shaped by social, cultural and material processes (Sharp et al., 2015; Watson, 2017). Moreover, all new approaches face difficulties in achieving 'take up' in established policy environments. The challenges to be overcome by practice-oriented approaches are onerous for reasons that relate to their distinctiveness from established approaches. Indeed 'strong' readings of the theoretical position problematize the very possibility of predictable steering of practice through deliberately designed interventions. Shove (2014, 2015) argues that attempting to make practice theories amenable to current policy means losing their critical value, which lies in their paradigmatic opposition to dominant economic and behavioural models.

Two issues are particularly apparent here. First there are difficulties translating relational social theory into intuitive concepts and language that fit with existing policy processes. Where practice theories have had their most purchase, such as through the ISM tool, they have arguably done so at the expense of their theoretical distinctiveness (Shove, 2015). Visual representations of the ISM tool show an individual human depicted against the backdrop of an external socio-material context (Darnton and Horne, 2013: 4) making it easy for users to slip back to a psycho-econometric framing that it is the individual's behaviour that is the target of change, albeit with recognition of the relevant contextual factors.

Second, the social complexity exposed through practice theories is at odds with customary behavioural insights and their role in policy. In problematising simple causal relationships, practice theories can give rise to difficulties in attributing impact while ideas of distributed responsibility that emerge from social practice research make it harder to hold particular organisations to account (Evans et al., 2017).

These challenges illustrate a broader issue concerning how the practices of policy making and implementation continue to embody an essentially positivist worldview in which causes and effects can be isolated and controlled, and (often incremental) change tracked and tallied. This underpins institutionalised understandings of evidence in policy making which presents challenges for the sorts of evidence produced through qualitative and interpretive approaches. This is particularly the case where, as within practice research, evidence is of the distributed, non-linear interdependencies underpinning policy problems. Mayne et al. (2018) argue that policy is 'evidence-informed' rather than 'evidence-based', and growing numbers of social researchers in policy institutions are opening up opportunities for more diverse social theories, and consequently forms of evidence, to have influence in policy processes (Phoenix et al., 2019). However, established professional practices, institutional processes, available technologies and tools, and codification of evidence work, make it difficult for ideas and evidence coming from intellectual framings that are distinctive from those underpinning policy orthodoxies to take root (Hoolohan and Browne, 2018; Browne et al., 2015; Sharp et al., 2011). Evaluation of evidence remains dominated by a broadly positivist epistemology which puts priority on generalisability and reproducibility, exemplified through reliance on the 'gold standard' of randomised control trials (RCTs) to establish the effectiveness of many initiatives (Hampton and Adams, 2018).

It was these challenges we set out to confront. In seeking to enable distinctive insights from social practice research to reframe policy, we moved beyond 'translation' of research into policy to engage with the practices of policy making and working co-productively with key policy partners. A proliferation of researchers advocate for science to be oriented around more inclusive, transdisciplinary modes of working with societal stakeholders to achieve environmental and social change (Fam et al., 2017; Rau et al., 2018; Trencher et al., 2014). Much of this advocacy is oriented towards the policy spaces of global environmental and climatic change; intending to overcome wicked environmental challenges (Armitage et al., 2011; Dilling and Lemos, 2011; Jasanoff, 2004; Weichselgartner and Kasperson, 2010). In this project, we worked together with partners to learn together about the ways to bring interpretive social science into policy realms, legitimising it as a viable alternative to existing approaches. The next section discusses this research process.

3. Developing the change points approach

Change Points emerged through co-productive research between an interdisciplinary team of researchers across the Universities of Sheffield and Manchester and professionals in national policy partner organisations.[2] The research sought to address the gap between the interpretive and relational social theory frequently used in the academy and the more positivist behavioural understandings informing contemporary resource policy.

In line with challenges to the binary discourse that policy and academia form 'two communities' (Newman, 2014; Phoenix et al., 2019), the main research project informing this paper was developed because key contacts in our partner organisations shared our concern that current policy did not reflect complex factors shaping resource use. Alert to the desirability of getting new approaches to problem framing and the shaping of change initiatives developed on the topics they identified, these individuals, and colleagues they brought to the

[2] For a fuller account of the research process than there was space for here, see (Foden et al., 2019) and changepoints.net.

projects, were active participants in the co-production of the research proposal, processes, its outputs and its further development. The research was initiated to consolidate developments in social practice research on domestic resource use, as it relates to 'the nexus' of food, energy and water (World Economic Forum, 2011). The first funded project involved researchers and policy professionals collaborating in three workshops (Watson, 2016). These demonstrated the depth and range of social practice research evidence on resource consumption at home and showed that practice approaches already had significant traction with some policy professionals. But it was also clear that policy makers in the UK, and in other countries represented by participants, found it hard to utilise knowledge about practices in the home to meaningfully reshape policy problems relating to domestic sustainability or to inform their search for requisite solutions.

