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Grassroots social innovation and the mobilisation of values in collaborative consumption: a conceptual model

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ABSTRACT

There is growing interest in the potential of grassroots innovations to play a role in the transition to sustainable production and consumption systems. However, the role of values has been little considered in relation to the development and diffusion of grassroots innovations. We develop a conceptual model of how citizens' values are mobilised by grassroots innovations, drawing on the value theory of Schwartz et al. (2012) and the theory of collective enactment of values of Chen et al. (2013). Using the results of a large scale survey of free reuse groups (e.g. Freecycle and Freegle), which enable collaborative forms of consumption, we apply the conceptual model to explore how participants' values are mobilised and expressed. We show that while the majority of free reuse group participants do hold significantly stronger self-transcendence (i.e. pro-social) values than the wider UK population, they also hold other values in common with that population and a minority actually place less emphasis on self-transcendence values. We conclude that diffusion of this particular grassroots innovation is unlikely to be simply value limited and that structural features may be more significant.

1. Introduction

It has long been recognised that the systems of production and consumption in industrialised consumerist societies are unsustainable (Rockstrom et al., 2009). However, many questions remain regarding how and why we are locked into these unsustainable systems, what a transition to more sustainable systems might look like and how such a transition might take place (Vergragt et al., 2014). As populations grow ever more urbanised (The World Bank, 2014) the role of cities in both the reproduction of these unsustainable systems and the transition to sustainable systems grows ever more important (e.g. Bulkeley et al., 2010; Hodson and Marvin, 2010). To address the transdisciplinary questions posed, above, the emerging field of sustainable production and consumption systems research seeks to integrate perspectives including social practices, environmental psychology, economics, governance, social movements and socio-technical transitions (Vergragt et al., 2014).

In terms of the latter, research in the field of socio-technical transitions has tended to focus on the potential of technological innovations and the market economy to drive the transition to a sustainable society (Markard et al., 2012; Smith et al., 2010). However, there is now growing interest in *civil society* as an overlooked site from which 'grassroots social innovations' with potential to contribute to this transition may emerge (Seyfang and Smith, 2007). Seyfang and Smith (2007: 585) "use the term 'grassroots innovations' to describe networks of activists and organisations generating novel bottom–up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved". To date, grassroots innovation research has focussed on the dynamics of international and national networks of social economy and civil society actors (Vergragt et al., 2014). Such networks of grassroots innovation connect societal experiments, which take the form of community-based initiatives grounded in a specific local context and explore alternative configurations of urban production and consumption systems (Heiskanen et al., 2015). Studies of grassroots innovation have explored the promises and perils of community energy systems (Hargreaves et al., 2013a), cohousing provision (Boyer, 2014), community currencies (Seyfang and Longhurst, 2013), local food production systems (Kirwan et al., 2013), and democratic

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innovation systems (Smith et al., 2014). Such research has tended to draw upon models from transitions theory originally developed to explain the dynamics of technological innovations in the market economy – e.g. niche development theory (Geels and Raven, 2006). Hence, it is unsurprising that the central role of values in grassroots innovations has been acknowledged but remains to be explicitly conceptualised. Furthermore, Seyfang and Smith (2007: 599) argue that "Grassroots initiatives exhibit their own micro-politics and can be exclusive to some and inclusive to others. Much work needs to be done regarding 'whose' alternative values are being mobilised in niches".

Here we show how societal experiments – within 'grassroots innovation' networks – respond to and mobilise the values of the citizens involved. We offer a conceptual model of these processes that spans two scales of analysis: (1) the individual scale – exploring which values are held by people participating in societal experiments; and (2) the collective scale – at which values are mobilised within societal experiments. To develop the conceptual model, we draw on theory from social psychology on basic values (Schwartz, 1992, 2006; Schwartz et al., 2012) and sociological theory on the collective enactment of values (Chen et al., 2013). We apply, test and discuss the model with a case study of the role of values in online, free reuse groups such as Freecycle. These groups have millions of members across the world (Freecycle, 2014; Freegle, 2014a) and enable people to freely and directly give unwanted items to others in their local area (rather than sending items to their local authority waste management system). In general, online free reuse groups enable a form of collaborative consumption (Botsman and Rogers, 2011) and hold potential to reduce consumption and waste in cities by extending product lifetimes.

