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**Article (Accepted version)
(Refereed)**

Original citation:

Gough, Ian (2017) *Recomposing consumption: defining necessities for sustainable and equitable well-being*. [Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences](#), 375 (2095). p. 20160379. ISSN 1364-503X

DOI: [10.1098/rsta.2016.0379](https://doi.org/10.1098/rsta.2016.0379)

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Available in LSE Research Online: May 2017

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Recomposing consumption: Defining necessities for sustainable and equitable wellbeing

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Final draft paper for Royal Society Philosophical Transactions A
February 2017

Media summary

To keep climate change within safe limits we need to change rich country consumption patterns: to 'recompose' consumption so that necessities are provided for all citizens but luxuries are restricted to reduce emissions. To provide a guide through this contentious territory I justify a notion of universal human needs and set out a method to identify necessities in a particular time and place. The study shows how this procedure can identify new forms of sustainable consumption that are fair, effective and legitimate. It also suggests hybrid forms of eco-social policy that can assist in the just recomposition of consumption.

Abstract

This paper focuses on consumption in the affluent world and the resulting level, composition and distribution of consumption-based emissions. It argues that public policy should foster the recomposition of consumption, while not disadvantaging poorer groups in the population. To combine these two imperatives entails making a distinction between goods and services that are necessary for a basic level of wellbeing, and those that are surplus to this requirement. The argument proceeds in six stages. First, the paper outlines a theory of universal need, as an alternative conception of wellbeing to consumer preference satisfaction. Second, it proposes a dual strategy methodology for identifying need satisfiers or necessities in a given social context. Third, it applies this methodology to identify a minimum bundle of necessary consumption items in the UK and speculates how it might be used to identify a maximum bundle for sustainable consumption. The fourth part corporate barriers and structural obstacles in the path of sustainable consumption. The fifth part reveals a further problem: mitigation policies can result in perverse distributional outcomes when operating in contexts of great inequality. The final section suggests four eco-social public policies that would simultaneously advance sustainable and equitable consumption in rich nations.

Acknowledgements: I am grateful to three anonymous referees of this paper, and at an earlier stage to many colleagues who advised on the work in progress. The Grantham Research Institute on Climate Change at the LSE provided helpful research assistance for this paper.

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Introduction: the issues

Climate change is recognised as an egregious threat to human habitats and welfare. It requires global responses, such as those recognised, though inadequately, at Paris. The rich world has a disproportionate responsibility and a duty to mitigate emissions very fast. This paper concentrates on *consumption and consumption-based emissions* for reasons explained below. It is concerned only with the developed economies of the OECD.

Simplifying greatly, there are three basic strategies for eliminating net carbon emissions by the second half of this century, the goal of the 2015 Paris Agreement:

C1. Ramping up the 'eco-efficiency of production', by reducing energy and emission intensities of production. This is the hegemonic strategy today.

C2. 'Recomposing' consumption: reducing consumption emissions by switching from high- to low-carbon services and goods, without necessarily cutting overall consumption expenditure.

C3. Post-growth: reducing then stabilising absolute levels of consumer demand; moving towards a steady-state economy.

This paper considers only C2, though in my forthcoming book I also discuss C1 and C3 (Gough 2017).

The assumption is that C1 alone cannot be adequate, for two main reasons. First, the embodied emissions of consumers in the developed world greatly exceed their production-based emissions, whereas the reverse is true of the developing world (https://www.oecd.org/sti/ind/EmbodiedCO2_Flyer.pdf). For reasons of justice and equity it is the people and places benefitting from the goods and services emitting GHG gases that should count, not the people and places where these are produced. Consumption emissions are more closely related to wellbeing outcomes than production emissions (Steinberger et al., 2012).¹ Throughout this paper the emissions referred to are consumption-based emissions, not production-based or territorial emissions.

Second, it is extremely unlikely that improvements in overall 'emissions efficiency' across economies can reduce GHG emissions fast enough to ensure a safe climatic regime (Jackson (2009), cf Stern (2015); Allwood et al (2013). To illustrate this, consider the decomposition of future consumption-based emissions in Sweden – Figure 1 (Larsson 2014; cf Nässen 2014). Under business-as-usual they more than double by 2015. If the rate of improvement of eco-efficiency matches that of the previous fifteen years (1.4%pa), Sweden's emissions would almost level out - a considerable achievement given that the 'low hanging fruit' will already have been picked. But even a further doubling of this rate (shown by the blue line) would not be enough to achieve the necessary emissions target of 2 tonnes per head by 2050 to have a reasonable chance of keeping global temperature rise below 2°C.

¹ It is true that people and places where goods are produced benefit from employment, wage income and profit, but they also suffer pollution and health costs. The need approach that informs this paper defines wellbeing in terms of non-monetary outcomes.

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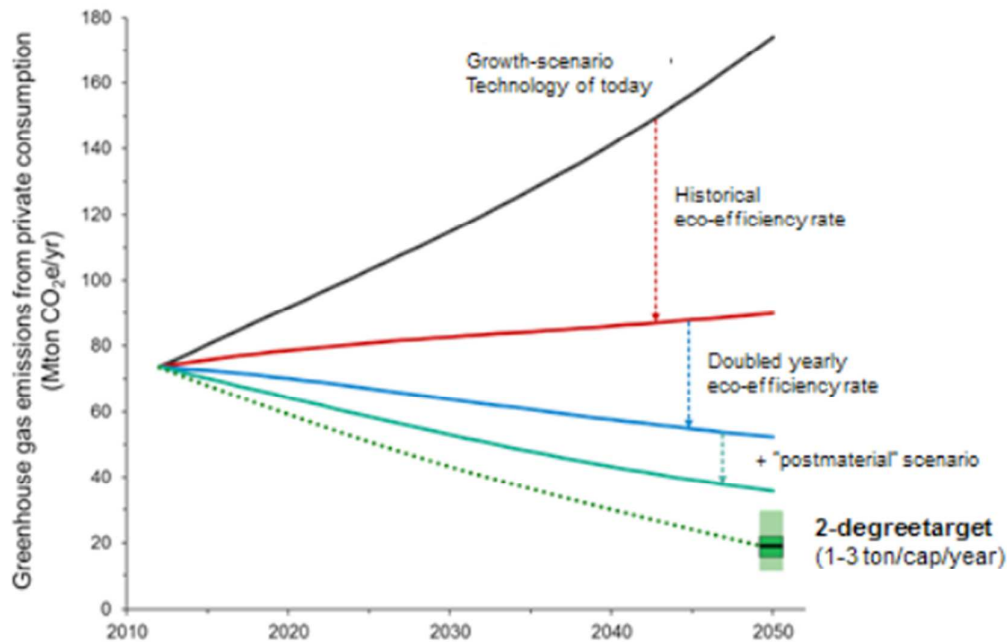


Figure 1. Scenarios for greenhouse gas emission from private consumption in Sweden 2012-2050 Source: Larsson (2014) p.3.

Thus, Larsson contends, 'postmaterial' (C2) or 'sufficiency' (C3) policies will also be needed. The next stage, shown by the green line, models a variety of C2 policies targeting, for instance, beef consumption, frequent air travel and expensive second homes. But these would still not be enough. A sustainable level of emissions is finally achieved in his model by introducing a C3 policy - a reduction in total consumption expenditure achieved by reducing reduced average hours of work. A major goal of this paper is to show how recomposing consumption (C2) might be operationalised.

However, another goal must have equal weight in this exercise: equity and the maintenance of some adequate level of wellbeing for all citizens. Recomposing consumption in an unfair way by hitting those with low incomes would be unethical, illegitimate and counterproductive. Unfortunately, as discussed later, the goals of sustainability and equity are not easily reconciled in unequal, highly-commodified societies like our own.

Thus we need a conceptual framework that can embrace both wellbeing and sustainable emissions. I argue that a theory of universal human needs can provide this framework. Since human needs are universal over time and space, and since there are strong moral claims for meeting the needs of all people, they provide a way of understanding wellbeing in rich countries that does not trespass on the need-satisfactions of other peoples now or of future generations, as the Brundtland Report advocates.

Need theory enables us to distinguish *necessities* from *luxuries*². To recompose equitably entails making a distinction between goods and services that are necessary for a basic level

² 'Luxuries' suggests mansions and private yachts, but I cannot think of a better term to refer to everything that is not a 'necessity'.