The second project responded to this gap, and provides the empirical evidence underpinning this paper. The project sought a pragmatic and necessarily partial translation of key insights from practice theories and practice research relating to the domestic kitchen, to support the reframing of policy problems and change initiatives. By working across different policy problems with various UK stakeholders we sought to enhance the intelligibility and portability of social practice knowledge across policy domains, and between governmental and non-governmental sectors. Our work hence aimed to 'open up' (Stirling, 2006) resource policy by developing alternative problem framings and policy methods that reflect the wider socio-material complexities in which resource consumption and everyday practices are enmeshed. The discussion of the paper below proceeds on the basis of our findings through this research process.

The four core partners and topics they selected are presented in Table 1. We engaged with key contacts from each organisation during proposal development, and then met relevant policy teams from each organisation twice during the project, encountering more than 30 policy professionals from our partner organisations. The process was not just a discussion of ideas but rather involved working together to create different practicable ways of doing policy development around household sustainability. Our key contacts described their involvement as being motivated by a desire to develop the evidence base for practice theories, as well as providing a way to reframe policy problems and design novel sustainability initiatives.

The research design followed four key steps. First, we met each partner to confirm the focus topic for our engagement. This built on the topics identified in the proposal, but gave opportunity for review, further specification, and updates on partners' orientation towards the topic, hence guiding the subsequent collation of evidence to be more specifically focused around the policy problems agreed with partner organisations. Second, the research team collated evidence about each topic, seeking to understand the factors shaping current practices including the variety and impacts of existing change initiatives. The evidence was collected from partners, expert interviews and through academic and grey literature review. For example, in relation to food waste we consulted over 40 documents (including non-academic research publications, strategy and campaign literatures). We also drew on our own previous extensive engagement with public, private and third sector stakeholders (Evans and Welch, 2015). Third, we synthesised insights from existing literature about domestic practices to understand the connections and to cross-fertilize between the topics. This stage was transformative as it enabled us to develop a coherent understanding and articulation of food and kitchen practices that bridged the four topics. The four literature reviews hence led into one single synthesised understanding. Once this understanding was in place, we explored its application to each of the topics.

In the final step we compared existing change initiatives with the potential alternative options opened up by the understandings of food practices our research had developed. These comparisons informed draft reports provided to each partner with a set of recommendations on the implications of our findings for reframing policy approaches, including the identification of specific change points where practices might be altered. We then worked with each partner to discuss our approach and its presentation, to identify remaining gaps in knowledge, and to reflect on how our recommendations might be translated into policy.

The idea of specific change points emerged from these meetings as a means for retaining key distinctive features of the published social practice-related evidence, and consistency with its underpinning ontological commitments, while still offering an understanding perceived as relevant to partners' policy problems. During this stage, partners identified Change Points as a nascent approach from our draft reports.

Together, the processes and methods we followed (discussed more fully in Foden et al., 2019) had a number of key distinctive features which enabled productive translation and development of ideas. First, the overall process above was co-productive between the research team and our policy partners. From the development of the initial research proposal, through development of how we communicated evidence in policy reports, to the very idea of developing a transferable approach, the work was collaborative. Second, this partnership working was enabled by the strong network of contacts, and established working relations, that we as research team had with a wide range of policy professionals. The strength and value of partnership did vary across different organisations, with the best collaborations being with individuals who could readily see the potential value of what we could do together, often based on previous working with team members or awareness of practice theories and related approaches. Third, the process benefitted from its iterative character, with partners engaged across a series of short projects and initiatives, involving ongoing review and re-commitment to the process. The idea of change points resulted from the collaborative discussion of effective ways to present evidence in our reports; and the identification of change points as the basis of a transferable workshop approach was itself driven by discussion with, and enthusiasm from, key partners in meetings that were part of this ongoing partnership.

The following two sections discuss the outcomes of this project, first by detailing the idea of change points, then exemplifying the Change Points approach and its consequences in relation to domestic food waste.

4. Change points

Change points are moments in everyday routines where different

Table 1.
partner organisations and agreed topics.