In the next section we outline the core theoretical constructs on which our conceptual model is based. We then present the background to the research, describing how free reuse groups operate and how they have developed. This is followed by an overview of the research methodology, a large scale survey measuring the values of free reuse group participants. Finally, the survey results are presented and then discussed, highlighting the implications of our research findings for the diffusion of grassroots innovations.

2. Theory

The study of grassroots innovations (Seyfang and Smith, 2007) has emerged within the field of socio-technical and sustainability transitions (Markard et al., 2012; Smith et al., 2010). Research in this field focuses on the dynamics of societal transformation, i.e. transitions, conceptualising these dynamics as interactions between the multi-level socio-technical structures that constitute society (Geels, 2005). Much of the research around transitions is concerned with the emergence, development and diffusion of market-based technological eco-innovations with potential to contribute to the transition to a sustainable society. Furthermore, studies of grassroots innovations have tended to evaluate the applicability of aspects of transitions theory originally developed to explain the dynamics of technological and market-driven innovation (e.g. Seyfang and Longhurst, 2013). Unsurprisingly, these theories do not yet account for the value driven nature of grassroots innovations. So whilst the emerging studies of grassroots innovation have focussed on community activities driven by radical (deep green) values there has been considerable ambiguity in the role played by these values.

Values are a contested but widely and variously used concept in the social sciences. Indeed Hitlin and Piliavin (2004: 360) identify that there "are at least four concepts with which values are conflated: attitudes, traits, norms, and needs". Furthermore, values are theorised to be held and enacted at multiple scales, so we can delineate between individual (Schwartz, 1992), collective (Chen et al., 2013) and cultural values (Schwartz, 1999). Consequently, the literatures that relate to values are substantial, spanning large areas of social psychology and sociology. A full review is beyond the scope of this paper and we suggest Hitlin and Piliavin (2004) and Dietz et al. (2005) as an initial starting point for an overview of the literature. Here, we select and integrate theories of values aligned with our objective of understanding how societal experiments within grassroots innovations respond to and mobilise the values of participants. In particular we integrate theory enabling the exploration of the values of participants in a societal experiment, along with the ways in which collective activities, such as societal experiments, are shaped by and seek to shape values.

Individual values are usually theorised as mental structures, constructs with motivational implications. Schwartz and Bilsky (1987: 551) thus identify five core features of values: "According to the literature, values are (a) concepts or beliefs, (b) about desirable end states or behaviours, (c) that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance". Schwartz (1992) has developed a prominent theory of individual values, which has been applied in hundreds of research studies (Schwartz et al., 2012). This theory identifies ten basic values (see Table 1) which Schwartz argues are grounded in universal human requirements for survival and existence, including biological needs and the need for social coordination (Schwartz, 1992). The ten values are theorised to form a circular motivational continuum (see Fig. 1) where the distinction between adjacent values is blurred (Schwartz, 1992; Schwartz et al., 2012) and the proximity or distance between a given pair of values suggests the degree of compatibility or conflict between them. Furthermore, each basic value is theorised to be connected to one of four more abstract values: openness to change, conservation, self-transcendence and self-enhancement (see Fig. 1). Two scales for measuring the importance an individual places on each of the values have been developed and extensively tested; the Schwartz Value Survey (Schwartz, 1992) and the Portrait Value Questionnaire (PVQ) (Schwartz, 2006).

In order to conceptualise how societal experiments within grassroots innovations mobilise and respond to the values of participants, we draw on a sociological perspective on values and organisations. Chen et al. (2013: 857) identify organisations as one context "where values are collectively enacted or carried out". Further developing their argument that "Values may be discerned in any organization's goals, practices, and forms, including "value-free" bureaucracies and collectivist organizations with participatory practices" (Chen et al., 2013: 856). Based upon a review of organisational and sociological research Chen et al. (2013) suggest that far from being value-free, organisations in practice reflect, enact and propagate values. Drawing on this model we argue that the mobilisation of values within societal experiments can be understood in terms of the processes of reflection, enactment and propagation (Chen et al., 2013) as outlined below.