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3 of wellbeing, and those that are surplus to this requirement. By prioritising the former need
4 theory provides a bridge to relate social, global and intergenerational justice (Gough 2015).
5 In the language of Giulio and Fuchs (2014), it enables us to define a 'consumption corridor'
6 between *minimum* standards, allowing every individual to live a good life, and *maximum*
7 standards, ensuring a limit on every individual's use of natural and social resources in order
8 to guarantee a good life for others in the present and in the future.
9

10
11 The argument proceeds in six stages. First, the paper outlines a theory of universal need, as
12 an alternative conception of wellbeing to consumer preference satisfaction. Second, it
13 proposes a dual strategy methodology for identifying need satisfiers or necessities in a given
14 social context. Third, it applies this methodology to identify a minimum bundle of necessary
15 consumption items in the UK and speculates how it might be used to identify a maximum
16 bundle for sustainable consumption. The fourth part corporate barriers and structural
17 obstacles in the path of sustainable consumption. The fifth part reveals a further problem:
18 mitigation policies can result in perverse distributional outcomes when operating in contexts
19 of great inequality. The final section suggests four eco-social public policies that would
20 simultaneously advance sustainable and equitable consumption in rich nations.
21
22

23 Human need and sustainable wellbeing

24
25
26 Need theory challenges the dominant conception of wellbeing within economics, preference
27 satisfaction theory. This rests on two normative foundations: that individuals are the best
28 judges of their own preferences or wants, and that what is consumed should be determined
29 by the private consumption preferences of individuals. It thus precludes questioning
30 consumer preferences, except within narrow limits. However, it has been subject to
31 numerous challenges.³ An alternative is required.
32

33 In *A Theory of Human Need* (1991) Len Doyal and I identify a conceptual space of universal
34 human need, recognize cultural variety in meeting needs, but aim to avoid subordinating the
35 identification of needs to such cultural contexts. Our essential premise is that all individuals,
36 everywhere in the world, at all times present and future, have certain basic needs. These
37 must be met in order for people to avoid harm, to participate in society and to reflect
38 critically upon the conditions in which they find themselves. Only if we understand needs in
39 this way - in universal terms, applied across time and place - can we plan for and measure
40 progress towards our social and environmental goals, both globally and into the future.
41
42

43 The universality of need rests upon the belief that if needs are not satisfied then *serious*
44 *harm* of some objective kind will result. This is not the same as subjective feelings like
45 anxiety or unhappiness. It refers to functions not feelings. This harm implies obstacles to
46 successful social *participation*. All our private and public goals are achieved on the basis of
47 successful social interaction with others. It follows that *participation* in some form of social
48 life without serious systematic limitations is our most basic human interest.
49

50 *Basic needs are then the universal preconditions for effective participation in any form of*
51 *social life*. To do this a person must be able to formulate aims, understand how to achieve
52 them, and act to strive to achieve them in practice. Whatever a person's goals, whatever the
53
54

55 ³ In brief, on the grounds of subjectivity, epistemic irrationality, endogenous and adaptive
56 preferences, the limitlessness of wants, the absence of moral evaluation, and the non-specificity of
57 future preferences (Gough 2015).
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cultural practices and values within which she lives, she will require certain prerequisites or basic needs, in order to strive towards those goals. In this way we identify, alongside social participation, *health* and *autonomy* as the most basic human needs. Survival is the most basic need, but all people require a modicum of good physical and mental health for effective social participation. Basic autonomy can be defined as the 'the ability to make informed choices about what should be done and how to go about doing it'. In addition we distinguish a higher level of *critical autonomy*: the capacity to compare cultural rules, to reflect upon the rules of one's own culture, to work with others to change them. At this higher level, drawing on imagination, past examples or comparisons with other ways of life, people can begin to question the taken-for-granted cultural frames of their own ways of life

Human need theory has been advanced from a variety of perspectives (Dover 2016). One of these is eudaimonic psychology (as opposed to hedonic psychology), which provides argument and evidence for three universal psychological needs for *autonomy*, *competence* and *relatedness* (Ryan and Deci, 2001; Ryan and Sapp (2007)). Related to this, other studies show that individuals whose life goals are more focused on wealth, image and fame than on relationship, personal growth and community evidence less self-esteem, self-actualisation and life satisfaction (Kasser 2003, 2011). More materialistic individuals are most likely to be dissatisfied with life, lack vitality, and to suffer from anxiety, depression and addiction problems. Kasser (2011) concludes that where growth of consumption is a key goal of a nation universal psychological needs are undermined. Indeed this syndrome becomes self-reinforcing as such people turn to money and possessions as a way of coping with distress.

Another contender is the capability approach advocated in different forms by Amartya Sen (1985) and Martha Nussbaum (2000, 2006). Sen's version suffers from a fundamental problem: it provides no means for identifying *basic* functionings or capabilities common to a group of people let alone to all people. Sen famously rejects the search for, and lists of, universal valued functionings. In contrast Martha Nussbaum has argued for universal 'human functional capabilities', derived initially from neo-Aristotelian reasoning subsequently replaced with a more Rawlsian idea of an emerging 'overlapping consensus' (Nussbaum 1993, 2000). It is notable that more recently she relies ultimately on the language of 'need' (Nussbaum 2006; Gough 2015).

Table 1 demonstrates the close agreement on core human universals between these three theoretical approaches (Gough 2014). It is important to note that none of these need theories embody any hierarchy of needs, as proposed by Maslow (1954).

Table 1. Core universal human needs in three theories

Theory				
Doyal and Gough 1991	Basic needs	<i>Participation</i>	<i>Health</i>	<i>Autonomy</i>
Nussbaum 2000	Central human functional capabilities	<i>Affiliation</i>	<i>Bodily integrity</i>	<i>Practical reason</i>
Ryan and Deci 2000, 2001	Psychological needs	<i>Relatedness/belonging</i>		<i>Autonomy; competence</i>

Universal human needs have (at least) five theoretical features that aid us in identifying 'sustainable wellbeing'.

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4 First, human needs are *objective*. The truth of the claim that a person needs clean water or a
5 modicum of security in childhood depends on the objective physiological and psychological
6 requirements of human beings and the nature of the satisfier, including its capacity to
7 contribute to the health and autonomy of the person. In contrast, the truth of the claim that
8 a person prefers Bowie to the Beatles depends on the nature of the person's beliefs about
9 and attitudes towards the objects. Put another way, statements about wants are intentional,
10 whereas statements of need are 'extentional': their truth depends on 'the way the world is'
11 and not 'the workings of my mind' (Wiggins, 1987).
12

13
14 Second, human needs are *plural*; they cannot be added up and summarised in a single unit
15 of account. In addition to the basic needs for health and autonomy, we identify a list of
16 universal 'intermediate needs': water and nutrition, shelter and energy, a non-threatening
17 environment and work practices, significant primary relationships, security in childhood,
18 physical and economic security, education and health care. In a wide-ranging study Alkire
19 (2002 ch.2) surveys over 30 lists of 'dimensions of human fulfilment' and again
20 demonstrates a broad overlap of components. It is notable that all such lists include not
21 only material goods but psychological goods, activities and relationships.
22

23
24 Third, needs are *non-substitutable*: one domain of need-satisfaction or objective wellbeing
25 cannot be traded off against another. More education is of no immediate help to someone
26 who is ill through lack of vitamin C. Thus certain *packages* of need satisfiers are necessary
27 for the avoidance of harm. This is quite different from consumer preferences in economic
28 theory where substitutability is the default assumption: given a bundle of two goods it is
29 always possible – by reducing the amount of one fractionally and increasing the amount of
30 the other fractionally – to define a second bundle between which a consumer is 'indifferent'
31 (O'Neill, 2011).
32

33
34 Fourth, needs are *satiabile*. It can be shown that the amount of intermediate needs required
35 to achieve a given level of health and autonomy diminishes as their quantity increases,
36 eventually plateauing (Dietz et al 2009; Jorgenson 2014). Thus the contribution of calories,
37 dwelling space, even levels of childhood security, to basic needs can be satiated. In the case
38 of the basic needs of health and autonomy, thresholds can be conceived where serious harm
39 is avoided such that minimally acceptable levels of social participation can take place. The
40 distributive principle entailed by human need theory is *sufficiency*: to bring all individuals up
41 to such a threshold. It says nothing at this stage about inequalities above this level, but there
42 are other reasons for justifying much more moderate inequality (Brandstedt 2013). Needs
43 come with a built in distributive principle.
44

45
46 Fifth, needs are *cross-generational*. This is of great importance since global warming will
47 progressively impose dilemmas of intergenerational equity. We can assert with much
48 confidence that the *basic* needs of future generations of humans will be the same as those
49 of present humans. To avoid serious harm and to participate and act within future human
50 societies people will require the same logical preconditions: not just survival, but health and
51 autonomy. Future people will have needs for affiliation, cognitive and emotional expression,
52 understanding and critical thought. The epistemology of reasoning about needs remains
53 extentional, not intentional, and thus avoids the indeterminacy of reasoning about future
54 preferences. Until the genetic make-up of *Homo sapiens* changes significantly, our
55 successors will need a specific amount of the full range of intermediate needs.
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Together, this amounts to a remarkable – and pretty obvious – degree of knowledge about the constituents of future peoples' wellbeing. Compared to the indeterminacy of future generations' preferences or happiness (or of Sen's capabilities), a theory of need provides some firm foundations on which to build sustainability targets for public policy. The abilities to provide these components of objective welfare should be 'passed down' to future generations. In O'Neill's (2011, p. 33) words: 'Each generation needs to pass down the conditions for livelihood and good health, for social affiliation, for the development of capacities for practical reasoning, for engaging with the wider natural world and so on'.