Partner organisation	Topic
Department for Environment, Food and Rural Affairs (Defra)	Household food waste and kitchen practices
Department for Business, Energy and Industrial Strategy (BEIS)	Energy use, flexibility and domestic food practices
Food Standards Agency (FSA)	Food waste, food safety and kitchen practices
Waterwise	Fats, oils, grease disposal and kitchen practices

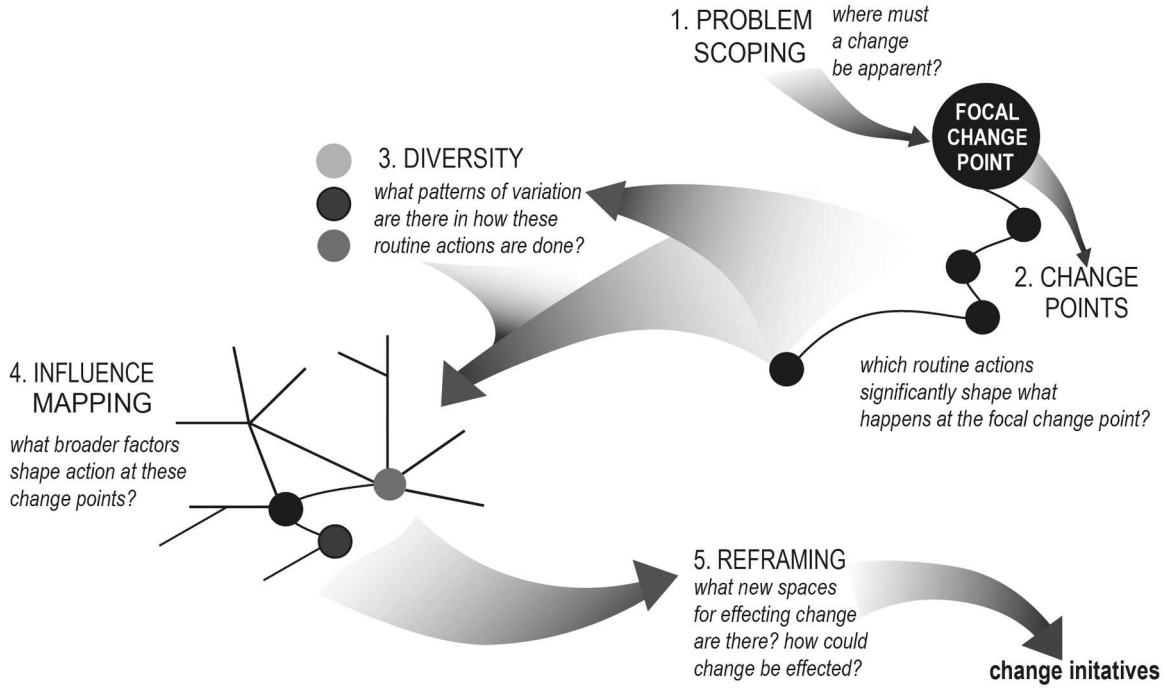

Fig. 1. Stages of the change points approach.

courses of action can be taken, with consequences for the policy problem being addressed. They are instances where the diverse arrangements and relations that shape courses of ongoing action have the potential to change in ways that can be advantageous for the outcomes of policy concern. They are also windows of opportunity – potential sites for deliberately effecting changes in ways of doing things. With respect to eating in the home, for example, these moments can be found in shared routines involved in acquiring food, preparing meals, and dealing with leftovers.

As noted above, by emphasising connections between everyday activities and wider cultural, political, technological and infrastructural developments, practice theories enable new ways of understanding issues such as resource consumption. However, retaining this complexity can be in tension with the clarity, focus and accountability required for policy development. Any attempt to bring relational social theory to inform policy initiatives must undertake pragmatic compromises. Our ambition has been to do so while holding on to the distinctiveness of ideas and insights from social practice research. The idea of change points was key to the productive negotiation of this tension, enabling engagement with the complex relationality of social life, while providing meaningful foci for analysis and reflection in the process of developing change initiatives. The idea of change points and the approach developed around it are an outcome of the process of collaboratively negotiating a way of enabling challenging social ontology to usefully influence policy processes.

Change points have two key characteristics. First, everyday life does not present itself as a series of discrete moments: a change point is not simply given by empirical reality. Rather, it is identified analytically and pragmatically as a potential site for effecting change in relation to the defined issue of concern. What counts as a change point, where boundaries are drawn between changes points, and so on, are decisions to be made in the course of using the approach to address a given policy problem.

Second, change points are inter-connected across space and time: what happens in one moment of action helps bring about different possibilities at another moment. Taken to its logical conclusion this could produce an unworkably complex web of connections. To avoid this, we draw a further analytical boundary between change points – the interrelated moments of activity directly of concern – and the wider activities and arrangements that nonetheless shape and are shaped by them, selectively re-introduced in a stage of analysis we call 'influence mapping'. If the aim is to reduce *household* food waste, we might therefore consider specific moments in routines comprising shopping to be a change point, but stock management by retailers to be an influence on that change point. Alternatively, if our focus was on *commercial* food waste, the reverse might be true. That this is a distinction introduced pragmatically for the purposes of analysis rather than a reintroduction of problematic *de facto* divides between subject and object or cause and effect bears reiteration.