- Reflection – the outcomes, processes and structures of societal experiments reflect values. Furthermore, the values reflected and the meanings associated with these values may vary depending on the perspective adopted.
- Enactment – societal experiments provide space in which participants and activists can collectively enact both mainstream and marginalised values. Furthermore, values can be enacted both through the objectives (ends), and the collective practices (means), of societal experiments.
- Propagation – values are propagated both within societal experiments and beyond their boundaries. In both cases institutional work – i.e. the efforts of "individual and collective actors

Table 1
Conceptual definitions of 10 basic values according to their motivational goals (Schwartz et al., 2012).

Basic value	Definitions of basic values according to their motivational goals
Self-direction	Independent thought and action
Stimulation	Choosing, creating, exploring excitement, novelty, and challenge in life
Hedonism	Pleasure and sensuous gratification for oneself
Achievement	Personal success through demonstrating competence according to social standards
Power	Social status and prestige, control or dominance over people and resources
Security	Safety, harmony, and stability of society, of relationships, and of self
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms
Tradition	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provides
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact
Universalism	Understanding, appreciation, tolerance and protection for the welfare of all people and for nature

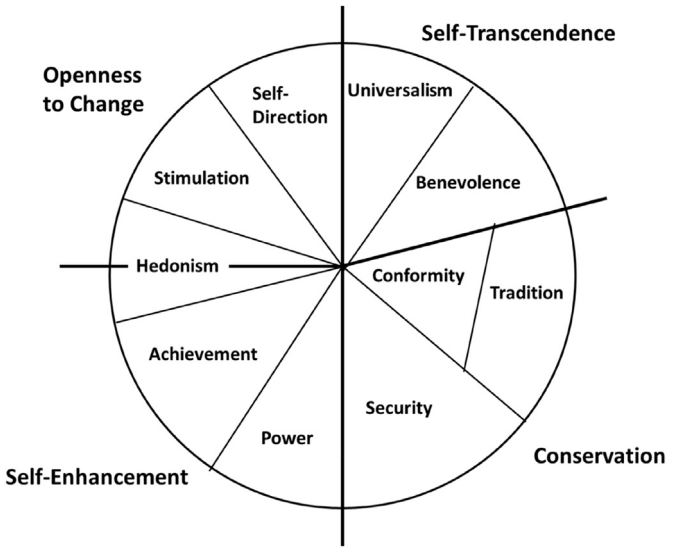

Fig. 1. Theoretical model of relations between 10 basic values (Schwartz, 1992; Schwartz et al., 2012).

aimed at creating, maintaining ... [or] disrupting institutions" (Lawrence et al., 2011: 52) – seeking to propagate novel practices also propagates associated values.

Fig. 2 illustrates our model of how societal experiments within grassroots innovations mobilise the values of the participants. We hypothesise that participants' values are mobilised within societal experiments through the processes of reflection, enactment and propagation. Furthermore, the values of activists, organisations and grassroots innovation networks are hypothesised as shaping the processes and outcomes of those participant values that are mobilised. In this paper we focus on the mobilisation of Schwartz's ten basic values, but also readily acknowledge the need for further research to explore more complex and less widely held individual, organisational and cultural values.

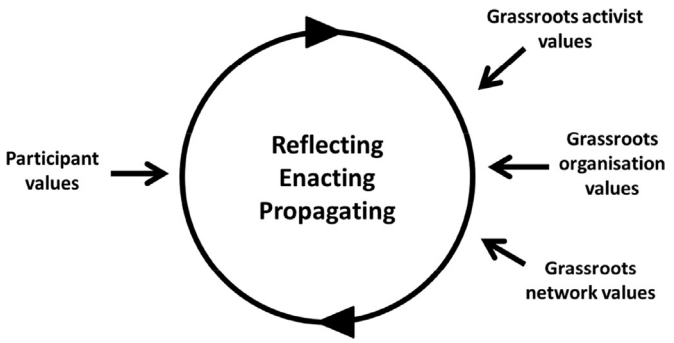

Fig. 2. The mobilisation of basic values within societal experiments.