Finally, human needs have a sound alternative ethical grounding that preferences do not: they come along with claims of justice and equity in tow.⁴ Claims of need make moral demands on agents that preferences do not (O'Neill 2011). Universal needs imply ethical obligations on individuals and claims of justice - universal rights and obligations - on social institutions. An important corollary of the moral import of human need is that meeting needs should be given priority over meeting wants, if the two conflict or if resources are scarce. Human needs, present and future, trump present (and future) consumer preferences.⁵

Necessities and need satisfiers

When we turn to *need satisfiers* - the goods, services, activities and relationships that contribute to need satisfaction in any particular context – things are quite different. The needs for food and shelter apply to all peoples, but there are a large variety of cuisines and forms of dwelling that can meet any given specification of nutrition and protection from the elements. It is essential to draw a sharp distinction between universal needs and specific satisfiers. Without it, need theory could justly be accused of being paternalist, intrusive and insensitive to context and culture.

How then can we identify necessities? In particular, since this article is focused on affluent societies – unequal, highly commodified and with a strong ideology of consumer sovereignty – how can a consensus ever be achieved around such contentious questions? My answer is to set out a broad *methodology* for identifying need satisfiers in particular contexts that is collective and consensual. The central argument is that identifying satisfiers must draw on two *forms of knowledge*: the codified knowledge of experts and the experientially grounded knowledge of ordinary people. The process to combine the two we call the 'dual strategy' (Doyal and Gough 1991, ch.14).

The *codified* knowledge of the natural and social sciences enable us to determine the composition of many need satisfiers. It is embodied in the knowledge of practical experts,

⁴ 'For standard economic analysis everything is a preference: the epicure's wish for a little more seasoning, the starving child's wish for a little water, the collector's wish for one more painting, and the homeless person's wish for privacy and warmth, all are preferences' (Shue, 1993, p. 55).

⁵ This can be stated formally, following Dobson (1998), who identifies four objects of concern for policy:

Wp: present-generation human wants

Np: present-generation human needs

Wf: future-generation human wants

Nf: future-generation human needs

The implied priority rule for the need theory set out above is:

$$Np = Nf > Wp/Wf$$

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whether in health and medicine, engineering or biology, technology or policy science, and this knowledge is commonly used to help identify 'what people need': the components of a healthy diet, the education needs of children, the damage to our environment from pollutants and so on. Experts have a vital role to play in identifying need satisfiers.

Experientially grounded or practical knowledge is the entire range of understandings and accumulated problem solving of people in their everyday lives and contexts. This too must contribute to deciding what objects, activities and relationships are necessary or essential for wellbeing in any given context. Policies that ignore this input can be irrelevant, inefficient, stupid or oppressive; for example, building new housing estates far from employment, shops or social activities without public transport and concentrating poor families within them.

Clearly there is a dilemma here. Lauding the indispensable knowledge and power of science, technology, professions and experts runs the risks of uniformity, inflexibility, paternalism, disempowerment and domination, threatening the cultural integrity of groups and the autonomy of individuals. On the other hand, worthy initiatives to utilise experiential knowledge, to engage and empower citizens, carry the danger that sectional and short-term interests will threaten the identification of longer-term generalisable interests, especially when coupled with power differences in a context of inequality and media concentration.

Thus we conclude that any rational and effective attempt to resolve disputes over need satisfiers 'must bring to bear *both* the codified knowledge of experts and the experiential knowledge of those whose basic needs and daily life world are under consideration. It requires a *dual strategy of social policy formation* which values compromise, provided that it does not extend to the general character of basic human needs and rights' (Doyal and Gough 1991:141).⁶ This is admittedly an ideal form of negotiation. In the real world interests, institutions and power imbalances will thwart it. In implementing the dual strategy one can only insist that the debate is as informed, participatory and free of vested interests as is possible.

Defining sustainable necessities in practice

The urgent need today is to identify consumption bundles that a) meet needs for decent living and b) are sustainable over time; in other words to define the upper and lower bounds of the consumption corridor. I look at each in turn.

Bradshaw et al (2008) first pioneered a methodology to define a minimum acceptable standard of living, including 'more than just, food, clothes and shelter. It is about having what you need in order to have the opportunities and choices necessary to participate in society'. The methodology used is 'consensual discussions' among citizens informed at successive stages by expert input. The dual strategy method is now being practically applied to estimate 'decent living' minimum standards across a range of EU member states (Storms, Bérénice, 2013). There are now accepted and proven methods of identifying necessities and distinguishing them from 'luxuries': an essential starting point if policies to pursue both human wellbeing and sustainability are to be developed.⁷

⁶ We use the work of Habermas and Rawls to provide guidance on this process ((Habermas, 1987), Rawls (1971), Doyal and Gough 1991, Chapter 7)

⁷ The account that follows concerns rich OECD countries, but the method has been applied elsewhere. There are studies using a related 'socially perceived necessities' approach in developing countries,

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4 For example, the 2014 MIS (Minimum Income Standard) study in the UK involved 12 focus
5 groups in which members of the public from a range of social backgrounds were tasked with
6 producing lists of items that households would need in order to reach 'an acceptable
7 minimum standard of living'. These different groups involved pensioners, working-age adults
8 without children and parents with children. They interacted with experts, including a
9 nutritionist who helped to construct adequate diets and a heating engineer who specified
10 home energy requirements (Davis et al, 2014).
11

12
13 This exercise has resulted in an agreed minimum consumption bundle that in some respects
14 differs radically from the norm. The UK forums decided that private cars are luxuries and not
15 necessary for a decent standard of living – citizens could use public transport plus taxis
16 instead. The parents group, recognizing that it was increasingly likely that children in social
17 housing would be expected to share bedrooms, concluded that this was not a standard that
18 they agreed with and felt that in general the minimum should include a bedroom for each
19 child of school age. Necessary food expenditures were agreed to be higher than present
20 averages due to the consumption of more fresh fruit and vegetables.
21

22
23 The implication of this research is that citizens can agree on a list of necessities at any point
24 in time. The list will change over time in reaction to socio-technical shifts. In 2012, the group
25 discussing the needs of households with children included a cheap second-hand car as a
26 necessity for the first time, due to the decline of public transport. By 2014 all groups,
27 including the pensioners group, regarded a computer, internet access and a cheap mobile
28 phone subscription as a necessity. But, these apart, the definition of necessities has changed
29 relatively slowly: the UK 2014 budgets were remarkably similar to the 2008 budgets, despite
30 the financial crisis and recession in the meantime, reflecting a consistency in the ways that
31 members of the public interpreted the rationales of necessity (Davis et al 2015).
32

33
34 If the *entire* population were living on the 'decent life budget' then emissions would be
35 lower: 37% lower than actual consumption-based UK emissions in 2004 according to
36 research by Druckman and Jackson (2010) – Figure 2. Almost every category of consumption
37 would deliver lower emissions except for food. Reductions are particularly noticeable in
38 transport, household energy, restaurants and hotels, and miscellaneous household goods
39 and services. In this hypothetical scenario, total UK consumption emissions would fall from
40 26tCO₂e per average household to 16tonnes.
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50 such as South Africa (Wright and Noble 2013), Vietnam (Pro Poor Centre 2007) and Bangladesh
51 (Ahmed 2007). The South African study found that deprived townships arrived at similar lists to the
52 white population. For example under protective housing they list as necessities: mains electricity, a
53 house protective against weather warm, fridge, separate bedrooms for adults and children, a flush
54 toilet. Poorer countries will arrive at a less demanding list of necessities, but there is evidence that
55 across the world the list of necessities is converging. For example in housing again: a minimum floor
56 space per person, solid construction, continuous electricity supply. 90% of the world's adult
57 population now has access to a basic mobile phone (Rao and Min, forthcoming).
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Figure 2. GHG per household per annum.