Consequences follow from the relational character of change points. The key positive consequence for the design of policy initiatives is the opening up of new sites, targets and means for effecting change, through tracing different sorts of connections between change points. Thinking about connected change points across sites also increases opportunities for critical reflection on the intended and unintended consequences of an initiative. Change Points provides an approach which is cognisant of these inescapable characteristics of policy initiatives, rather than denying or ignoring them, but which nevertheless enables identification of meaningful actions.

The topic of seeking to reduce food waste can provide an example for working through the potential of the idea of change points, and some of the ideas and methods that we have worked around it.

5. Food waste and the change points approach

Food waste was chosen to illustrate the Change Points approach for three reasons. First, reducing food waste from home kitchens was a key goal for two of our policy partners. Second, the scale of the problem is well documented, as are the anticipated benefits of a successful response (FAO, 2013; IMECHE, 2013). Third, policy responses to household food waste in the UK are already mature, representing a key domain – notably via WRAP – where insights from social practices research are gaining traction (see Evans et al., 2017).

Food waste therefore provides an instructive topic through which to demonstrate the capacity of our approach to deliver distinctive ideas for effecting change. This capacity lies in enabling systematic thinking on

distributed relations, interactions and interdependencies that come to shape the actions of policy concern, facilitating pragmatic engagement with the profound complexity of everyday life. The test of the approach is not in producing new academic knowledge about the topic, but in making challenging forms of evidence meaningfully accessible to policy making processes and practices.

Our discussion here draws on our collaboration with project partners, through the methodology presented above (Foden et al., 2017). This work built on our previous engagement with policy and business stakeholders on food waste (Evans and Welch, 2015) and our previous empirical research with households (Evans, 2014; Watson and Meah, 2012) along with our wider evidence base of research on water and energy. We set the process out in five stages, represented in Fig. 1.

The first stage, of problem scoping, involves clear identification of a problem and agreeing with stakeholders what would constitute success. This includes identifying what we term the 'focal change point': in addressing the agreed problem, we examined our partners' concerns to identify the critical moment of routine action where they felt a positive change must be apparent. In seeking to reduce food waste from home kitchens, a strong candidate for the focal change point is the moment where edible food is disposed to the waste stream. The precise detail of action here inevitably varies, but this is the moment in kitchens where matter crosses the contingent line differentiating food from waste (i.e. non-food). Specifying a focal change point provides the grounding for a subsequent process of opening out to consider the diverse relations, distributed across time and space, which matter for shaping that key moment of action. It is axiomatic to the approach that the focal change point is probably not the point of action that a change initiative should directly target; but it is also the point where any successful change initiative will have a measurable effect (in this case, less edible food going into a residual waste bin). So whatever change is targeted directly, to be successful it must end up with less edible food going into the waste stream.

The second step is to follow how the focal change point is shaped by connected moments of action – a sequence of other change points – in the shared social routines that might be carried out by single practitioner, or collective of practitioners such as a household. In relation to household food waste we followed the food itself to identify six locations of change points that together help constitute the moment of disposing; and which can potentially be performed in different ways, with consequences for food disposal. In itself, the list is banal, but it serves two functions. First, by recognising how moments of action across these locations are linked through both a practitioner's routines and the flows of material, the connectedness of action across time and space is made clear. Second, it provides a straightforward cut through the complexity of relations that come to shape the focal change point, providing the next step toward thinking about change initiatives in an expanded way. This also provides the basis for the subsequent step which extends consideration from these points in a single practitioner's routines to more widely distributed relations, such as of retail and systems of provision.

The six locations of change points identified in relation to household food waste are:

1 Shopping: the type, quantity and condition of foods bought ultimately shapes what is later thrown away, as can shopping frequency and the type of retail outlet (Jörissen et al., 2015; Williams et al., 2012).
2 Storage: where and how food is kept can impact on waste in surprising ways. Cold storage can prolong life (Mattila et al., 2018), but fridges and freezers can also be places where food becomes hidden and quietly decays (Evans, 2012; Waitt and Phillips, 2016).
3 Preparation: edible food is separated from unwanted detritus through rinsing, scrubbing, peeling and trimming. What counts as food or otherwise here is both a product of its materiality and a matter of convention (Evans, 2014; Gillick and Quested, 2018; Roe, 2006a, 2006b).
4 Cooking: making a meal often leaves unused ingredients, not always easily incorporated into other recipes (Evans, 2014). This increases with complex recipes requiring smaller quantities of a longer list of ingredients.
5 Eating: sometimes more food is prepared and cooked than can be eaten in one sitting. Whereas surplus food from cooking is often saved for future use, this is rarely true of food left on plates (Evans, 2012; Fraser and Parizeau, 2018). Different types of meal may produce more or less surplus food, with 'socially significant' eating a more likely contributor (Southerton and Yates, 2014: 146).
6 Dealing with leftovers: surplus ingredients and cooked leftovers commonly require further storage, preparation and/or cooking before they are eaten (Mattila et al., 2018). However, they are not always put to use before they deteriorate.