A key premise of the study is that the rate and extent of the diffusion of grassroots innovation is in part a function of the degree of fit with the predominant distribution of basic values across the general population. This assumption underpins the related notion of institutional entrepreneurship (Battilana et al., 2009), in which change agents are conceived of as deliberately using discursive framings that resonate with existing interests, values and familiar frames, the importance of which has been emphasised elsewhere in the sustainable consumption literature in terms of institutional innovation (Dendler, 2014). Hence where a grassroots innovation appeals only to people with very strong self-transcendence values, it can be hypothesised that its potential for diffusion is likely to be limited by the relatively small number of people holding such values.

3. Material and methods

3.1. Description of online free reuse groups

Online free reuse groups are based on the premise that: "there is no such things as waste, it is just useful stuff in the wrong place" (Botsman and Rogers, 2011: 124). These groups allow citizens, and to a lesser extent organisations, the opportunity to gift items that they no longer require to others within their local area. Groups take the material form of an online message board: members can post OFFER messages – offering an item (for free) that they no longer require; and WANTED messages – requesting an item that someone else in the group might be willing to give to them. Members contact each other directly in response to a post. The members then arrange a time and location to pass on the item, often the member receiving the item will collected it from the home of the member gifting it. A diverse range of items are given away using free reuse groups including furniture, and other domestic items such as kitchenware, soft furnishings and consumer electronics (Groomes and Seyfang, 2012). Groups are open to anyone within a specified geographic area to join, limiting the distance people need to travel to collect items (Botsman and Rogers, 2011).

Each free reuse group is supported by local volunteers who facilitate group activity (e.g. removing illegal or inappropriate posts, helping members with technical issues) and promote reuse within their communities. The majority of free reuse groups and volunteers in the UK are affiliated to a grassroots network, either Freecycle – 582 groups with 3,732,966 members (Freecycle, 2014) – or Freegle – 399 groups with 1,890,823 members (Freegle, 2014a). Freegle was formed in 2009 when hundreds of volunteers concerned by the erosion of the grassroots ethos within Freecycle (Freegle, 2014a) broke away to form a new UK network (Jones,

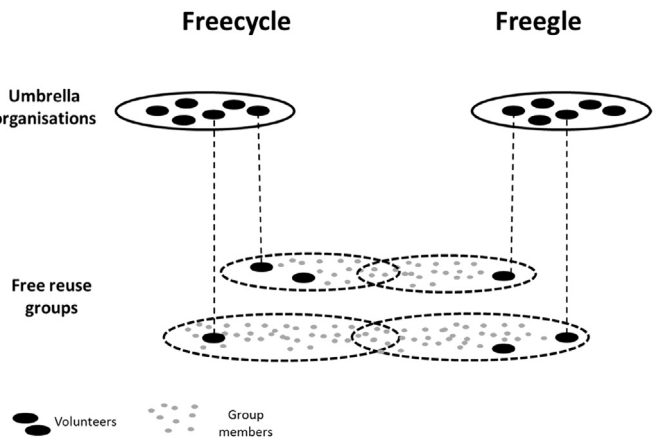

Fig. 3. The structure of the Freecycle and Freegle networks.

2009). The membership figures above are likely to overstate the participation in free reuse groups in the UK as many members are inactive or join multiple Freecycle and Freegle groups. However, what these figures do suggest is that the concept of the free reuse group has some traction beyond highly motivated environmentalists and community activists.

Here we view online free reuse groups as a grassroots innovation consisting of two socio-technical networks – Freecycle and Freegle. Each network spans a national umbrella organisation,[1] local groups, volunteers and group members (see Fig. 3). Each component of the networks can be mapped to the key grassroots innovation concepts referred to above, as follows:

- Free reuse groups – societal experiments in collaborative consumption;
- Volunteers – activists facilitating, and promoting participation in, societal experiments;
- Group members – participants in a societal experiment and members of the community impacted upon by the experiment;
- Umbrella organisations – intermediary organisations seeking to create and maintain protective space (Smith and Raven, 2012) for societal experimentation.