Source: Druckman and Jackson (2010), Fig.2

This is a significant reduction, but the problem is that this still equals 7.3 tonnes per person – well above the 2050 goal of 2 tonnes per person. In the UK and other rich countries, the emissions of the minimum consumption bundle *exceed* those of the maximum sustainable consumption bundle – and by more than three times! Studies in other countries replicate this finding: in Finland, people receiving minimum income benefits exceed ecologically sustainable lifestyles by a wide margin (Hirvilammi et al 2013). This is to be expected and backs up the Swedish modelling in Figure 1: C2 policies complement but don't replace C1 policies. To make consumption sustainable within existing socio-technical structures would deprive citizens of a vast range of goods and services that they have agreed are necessary for effective participation in modern life.

But can the dual strategy be applied to pursue a different goal – to arrive at a consensual measure of more sustainable maximum levels of consumption? Returning to four of the UK focus groups and using the same methodology, one study explicitly asked them to consider their carbon footprint and agree on what might be 'publicly acceptable' (Druckman et al 2011). The results were discouraging. There was some support for reducing heating energy by wearing more clothes at home, maintaining separate temperature zones and switching to energy-saving appliances, and some interest in cycling more and using public transport if it was more convenient and time-saving. There was very little interest in reducing consumption of red meat or eating only seasonal vegetables. The research found that people had got used to having a high degree of choice and did not want to be told what and what not to consume (Druckman et al 2011). This is just one small study in one country, but it is not optimistic that within contemporary society consumption can be consensually recomposed to any significant extent.

More transformative approaches will clearly be needed. One approach is to use Max-Neef's (1989) framework of human scale development (HSD), developed to enable small communities in Latin America and elsewhere to devise their own routes to a more people-centred idea of development. It involves longer participatory workshops that can question goals, behaviours, satisfiers and infrastructures more radically and over longer time spans.

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3 The HSD framework considers need satisfiers to be systematically related and
4 interdependent and then searches for 'synergic satisfiers' that simultaneously meet
5 different kinds of needs. To identify these entails a 'deep learning journey' going beyond
6 focus groups to longer term and community based projects (Guillen-Royo 2016). This can
7 best take place within communities already inspired by sustainability goals, such as eco-
8 villages and transition towns. But two problems remain. First, issues of equity and
9 sustainability are rarely given equal consideration: HSD initiatives won't always pay
10 attention to environmental consequences, and sustainability initiatives won't always pay
11 attention to distributional and poverty issues. Second, there is a consistent problem in
12 scaling up such initiatives in the face of overwhelming power imbalances and system lock-in.
13 It is time to turn to these.
14

15 16 17 **Barriers to sustainable consumption in practice**

18
19 Theories of consumption vary on a wide spectrum from those privileging consumers as
20 agents to those privileging corporate power and structural path dependency.⁸ This section
21 discusses only the last two obstacles: an asymmetry in power and knowledge between
22 corporations and consumers, and 'lock-in' to path-dependent structures. In selecting these
23 for discussion I am making the assumption that neither orthodox consumer theory nor
24 behavioural economic theory adequately address the determinants of consumer
25 preferences. Consequently, the respective policy approaches condoned by these theories -
26 providing better information and 'nudging' - will not be sufficient (Thaler and Sunstein,
27 2008), Stoker 2009, Hodgson 2013). Other contributors to this collection provide a wider
28 perspective on the role of market actors – corporations, consumers and new market forms -
29 in fostering lower-carbon, more sustainable consumption (eg. Prabhu 2017; Frenken 2017).
30
31

32 The corporate framework within which consumers operate and 'choose' is heavily biased to
33 create novel consumer goods and services and to encourage absolute increases in
34 consumption (Seyfang and Paavola, 2008). Advertising and marketing – the 'engineering of
35 consent' (Bernays, 1955) - is of obvious importance in shaping consumer behavior, not
36 always to the benefit of consumers.⁹ But these more obvious agency-based examples of
37 corporate power rest on a less visible structural power, both the ability to determine
38 investment and employment, and the discursive power of ideas such as consumer
39 sovereignty and economic growth (Lindblom 1977; Gough 2000, ch.4). For example, Fuchs et
40 al (2016) describe in some detail how such hidden power has delivered abundant cheap
41 meat in modern society and thwarted attempts to regulate and limit it, despite external
42 costs in health and emissions.
43
44

45 Systems of provision lock households into patterns of consumption, as when rural and
46 suburban residents have no viable alternatives to driving the car. 'Lock-in' refers to
47 consumption driven by structural and institutional features of the society largely outside the
48 scope of individual choice. For example, many car journeys – to commute, shop, drive
49 children to school etc – might be caused by the spatial and social contexts within which
50 people live and to which they must necessarily adapt. The needs framework can be adapted
51
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53 ⁸ This contrast echoes Duesenberry's famous aphorism: "Economics is all about how people make
54 choices; sociology is all about how they don't have any choices to make" (Duesenberry, 1960, p. 233)

55 ⁹ Two examples: one half of poor UK households persuaded to switch energy suppliers following
56 doorstep sales found themselves with a worse energy deal than before (Hills, 2012). The vast majority
57 of adults in Great Britain (82%) have regretted a purchase in the past year, amounting to 2– 10% of
58 total consumer spending (Skelton and Allwood 2017).
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to provide some insights here. Need satisfiers can be viewed as a hierarchy, as for example the need for use of a car (Mattioli 2016) – Table 2.

Table 2: From basic needs to specific satisfiers

<i>Basic needs</i>	Social participation, health and autonomy			
<i>Intermediate needs</i>	Income	Nutrition	Healthcare	Relationships
<i>Satisfier level 1</i>	Employment	Shopping	Medical visits	Social visits
<i>Satisfier level 2</i>	Travel			
<i>Satisfier level 3</i>	Car			

Conceiving demand in this way helps analyse the nature of the lock-in. For example, is use of a car a necessary means to travel (level 3)? Does access to work and shopping require travel – to what extent could the internet replace work, shopping and social interaction (level 2)? To what extent does demand for travel reflect the spatial distribution of physical infrastructure (level 1)? The hierarchy demonstrates that in defining what is needed and sustainable attention must be paid to ‘lock-in’ as well as ‘luxury’ (Jackson and Papathanasopoulou, 2008).

These two system-level barriers to sustainable consumption – corporate shaping of demand and inherited systems of provision - interact. Consumption actions result in unintended consequences that then shape future collective arrangements and future individual consumption actions. To investigate this takes us into social, structural and complexity theory that is beyond the scope of this paper. Giddens (1984) refers to this interplay between agency and structure as ‘structuration’. Individual actions result, via a composition effect, in aggregate outcomes that have little relationship with the original intentions of individual actors. Human history is ‘created by intentional activities but in a non-intentional way’ (Mattioli 2016).

This approach sheds light on some issues of justice in a climate-constrained world. Car use in a car-dependent setting may be essential for social participation and thus its denial or removal would constitute an unjust harm. Yet if this injustice is overcome at the expense of still higher transport emissions, it will entail further degradation of the natural environment and an unjust imposition on other peoples and on future generations.

This is not to argue that there are no springs of change. Consumption practices are affected by longer term shifts in tastes and by socio-technical innovations. For example, consumer demand for private transport is falling among young adults across the developed world for a variety of reasons and car companies have not been able to halt that trend (Kuhnimoff et al, 2012). Similarly the entry of new market players such as ZipCar and Uber may result in reductions of car ownership and more efficient use of existing resources (Frenken 2017).

Income inequality and equity dilemmas

Consumption demand in market systems is shaped not only by preferences but also by the level and distribution of incomes. Two further problems confronted en route to recomposing consumption are rising inequality and dilemmas of redistribution.

Inequality of incomes has risen since around 1980 across the OECD, though at different rates (Piketty 2014). Argument and evidence shows that this has exacerbated status competition

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in society, especially over 'positional goods'. Coupled with corporate power it enhances competitive pressures to consume more and more (Frank 2007; Wilkinson and Pickett 2010; Pickett et al., 2014). Standards are inherently relative and involve comparisons with others. When the income distribution becomes stretched, more of the population, even the middle class, become aware they are falling behind the rich. In the neoliberal period since around 1980 accelerating inequality has, notably in the Anglosphere, driven up household debt and to compensate for lower wage growth, and halted the previous decline in average hours of work. Both debt and work hours add further to the link between inequality and unsustainability (Stiglitz 2013; Bowles and Park 2005).