In the third stage, of engaging complexity, the aim is to consider how action at a given change point already varies through recognising diversity. For example, who is chiefly responsible for food work and how does that responsibility sit alongside other pressures and demands on time and energy (Evans, 2018; Fraser and Parizeau, 2018; Wheeler and Glucksmann, 2015)? How do household members co-operate or manage conflict over these activities (Wills et al., 2013)? How do experiences vary between different types of households and practitioners (Browne et al., 2014)? Recognising diversity and thinking through its consequences serves three functions. First, it enables recognition of existing ways of provisioning and disposing of food which produce more or less food waste – what can be learned from these differences that might inform how change is pursued? Second, it encourages reflection on unequal burdens and questions of unintended consequences. Third, it helps emphasise the broader social influences that shape action at the focal change point.

The fourth 'influence mapping' step is to trace the diverse social and material factors shaping action at each change point. These can include: routines and rhythms (e.g. of households or organisations); systems of provision and their organisational practices; representations and meanings (including how marketing, advertising, social media use and wider social relations shape and shift norms, e.g. of good food or body image); regulations and other institutionalised codes of conduct; and the provision of ancillary products and services. These factors shaping what people do are important as they can help reveal the actors that could have influence and be a target for effecting change.

A key point here is that the list of change points makes thinking through the complex relations shaping social practices intuitive and accessible. For example, it becomes evident that although food becomes waste through actions taken in the above locations, diverse causes of those actions (and targets for making a difference in relation to the focal change point) may be elsewhere, for example, in the complexities of daily routines. Our collaborative work on food waste developed a number of key fields of influences that could be considered when identifying targets for change initiatives. This list was developed through our thorough review of published research on food waste (step 2) that is informed by practice theoretic sensibilities. It has clear transferability to other spheres of practice, but research into other topics could extend or otherwise alter this list. For food waste, these influences include:

1 Unconscious routines: much of what people do on a day-to-day basis is a matter of routine, involving little conscious deliberation or reflection (Gronow and Warde, 2001). Evidence from varied perspectives suggests this is true of household food practices from purchase through to disposal (e.g. Wahlen, 2011; Wansink and Sobal, 2007; Wills et al., 2013).
2 Time and convenience: householders find ways of managing domestic life that work for them and minimise disruption (Nicholls and Strengers, 2015; Southerton, 2003). Grocery shopping, food

preparation, cooking and eating often follow consistent patterns from one week to the next. Examples include a regular night of the week for shopping, or a repertoire of 'tried and tested' meals that suit the needs and tastes of household members and fit well into the normal rhythms of daily life (Evans, 2014).

3 Cultural conventions: household practices are not merely a product of personal preferences or individual habits; they reflect and reproduce shared understandings and anxieties (Jackson et al., 2013; Jackson, 2015). Conflicting societal concerns – from what constitutes a 'proper' meal (varied, prepared from scratch, eaten together) to fears around unhealthy diets and risky foods (Halkier, 2009; Murcott, 1995; Parsons, 2016; Short, 2006) – are negotiated every mealtime and on each visit to the supermarket, helping create the conditions by which food goes to waste (Evans, 2014; Watson and Meah, 2012).

4 Materials and technologies: the physical properties of food and the kitchen are instrumental in shaping what people buy and how they store, prepare, cook, eat and dispose of it. For example, the changing materialities of deteriorating food – and the bodily reactions it provokes – play an important role in how it is subsequently handled, potentially leading to its disposal via the waste stream (Blichfeldt et al., 2015; Evans, 2014; Waitt and Phillips, 2016; Watson and Meah, 2012).

5 Systems of provision: prevailing production and retail practices facilitate the routine overprovision of food, helping create waste in home kitchens. Aside from price incentives for bulk buying, many fresh goods are often simply unavailable in small quantities (Graham-Rowe et al., 2014; Williams et al., 2012). In interaction with expectations about cooking with fresh and varied ingredients, this contributes to surplus ingredients remaining unused after cooking (Evans, 2014).