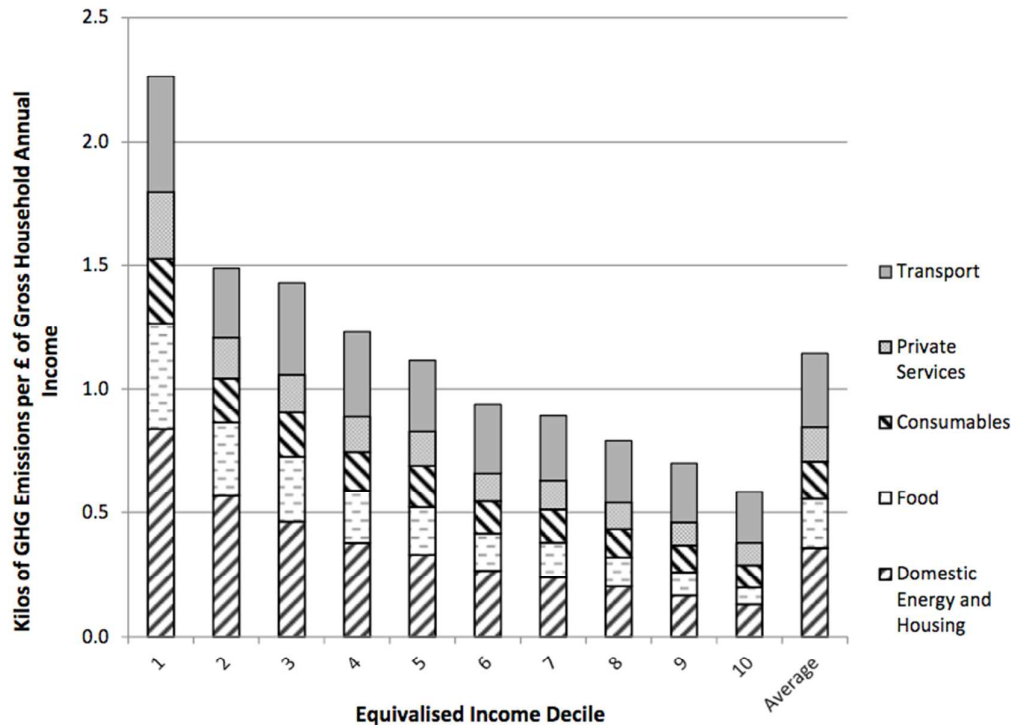


Figure 3 Per capita GHG emissions per £ of income, by income decile and sector, UK 2006
Source: Gough et al 2011, Table 8

Inequality can also generate equity dilemmas in implementing carbon mitigation programmes. Though consumption emissions rise with household income, they do so at a slower rate. Lower income households face noticeably higher emissions per £ spent – Figure 3. Thus any rise in carbon prices, when generalized throughout the economy, will impact on lower income households more. The degree of this regressive impact varies according to the type of consumption. Expenditures on, and emissions from, domestic energy and food take a proportionately higher share of incomes lower down the income scale than spending on, and emissions from, transport, consumer goods and personal services (Gough et al 2011). As a result, carbon mitigation programmes can increase poverty and inequality.¹⁰

¹⁰ For example, the UK imposes a suite of obligations on energy companies to aid poorer and less well-housed groups improve insulation, renew boilers etc. Yet because these improvements are paid

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4 This follows because necessities have in general a higher than average carbon footprint –
5 see Appendix. This poses a potential tension between securing emission reductions and
6 ensuring an equitable distribution. It suggests that simply redistributing income to low-
7 income households might, *ceteris paribus*, raise rather than lower total emissions as more
8 money is available to spend on high-emitting basic goods. This lends support to a conclusion
9 of Koch and Fritz (2014: 698) about welfare states: ‘The same mechanism that defuses the
10 socio-economic inequalities inherent in capitalist development ensures the inclusion of an
11 increasing number of people in environmentally problematic production and consumption
12 processes’.

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15 Thus carbon pricing is always inequitable; yet redistributing incomes will, all other things
16 being equal, increase emissions! There appears to be a fundamental tension between
17 meeting basic needs and cutting emissions.

18
19 However much depends on where the redistributed income and associated emissions comes
20 from – if it is due to a cap on excessive emissions by the affluent this could more than offset
21 the higher emissions of low-income households on, for example, heating and food.
22 Moreover, comparative research finds that carbon intensities for housing and domestic
23 energy are much lower in Norway and Sweden than other OECD countries, reflecting the
24 extensive presence of district heating, biomass, hydro-electricity and better insulation in the
25 two Nordic countries (Kerkhof et al. 2009). In which case taxing energy would not
26 discriminate against poorer households. Different forms of technology and infrastructure
27 can thus profoundly improve the eco-efficiency of specific sectors and thus the potential
28 equity-sustainability trade-off pictured in the Appendix Table A1. Nevertheless, we have
29 demonstrated that there are potential trade-offs between sustainability and equity when
30 reforming the sphere of consumption.

31 32 33 34 State policies for recomposing consumption

35
36 The conclusion thus far is that changing consumer preferences will be constrained by
37 corporate power, system lock-in, and the interaction between the two. Growing inequality
38 also makes recomposing consumption more difficult and creates dilemmas in redistributing
39 incomes in high-carbon economies. The upshot of the above is that recomposing
40 consumption will require in addition some hefty top-down state interventions. Many will be
41 required to influence the eco-efficiency of production (the C1 goal).¹¹ But a range of novel
42 C2 interventions will also be needed to recompose consumption in a fair way: a suite of
43 ‘eco-social policies’ that simultaneously and explicitly pursue both equity/justice and
44 sustainability/ sufficiency goals. I conclude with some suggestions here.

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49 for out of higher energy bills they bear more heavily on lower income households and paradoxically
50 increase rather than reduce ‘fuel poverty’ (Hills, 2012).

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¹¹ Four policy pillars for GHG mitigation can be distinguished: Carbon pricing, Strategic carbon-saving investment, Public regulation, and Behaviour change and public engagement (cf Grubb et al 2014). All of these can contribute to the achievement of C1 eco-efficiency policies. But some can also influence C2, the composition of consumption. For example, the minimum Consumption Scenario cited above assumes that UK housing is insulated to a higher quality than at present, which will require an ambitious programme of retrofitting entailing public guidance, regulation, loans and subsidy. I do not consider other C1 interventions in this paper.

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Taxing high-carbon luxuries: smart VAT.

The economist Robert Frank (2011) (2007) has long argued for a progressive consumption tax, on sustainability as well as equity grounds. A major justification is that it would curb the rate of expansion in mass wants and desires. However, it may not be progressive, since it would benefit high-saving, richer households. But in all OECD countries except the US there exists an explicit tax on consumption - Value-Added Tax (VAT) - that raises about a fifth of all tax revenues and is a major funder of social programmes. The VAT rate in most EU countries today varies between 20% and 25%, but in all countries there are exemptions and lower rates applied to certain goods and services. These usually include basic foodstuffs but vary greatly across countries, following pressures from particular industries and lobby groups.¹²

The argument for a 'smart VAT' is to introduce deliberate variations in the rate, higher to discourage bad consumption and lower to encourage desirable consumption. The proposal has mainly been advocated on health and wellbeing grounds, to improve healthy eating and discourage obesity (Fell 2016). But it could also be amended to take account of sustainability. Thus high-GHG goods that harmed wellbeing would attract the highest VAT rates, while low-carbon goods that improve wellbeing would be taxed at lower or even negative rates (amounting to a subsidy).

This entails an assault on common notions of consumer sovereignty and would meet corporate, retail and consumer opposition discussed above. To secure legitimacy and public support, Fell realises that forms of citizenship engagement along dual strategy lines would be necessary. To decide what goods are virtuous and what harmful he proposes regular deliberative dialogue in focus groups informed by environmental and social experts. This exercise could draw on the MIS studies and equivalent exercises such as the Northern Ireland 'healthy food basket'. These decision would then be fed up to a second stage of public decision-making to decide on the different VAT rates. Fell concedes that this stage would likely require economic expertise, such as the Office of Budgetary Responsibility in the UK, but to be effective smart VAT rates should vary widely between perhaps +25% and -20%. To publicise what is happening they should be displayed on all goods in shops and should be monitored and adjusted as necessary.

There is no reason why the emissions footprint of consumption practices should not be integrated into this process alongside health and other basic need goals. Smart VAT provides a broad framework within which specific proposals to tax high carbon non-essentials could fit, such as a frequent flyer levy or a global tax on business-class flight tickets (Chancel and Piketty 2014). It provides a workable method to scale up a dual strategy for sustainable consumption.

Social tariffs

Water, electricity and gas utilities are, up to certain level of consumption, basic but high carbon necessities. Direct regulation of utility prices would provide a simple method of securing both greater sustainability and equity. This would require energy and water companies to operate a 'rising block tariff', with lower tariffs for initial units of electricity, gas or water consumed, and higher tariffs for successive units. At present energy tariffs work in the opposite way, mirroring the cost structure of utilities faced with large fixed costs to maintain the network. To reverse this would recognize the basic need component of the first

¹² The UK, almost alone, charges a much lower rate (5%) on residential energy.

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3 block of household energy and the progressive choice element in successive units.¹³ The
4 total average price of domestic energy would continue to rise over time, as part of the
5 carbon pricing strategy, but the distribution of the burden would be skewed more to higher
6 consumption households. Related tariffs schemes have been implemented in some
7 countries in southern Europe (Schaffrin, 2014). It would be difficult to administer in the
8 privatised energy system of most countries today and is opposed by energy suppliers.
9

10 **Widening social consumption.**

11 Turning to the expenditure side of fiscal policy, health, education and social care are further
12 necessities which for other reasons are usually supplied free or at low cost to all citizens via
13 collective public funding. There are several reasons for raising the share of *state social*
14 consumption as part of an eco-social strategy. First, tax-financed social consumption such as
15 health services, social care and education is inherently redistributive: allocation according to
16 need, risk or citizenship, not market demand, automatically serves redistributive social goals
17 – even if the tax system is neutral rather than progressive. Second, research shows that this
18 saves carbon. For example, the US health care system directly accounts for 8% of emissions
19 in the US, compared with 3% of UK emissions directly stemming from the NHS. This is due
20 both to the greater macro-efficiency and lower expenditure shares of health in the UK, but
21 also to lower emissions per £ or \$ spent, due to better allocation of resources and
22 procurement practices and to explicit carbon-saving programmes (Chung and Meltzer,
23 2009).
24
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26 **Rationing: Personal carbon allowances.**

27 The most direct and radical way to simultaneously recompose consumption in a sustainable
28 and equitable direction would be ‘downstream’ rationing of carbon between households. A
29 country’s total GHG emissions would be capped (decreasing year by year) and this amount
30 divided into equal annual allowances for each adult resident, with variable rates for children
31 (Environmental Audit Committee, 2008; Fawcett and Parag, 2010). In effect, a dual
32 accounting standard and currency is developed: energy, goods and services would have both
33 a money price and a carbon price. Some propose a trading element whereby those who emit
34 less carbon than the average could sell their surplus allowances and gain, while higher
35 emitters would pay a market price for their excess. Advocates claim that a PCAT scheme
36 covering domestic energy, road fuel and air travel would curb consumption in a progressive
37 way. However, PCAT does not avoid all issues of fairness; for example, those living in
38 inefficient or underutilised housing, dependent on car travel, or with special needs would
39 face difficulties. Too many exceptions to the standard allowance could undermine the
40 scheme, but too few would result in rough justice, which could undermine public support.
41 Integration with upstream cap and trade systems, eg the ETS, would raise problems. There
42 are also several practical as well as political issues to be faced (Fawcett and Parag, 2010).
43
44
45

46 These are some ways in which democratic states can begin to shift contemporary
47 consumption practices to both reduce emissions and pursue the equitable and just
48 satisfaction of basic human needs. In concentrating on ‘top-down’ policies I am not
49 underestimating the powerful role of local action and bottom-up perspectives (Ostrom
50 2009; Whitmarsh 2011; Jackson and Victor 2013). But states will remain central actors in the
51 Anthropocene (Duit 2014).
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56
57 ¹³ Larger households and households with children and disabled people would have higher needs.
58 Some method of taking these into account would need to be found.
59
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Conclusions

To have a hope of mitigating climate change fast enough means targeting consumption in rich countries alongside production. Yet consumer demand rarely figures in climate policy because it questions consumers' tastes and challenges some formidable corporate interests and structural obstacles. This paper makes the case for a new policy domain – to 'recompose' consumption by switching from high- to low-carbon goods and services, without necessarily cutting overall consumption expenditure. At the same time this recomposition must be fair, on grounds of justice and legitimacy, especially since cutting emissions can have regressive distributional effects.

To target both goals – sustainability and equity – in consumption we need to distinguish necessities or basic goods from luxuries or surplus goods. Theories of human need can identify universal and objective components of wellbeing applicable across time and space. Identifying need satisfiers or necessities requires a further methodology fostering a dialogue of citizens and experts. We show where these methods have been used to identify bundles of satisfiers for an acceptable minimum standard of living and then turn to examine problems in applying this method to identify a maximum sustainable consumption standard. Under present socio-technical conditions, the minimum exceeds the maximum, so demand policies must be implemented alongside eco-efficiency policies in production.

Recomposing consumption along these lines can provide guidance of what consumption items to target and what not. It will require the efforts of numerous agents, citizens, civil society, business and others. But a major role for government will endure and expand as a conduit for linking the dual strategy to political action. To ensure that emission reduction and social justice go hand in hand the paper ends by outlining a range of eco-social policies.

The *recomposition* of consumption advocated here has three advantages. First, it forms a distinct strategy for climate *mitigation* alongside green growth and improvements in emissions efficiency. Second, it relates consumption to fundamental aspects of *wellbeing*. Third, it embodies a distributional ethic and a case for *redistribution*. It could play a central role in a strategy for material demand reduction.

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Appendix

It is possible to use a different ‘consumer behavior’ method to distinguish necessities from luxuries according to the income elasticity - the ratio of the percentage change in expenditure emissions to the percentage change in household income – of different consumption items. Necessities have an income or expenditure elasticity of less than one, non-necessities or ‘luxuries’ greater than one (Baxter and Moosa, 1996). This will not necessarily agree with the social consensual method outlined in the paper, for example regarding alcohol and tobacco as necessary goods, but there is a strong overlap. Table A1 plots income elasticities against the emissions intensity of the different categories in the form of a 2x2 matrix. It is clear that the core necessities in the top right hand cell (shaded) are high emitters of carbon or other GHGs and contrast with luxuries in the cell diagonally opposite. The scale of high carbon necessities would be still greater if it also included essential transport – the data used does not permit any disaggregation of transport.

Table A1: Categories of personal consumption by necessity and emission content, UK 2009

	Low GHG < 1 tonne CO ₂ e/£000	High GHG > 1 tonne CO ₂ e/£000
<i>Necessities:</i> <i>Income elasticity</i> < 1	Alcoholic beverages/tobacco (0.7%) Communication (1.2%)	All domestic energy (electricity, gas, other fuels) (26.9%) Food (12.9%)
<i>Luxuries:</i> <i>Income elasticity</i> > 1	Clothing and footwear (2.6%) Other housing (2.3%) Furnishings (5.0%) Recreation and culture (8.7%) Restaurants and hotels (5.0%) Private health (0.5%) Private education (0.3%) Miscellaneous (4.2%)	All transport (vehicle fuels, other transport) (22.5%)

Source: Chitnis et al 2014: Tables 5, A.5

Note: The figures in brackets show the shares of total GHG footprint emissions accounted for.