6 Conduits of disposal: the kitchen bin is highly effective at concealing troublesome material and reliably connects household practices to waste management infrastructure (Evans, 2014; Metcalfe et al., 2013). To be successfully adopted, alternative means of disposal for recirculating waste need to be similarly effective and reliable.

The fifth stage involves 'reframing' the policy problem as a result of the insights obtained. This brings us to the key test identified at the beginning of this section, which is to make challenging ideas from social theory meaningfully accessible to the policy making process and effectively reframing how initiatives are designed. There are inherent difficulties in doing this, given that the institutionalised practices of policy making and initiative development are shaped around and embody particular social ontologies with concomitant commitments to particular ideas of evidence and evaluation. Finding a way for challenging ideas to come into those practices and processes is a demanding objective, which we tackled in two ways.

First, the approach highlights opportunities for changing practices in the kitchen directly, such as through implications of understanding household routines and rhythms across different households; or about the potential role of domestic technologies; or routes to changing shared social norms with consequences for food waste, whether those that lead to wasteful food preparation, or to too-ready disposal of food.

Second is that Change Points provides means to trace the connections from practices in the kitchen to the broader systems of production and provision which shape those practices. When people buy, prepare and cook food these activities are part of a wider complex of interdependent practices together making up the 'food provisioning system', including farming practices, retail practices and so on (Horton et al., 2017). Changing the way that food is supplied will impact on how people eat, and vice versa. Similarly, how people dispose of food waste is part of a complex of interdependent practices making up the 'food disposal system', including waste management practices, governance and the operation of all associated infrastructure. At a basic level, there are very clear links between how food is accessed and food waste. If people can only acquire food in quantities that exceed their requirements for consumption, then the surplus will be at risk of wastage. It follows that it is necessary to identify the conditions that effect access to food, which include aspects such as daily routine (e.g. working hours and commuting practices have bearing on the types of shop, nature and volume of purchase), and planning decisions. The issue here is that people's shopping habits need to be understood in relation to a range of other issues including transport infrastructures, urban planning, housing development, working hours and the material culture of the home (e.g. availability of freezers). This opens up a range of entry points to consider or target if the objective is to reduce waste by changing how people shop.

A stepped approach to grappling with that interdependence, across distributed relations, traced from and connected to the key problematic being considered, is the key distinctive feature of the Change Points approach. Finding means to enable policy professionals to recognise and work with relations and interdependencies was a key objective of our development of the approach. It is that character of the approach which makes it challenging, rather than simply useful, for processes of developing change initiatives. Challenges that the approach faces in being taken to policy are considered in the next section.

Our partners' feedback in meetings on our draft policy reports[3] identified the potential for further developing our underpinning ideas as an approach capable of application across policy topics and domains. While all four policy briefs were focused on kitchen and food practices related to the water-energy-food nexus, Waterwise immediately sought to use the Change Points perspective to shape other conversations within their professional remit (in this case ongoing discussions around ways to understand water demand and efficiency). Policy partners identified that the approach did assist with problem reframing, and encouraged us to develop a process through which these insights could be more readily incorporated within policy processes.

With this encouragement, through subsequent funded projects we have collaboratively developed a toolkit based on the Change Points approach, designed as a workshop process and intended for use by policy professionals working together to reframe a specific policy problem to give rise to a variety of new ideas for change initiatives (Foden et al., 2019). With the launch of the toolkit, the approach has gained increasing traction across UK national government departments and agencies. Following invited contributions to inter-agency behaviour change policy working groups, we have achieved positive endorsement of its potential to offer an alternative to existing behaviour change models. The interest the approach is gaining beyond the policy stakeholders with whom it was co-produced supports our claims that it offers policy professionals something distinctive and useful for reframing policy initiatives on sustainable resource consumption. For example, to date, our own team has been involved in applying it to understanding sustainable protein challenges, clothing waste minimisation, water demand reduction, and livestock and wildlife protection amongst others. What does the approach offer as an alternative perspective to existing models of change in government, and with what implications for policy making to be shaped by relational and interpretive social theory?

6. Changing policy with social practice theories?

Clearly, the validity and utility of any social theory is not dependent on its ability to change policy-making. As discussed above, the practices of policy making – and so its institutions, professions, procedures, standards and norms – embody dominant social ontologies (Watson, 2017; Hoolohan and Browne, 2018). This can make for a difficult environment for ideas from other ontological grounds to take root. Indeed, there are arguments that attempts to take practice theories to policy are misguided. For Shove, the value of practice theories is

[3] All reports are available via changepoints.net

precisely in their being “paradigmatically at odds” with dominant thinking and that “the project of moulding practice theory into some policy-amenable form, is to miss the point, and to misunderstand what makes practice theories distinctive, and distinctively valuable” (Shove, 2015: 55–56). To reduce practice theories to a form amenable to policy processes would indeed mean robbing them of their distinctive potential for thinking and researching social phenomena; and for providing critiques of dominant policy framing.

We did not set out to dilute the ontological commitments and analytic purchase of practice theories in order to render them amenable to policy engagement. Our intention was to bring the insights from practice theories into a process of co-learning across academic and policy stakeholders as to how such approaches may positively shape policy spaces around household sustainability and resource consumption. Impelled by the interest from policy makers from our first project, we engaged with their practices, collaborating with them to develop ways of bringing distinctive insights from social practice research to inform policy processes. As stated above, the Change Points approach is not a new version of practice theories, but a partial and pragmatic translation of distinctive insights from practice theories, intended to enable practitioners to participate in reframing policy problems and developing different spaces for effecting change (Mitchell et al., 2015). Such reframing is becoming commonplace in academic articles and workshop discussions (Section 2), Change Points provides accessible, user-led tools and resources to extend these discussions.

The approach and the toolkit carry two key distinctive insights from practice theories. First, by approaching a given issue through the focus on change points, it enables attention to be diverted away from individuals to practices. Socially shared routine actions, the materialities and the flows of doing that shape them are at the centre of attention. Second, the approach carries the relationality that is characteristic of practice theories (and other relational theories). It pushes for the diverse relations and connections that come to shape moments of doing to be followed, potentially highlighting points for attention at considerable remove from the ‘focal change point’ that needs to be changed. The idea of change points provides a grounding for engaging with the inevitable complexity that results from this, while avoiding making individuals or discrete organisations the default reference ‘change’ point. In summary, rather than suggesting that it is individuals that need to change, Change Points focuses on how societal change can be supported. By enabling a set of practitioners to examine the many complex ways that culture, infrastructure and social expectations ‘lock-in’ an unsustainable practice, Change Points helps policy professionals to identify a variety of different change initiatives which might enable more sustainable practices to be ‘unlocked’. It follows that Change Points is distinguished from established behaviour change toolkits and approaches because it enables these insights from practice theories to be made practicable in the practices of policy and initiative formulation.

As indicated above, the approach, particularly via the toolkit, has gained significant traction with a range of national government departments and agencies, as well as third sector and commercial actors. At the time of writing, there are several live processes of engagement with different partners on current policy concerns. Of course, ‘policy professionals’ are diverse, with a breadth of backgrounds and current roles. Throughout our collaboration with policy professionals, we have encountered professionals in policy organisations who are alert to the limits of dominant approaches to behaviour change, and aware of the existence and potential of very different approaches in the social sciences. Enthusiasm for our approach has often been from collaborators who see in it a practicable means to bring different ways of framing problems and developing initiatives into policy settings. Despite the approach's reception and uptake, we are aware of challenges to realising its potential in use.

First, there is a risk that people engaging with Change Points do not escape tracks of established thinking. It is unavoidable that the approach could lead to initiatives which are entirely unsurprising, such as an education campaign, or minor changes to the immediate material environment of a behaviour to nudge choices. As Keller and colleagues identify, attempts to bring practice theories to inform policy can easily be read as offering nothing more than some additional context to existing behavioural approaches – a kind of ‘Nudge plus’ (Keller et al., 2016). Unsurprising initiatives like these can certainly be useful but arriving at them would not be to realise the distinctiveness of the approach.

Second, where the potential of the approach is more fully realised through identifying more ambitious targets for effecting change, the actions that need to follow may exceed the remit or capacities of the professionals engaged in the process. Tracing relations far from the principal focus of concern – the focal change point – can inevitably lead into policy territory which crosses boundaries between institutions and organisations of governance. Pursuing more radical opportunities identified through the approach is likely to require collaboration across governance actors, which include many well outside of government as conventionally defined (Rhodes, 2007). Critiques of policy being ‘siloed’ can be easily overstated, with policy professionals often working across institutional boundaries. However, some boundaries are more permeable than others meaning some partnerships will be less likely to happen. Further, this sort of work can be demanding for policy professionals and institutions which face serious resource constraints.

Third, following non-linear relations to identify potentially distant targets inevitably creates challenges for establishing causality between an intervention and the change sought. This makes demonstration of effectiveness challenging when compared to the sorts of initiatives typically identified through behavioural economics approaches, often designed to lend themselves to testing through RCTs. For understandable reasons, publicly funded governing initiatives are held to account on the grounds of value for money (HM Treasury, 2011). It is inevitable that the Change Points approach will produce some potential change initiatives where meaningful impacts can be anticipated, but causality between the target for the initiative and the final effect cannot be conclusively demonstrated given the distributed influences on resource consumption. Arguably it is here that insights from practice theories as worked through the Change Points approach still hits against the limits of institutionalised policy processes and practices. It invokes a different mode of thinking about and evaluating change initiatives than exists in contemporary policy regimes. This need to think about evaluation differently is not just restricted to discussions of social practice informed policy design but underpins deeper questions within the UK government about how methodologies of policy design and evaluation might reflect complex systems change.