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Bibliography

- Alkire, S., 2002. Valuing Freedoms: Sen's Capability Approach and Poverty Reduction. Oxford University Press.
- Allwood, JM, Ashby, MF, Gutowski, TG, Worrell, E, 2013. Material efficiency: providing material services with less material production. *Phil Trans R Soc A* 371: 20120496.
- Atkinson, A.B., 2015. Inequality. Harvard University Press, Cambridge, MA.
- Baxter, J.L., Moosa, I.A., 1996. The consumption function: A basic needs hypothesis. *Journal of Economic Behavior & Organization* 31, 85–100. doi:10.1016/S0167-2681(96)00866-9
- Bernays E, 1955. The Engineering of Consent.
- Bowles, S., Park, Y., 2005. Emulation, Inequality, and Work Hours: Was Thorsten Veblen Right? *The Economic Journal* 115, F397–F412.
- Bradshaw, J., Middleton, S., Davis, A., Oldfield, N., Smith, N., Cusworth, L., Williams, J., 2008. A minimum income standard for Britain: what people think | Joseph Rowntree Foundation. Joseph Rowntree Foundation.
- Brandstedt, E., 2013. The Construction of a Sustainable Development in Times of Climate Change. Lund University, Lund.
- Chancel L, Piketty T, 2014. Carbon and inequality: From Kyoto to Paris | VOX, CEPR's Policy Portal. Paris.
- Chitnis, M., Sorrell, S., Druckman, A., Firth, S.K., Jackson, T., 2014. Who rebounds most? Estimating direct and indirect rebound effects for different UK socioeconomic groups. *Ecological Economics* 106, 12–32. doi:10.1016/j.ecolecon.2014.07.003
- Chung, J.W., Meltzer, D.O., 2009. Estimate of the carbon footprint of the US health care sector. *JAMA* 302, 1970–1972. doi:10.1001/jama.2009.1610
- Davis A, Hirsch D, Padley M, n.d. A minimum income standard for the UK in 2014 [WWW Document]. JRF. URL <https://www.jrf.org.uk/report/minimum-income-standard-uk-2014> (accessed 10.6.15).
- Ditez T, Rosa EA, York R, 2009. Environmentally-efficient well-being. *Human Ecological Review* 16, 114–123.
- Dobson, A., 1998. Justice and the Environment. Oxford University Press, Oxford.
- Dover, Michael, 2015. Human Needs: Overview. *The Encyclopedia of Social Work*.
- Doyal, L., Gough, I., 1991. A Theory of Human Need. Palgrave Macmillan.
- Druckman, A., Jackson, T., 2010. The bare necessities: How much household carbon do we really need? *Ecological Economics* 69, 1794–1804. doi:10.1016/j.ecolecon.2010.04.018
- Druckman, Angela et al, 2011. Sustainable income standards: towards a greener minimum? Joseph Rowntree Foundation.
- Duit, A., 2014. State and Environment: The comparative study of environmental governance. MIT Press Ltd.
- Environmental Audit Committee, 2008. Personal Carbon Trading: Fifth report of 2007-08. House of Commons, London.
- Fawcett, T., Parag, Y., 2010. An introduction to personal carbon trading. *Climate Policy* 10, 329–338. doi:10.3763/cpol.2010.0649
- Fell, David, 2016. Bad Habits, Hard Choices: Using the Tax System to Make Us Healthier. The London Publishing Partnership.
- Frank R, 2007. Falling behind: how rising inequality harms the middle class. University of California Press, Berkeley CA.
- Fuchs D et al, 2016. Power: the missing element in sustainable consumption and absolute reductions research and action. *Journal of Cleaner Production* 132, 298–307.
- Giddens, A., 1984. The Constitution of Society. Policy Press, Cambridge.
- Giulio, A., & Fuchs, D., 2014. Sustainable consumption corridors: Concept, objections, and responses. *Gaia*, 23, 184-192. *Gaia* 23, 184–192.
- Gough, I., 2015. Climate change and sustainable welfare: the centrality of human needs. *Cambridge Journal of Economics* 39, 1191–1214. doi:10.1093/cje/bev039
- Gough, I., 2000. Global capital, human needs and social policies: selected essays, 1994-99. Palgrave: Macmillan, Basingstoke, UK.
- Gough, I., Abdallah, S., Johnson, V., Ryan-Collins, J., Smith, C., 2011. The distribution of total embodied greenhouse gas emissions by households in the UK, and some implications for social policy (CASE papers No. CASE/152). Centre for Analysis of Social Exclusion, London School of Economics and Political Science, London.
- Gough, Ian, 2017. Heat, Greed and Human Need: Climate change, capitalism and sustainable wellbeing. Edward Elgar Ltd.

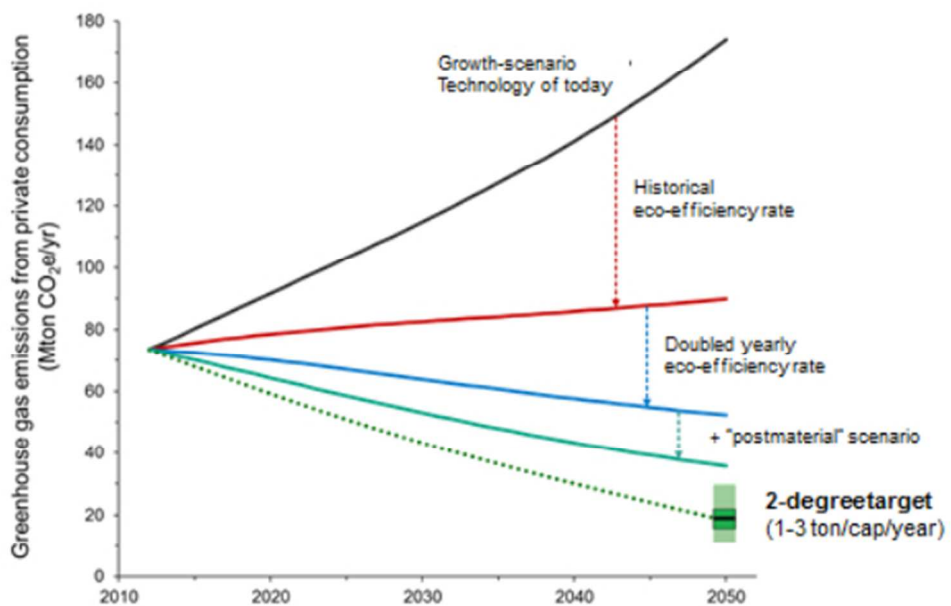
Draft: Please do not copy, cite or distribute without permission of the author

- 1
2
3 Grubb, M., Hourcade, J.-C., Neuhoff, K., 2014. Planetary Economics: Energy, climate change and the three
4 domains of sustainable development [WWW Document]. URL
5 <http://www.routledge.com/books/details/9780415518826/> (accessed 9.15.14).
- 6 Guillen-Royo M, 2016. Sustainability and wellbeing : human scale development in practice.
- 7 Habermas, J., 1987. Knowledge and Human Interests. Polity Press.
- 8 Hills, J., 2012. Getting the measure of fuel poverty: Final Report of the Fuel Poverty Review (No. CASE
9 Report 72). Centre for Analysis of Social Exclusion, The London School of Economics and Political
10 Science, London.
- 11 Hirvilammi T et al, n.d. Studying Well-being and its Environmental Impacts: A Case Study of Minimum
12 Income Receivers in Finland: Journal of Human Development and Capabilities: Vol 14, No 1.
- 13 Hodgson, G.M., 2013. From Pleasure Machines to Moral Communities: an evolutionary economics without
14 homo economicus. University Of Chicago Press, Chicago.
- 15 House of Commons Energy and Climate Change Committee, 2012. Consumption-Based Emissions
16 Reporting. House of Commons, London.
- 17 Jackson, T., Papathanasopoulou, E., 2008. Luxury or “lock-in”? An exploration of unsustainable
18 consumption in the UK: 1968 to 2000. Ecological Economics 68, 80–95.
19 doi:10.1016/j.ecolecon.2008.01.026
- 20 Jackson, Tim, Victor, Peter, 2013. Green Economy at Community Scale | Metcalf Foundation [WWW
21 Document]. URL [http://metcalfoundation.com/stories/publications/green-economy-at-community-
22 scale/](http://metcalfoundation.com/stories/publications/green-economy-at-community-scale/) (accessed 2.22.16).
- 23 Jorgenson, A.K., 2014. Economic development and the carbon intensity of human well-being. Nature Clim.
24 Change 4, 186–189.
- 25 Kasser, T., 2011. Capitalism and autonomy, in: Chirkov, V.I., Ryan, R.M., Sheldon, K.M. (Eds.), Human
26 Autonomy in Cross-Cultural Context, Cross-Cultural Advancements in Positive Psychology. Springer
27 Netherlands, Dordrecht.
- 28 Kasser, T., 2003. The High Price of Materialism. MIT Press, Cambridge, Mass.
- 29 Kerkhof, A.C., Benders, R.M.J., Moll, H.C., 2009. Determinants of variation in household CO2 emissions
30 between and within countries. Energy Policy 37, 1509–1517. doi:10.1016/j.enpol.2008.12.013
- 31 Koch, M., Fritz, M., 2014. Building the Eco-social State: Do Welfare Regimes Matter? Journal of Social
32 Policy 43, 679–703. doi:10.1017/S004727941400035X
- 33 Kuhnimhof, T., Armoogum, J., Buehler, R., Dargay, J., Denstadli, J.M., Yamamoto, T., 2012. Men Shape a
34 Downward Trend in Car Use among Young Adults—Evidence from Six Industrialized Countries.
35 Transport Reviews 32, 761–779. doi:10.1080/01441647.2012.736426
- 36 Larsson, Jorgen, 2014. Low carbon lifestyles: potential for Sweden for 2050. Presented at the PERL
37 International Conference, UNESCO, Paris.
- 38 Maslow, A., 1954. Motivation and Personality. Harper and Row Publishers, New York.
- 39 Max-Neef, M., 1989. Human scale development: An option for the future, Development Dialogue 1.
40 Uppsala.
- 41 Nässén, J., 2014. Determinants of greenhouse gas emissions from Swedish private consumption: Time-series
42 and cross-sectional analyses. Energy 66, 98–106. doi:10.1016/j.energy.2014.01.019
- 43 Nussbaum, M.C., 2000. Women and Human Development: the capabilities approach. Cambridge University
44 Press, Cambridge.
- 45 Nussbaum, M.C., 1993. Non-relative Virtues: an Aristotelian approach, in: Nussbaum, M.C., Sen, A. (Eds.),
46 The Quality of Life. Clarendon Press, Oxford, pp. 242–269.
- 47 O’Neill, J., 2011. The overshadowing of needs, in: Rauschmayer, F., Omann, I., Frühmann, J. (Eds.),
48 Sustainable Development. Routledge, London, pp. 25–43.
- 49 Ostrom, E., 1990. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge
50 University Press.
- 51 Pickett, K., Wilkinson, R., de Vogli, R., 2014. Equality, Sustainability and Wellbeing [WWW Document].
52 Crisis Observatory. URL [http://crisisobs.gr/en/2014/05/equality-sustainability-and-wellbeing/
53](http://crisisobs.gr/en/2014/05/equality-sustainability-and-wellbeing/) (accessed 10.6.15).
- 54 Piketty, T., 2014. Capital in the Twenty-First Century. Harvard University Press, Cambridge Massachusetts.
- 55 Rao N, Min J, 2017. Decent Living Standards: material prerequisites for human wellbeing. Austria.
- 56 Rawls, J., 1971. A Theory of Justice. Clarendon Press, Oxford.
- 57 Ryan, R.M., Deci, E.L., 2001. On Happiness and Human Potentials: A Review of Research on Hedonic and
58 Eudaimonic Well-Being. Annual Review of Psychology 52, 141–166.
59 doi:10.1146/annurev.psych.52.1.141
- 60 Ryan, R.M., Sapp, A.R., 2007. Basic psychological needs: a self-determination theory perspective on the
61 promotion of wellness across development and cultures, in: Gough, I., McGregor, J.A. (Eds.),