These are significant challenges to realise the potential of practice theories, and Change Points, in reframing policy. They also represent challenges that are inevitable when bringing critical insights from relational and interpretive theoretical approaches more broadly to bear on policy processes (Sharp et al., 2011). Despite these challenges, the Change Points approach is gaining traction with a range of policy partners using it as a means for creative critical dialogue on patterns of consumption, dynamics of change and the systemically distributed responsibilities for reshaping consumption. The effective communication of key insights from practice theories is the basis of the distinctiveness which draws this interest. The co-productive process undertaken throughout has been key to developing an approach based upon a meaningful articulation of key insights from practice theories. Our conclusion draws out the broader implications of both the successes and challenges our efforts have met in developing and working with the Change Points approach for wider debates on research, policy and the impact agenda.

7. Conclusion

There is a well-established debate about the desirability, and even

the possibility, of informing policy with practice theories (Chatterton, 2011; Shove, 2014). Can anything be wrested from practice theories, and social practice research, to meaningfully inform policy making processes without undermining the theories' challenging ontological commitments and capacity for distinctive analysis? This particular debate is itself situated in broader discussions about the responsibilities, opportunities and costs of academic researchers seeking to have 'impact' on policy making (Slater, 2012; Ward, 2007). Should critical edges of evidence and ideas be dulled to render them amenable to a policy agenda?

The research we discuss in this article challenged the boundary that underpin these debates, and our experience contested the binary which that boundary delineates – that between academic researchers and policy professionals (Newman, 2014; Phoenix et al., 2019). We challenged it by undertaking an iterative, ongoing collaboration with policy partners, initially to more effectively translate research evidence in relation to specific policy problems; but subsequently to develop the Change Points approach, enabling the reframing of policy problems and of the design or change initiatives to address them. Our research experience contested the binary between academic research and policy through working with policy professionals who were clearly alert to the limits of dominant approaches, and enthusiastic to collaborate on a means for bringing useful insights from current social theory into policy processes. As we have emphasised above, our work was not a matter of developing a policy amenable version of practice theories. Rather it was a process of developing together a partial and pragmatic translation of key distinctive insights from practice theories and related research, to usefully reframe policy problems and enable the identification of different spaces for effecting change.

Specifically, change points provide clear points of focus across connected moments of activity – essentially abstracting complex temporal sequences into tangible instances of action – which then provide the grounding for pragmatically engaging the complexity of diverse and distributed relations which social practice research reveals to be constitutive of those moments. The process has not been one of reshaping ideas to fit neatly into the established practices and projects of policy making. What has made the process challenging and productive is that we have rather worked with policy professionals to develop an approach which *can* work in processes of problem framing and initiative development, while bringing challenging ways of thinking into those processes, with implications for the reshaping of institutionalised policy practices.

Within this paper we have focused on food waste as an example. As discussed, the approach is being used with ever more diverse issues, including topics of sustainability beyond home resource use, from sustainable diets to wildlife protection. We have focused too on UK policy examples, and the UK policy landscape. However, the significance of moving to approaches that create systems change, as opposed to incremental changes or reforming the same system, is of escalating salience globally. Reflecting on how we leverage insights from the social sciences to create deep systems change is particularly important given the ambitious targets being set around sustainable consumption of water, energy, food, and the connections of everyday practices to low carbon transitions, within the Sustainable Development Goals. In opening up sites for effecting change potentially at considerable distance from the immediate context of a problematised behaviour, the approach reflects our ambitions to challenge behaviour change policy to critically engage the wider social relations that shape practices, and so to look for wider targets for change initiatives.

CRediT authorship contribution statement

Matt Watson: Conceptualization, Funding acquisition, Investigation, Writing - original draft, Writing - review & editing, Supervision. **Alison Browne:** Conceptualization, Funding acquisition, Investigation, Writing - original draft, Writing - review & editing. **David Evans:** Conceptualization, Funding acquisition, Investigation, Writing - original draft, Writing - review & editing. **Mike Foden:** Conceptualization, Investigation, Formal analysis, Writing - original draft, Writing - review & editing. **Claire Hoolohan:** Conceptualization, Investigation, Writing - original draft, Writing - review & editing. **Liz Sharp:** Conceptualization, Funding acquisition, Investigation, Writing - original draft, Writing - review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Supplementary materials

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