Draft: Please do not copy, cite or distribute without permission of the author

- 1
2
3 Wellbeing in Developing Countries: From Theory to Research. Cambridge University Press,
4 Cambridge.
- 5 Schaffrin, A., 2014. The new social risks and opportunities of climate change, in: Fitzpatrick, T. (Ed.),
6 International Handbook on Social Policy and the Environment. Edward Elgar.
- 7 Sen, A., 1985. Commodities and Capabilities. Elsevier Science Publishers, Oxford.
- 8 Seyfang, G., Paavola, J., 2008. Inequality and sustainable consumption: bridging the gaps. *Local*
9 *Environment* 13, 669–684. doi:10.1080/13549830802475559
- 10 Shue, H., 1993. Subsistence Emissions and Luxury Emissions. *Law & Policy* 15, 39–60. doi:10.1111/j.1467-
11 9930.1993.tb00093.x
- 12 Skelton A, Allwood J, 2017. Questioning demand: A study of regretted purchases in Great Britain.
13 *Ecological Economics* 131, 499–509.
- 14 Steinberger, J.K., Roberts, J.T., Peters, G.P., Baiocchi, G., 2012. Pathways of human development and
15 carbon emissions embodied in trade. *Nature Clim. Change* 2, 81–85.
- 16 Stern, N., 2015. *Why Are We Waiting?: The Logic, Urgency, and Promise of Tackling Climate Change*. MIT
17 Press.
- 18 Stiglitz, J., 2013. *The Price of Inequality*. Penguin.
- 19 Stoker G, 2009. *Nudge, Nudge, Think, Think: Experimenting with Ways to Change Civic Behaviour*.
20 Bloomsbury Academic.
- 21 Storms, Bérénice, T.G., 2013. Towards a common framework for developing cross- nationally comparable
22 reference budgets in Europe, *Improve Working Paper*.
- 23 Thaler, R.H., Sunstein, C.R., 2008. *Nudge: Improving decisions about Health, Wealth and Happiness*. Yale
24 University Press : [distributor] John Wiley and Sons Ltd, New Haven.
- 25 Whitmarsh, L., 2011. Social and Psychological Drivers of Energy Consumption Behaviour and Energy
26 Transitions, in: Dietz, S., Michie, J., Oughton, C. (Eds.), *The Political Economy of the Environment:
27 An Interdisciplinary Approach*. Routledge, Abingdon, pp. 213–228.
- 28 Wiggins, D., 1987. Essay 1: Claims of Need, in: *Needs, Values, Truth: Essays in the Philosophy of Value*.
29 Oxford University Press, Oxford, pp. 1–59.
- 30 Wilkinson R, Pickett K, 2009. *The Spirit Level: Why more equal societies almost always do better*. Allen
31 Lane.
- 32 WRIGHT, G., NOBLE, M., 2013. Does Widespread Lack Undermine the Socially Perceived Necessities
33 Approach to Defining Poverty? Evidence from South Africa. *Journal of Social Policy* 42, 147–165.
34 doi:10.1017/S0047279412000530
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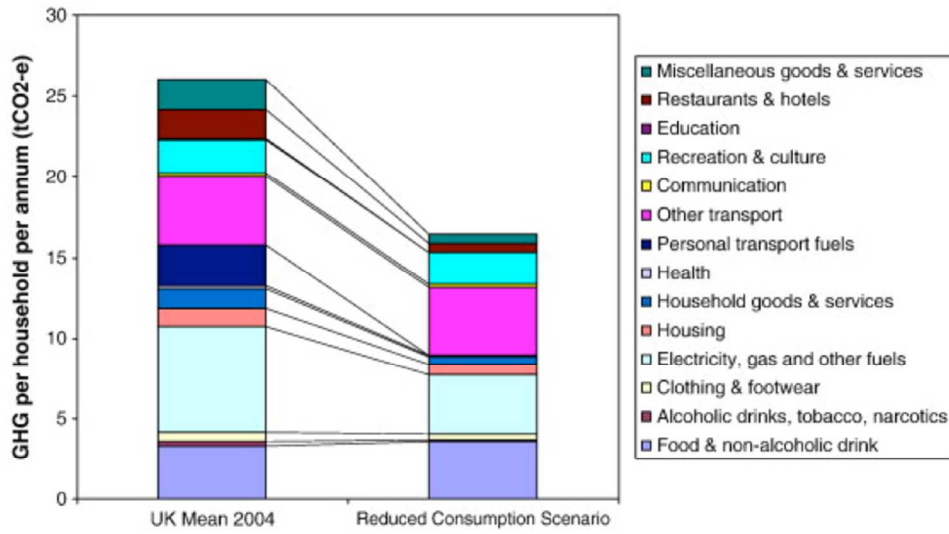
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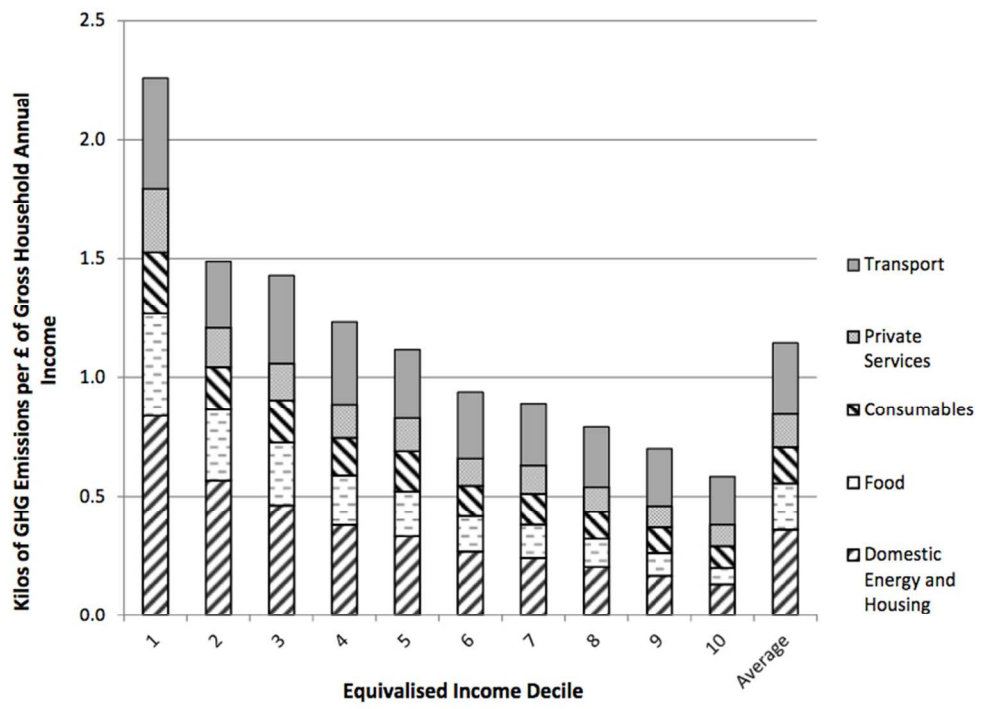
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