The nature of the activity taking place within free reuse groups defies easy categorisation, and hence it is helpful to consider how different aspects of the activity can be conceptualised from different disciplinary perspectives. First, from an economic perspective activity within free reuse groups can be viewed as a form of generalised reciprocal exchange (Willer et al., 2012) – whereby individuals give items to other members of the group on the implicit understanding that they can in the future draw on the generosity of the group. Secondly, from a consumer behaviour perspective the groups can be viewed as enabling a form of consumption that challenges the dominant practices of consumer culture. In this case, people acquiring items from the groups might be considered to be engaged in a form of ethical consumption (Carrington et al., 2010) or sustainable consumption (Young et al., 2010). In these forms of consumption individuals exercise the power of consumer choice as part of an effort to lead ethical or sustainable lifestyles and/or raise the profile of social or environmental issues. Alternatively, the groups can be viewed as enabling a form of collaborative consumption (Botsman and Rogers, 2011) – whereby the groups act as a digitally-mediated redistribution market for second-hand items. Thirdly, from a sociological perspective the groups can be viewed as providing members with the opportunity to perform social practices including the practices of reuse, gifting (Guillard and Bucchia, 2012a) and anti-consumption (Black and Cherrier, 2010). Furthermore, we suggest that the concepts of ethical citizenship (Schrader, 2007) and ecological citizenship (Seyfang, 2006) are also helpful means of framing participation within free reuse groups. Such concepts highlight that some group members are likely to consider their participation to be part of their wider ethical or ecological responsibilities as citizens.

However, with each of the perspectives above there is a risk of idealising the nature of free reuse groups and the motivations of their members (Foden, 2012). Rather, the academic literature, and material on the websites of free reuse groups, suggests that a wide range of factors motivate those participating in groups, including those listed below.

- Motivations for giving away items include seeking to: experience the pleasure associated with the act of making a gift (Nelson and Rademacher, 2009); avoid the inconveniences of other forms of waste disposal (Groomes and Seyfang, 2012; Guillard and Bucchia, 2012b); make a charitable gift to a person in need (Guillard and Bucchia, 2012b; Nelson and Rademacher, 2009); support the local community (Nelson et al., 2007); or, act on environment concerns (Foden, 2012).
- Motivations for requesting items include seeking to: save money by acquiring items for free (Nelson et al., 2007); act on environment concerns (Foden, 2012); acquire items to resell for profit or for charitable causes (Freecycle, 2009); or, through financial necessity, acquire items that could not otherwise be afforded (Foden, 2012).

Furthermore, the important role played by values in motivating participation in free reuse groups has been previously emphasised, but remains to be explored in depth. Foden (2012) argues that participation in groups allows individuals to meet a need (disposing of or acquiring an item) in a way that is consistent with their values. Whilst, Nelson et al. (2007) go further to argue that participants hold different consumption values to those engaged in mainstream consumer culture.

3.2. The online survey

We conducted an online survey measuring the values of Freegle group members. Between May and September 2014 we iteratively developed the online survey, integrating extensive feedback on the survey design from the directors of the Freegle umbrella organisation. The survey design was also informed by a pilot survey which ran during August 2014 and received 306 responses. The final version of the survey ran in October 2014 and received 3419 responses; following data cleaning 2692 responses were analysed. The central component of the survey was the Portrait Values Questionnaire (Schwartz, 2006) consisting of 21 questions which measure the emphasis placed by an individual on ten basic values (see Table 1). The survey also included a set of questions to capture basic demographic data.

The sampling approach was opportunistic or convenience-based, in which survey responses were sought from as many members of Freegle groups across the UK as possible, without stratification or random sampling. A message about the survey was posted by a Freegle director to an online message board used by approximately 500 volunteers who run Freegle groups. The

[1] The two distinct umbrella organisations play a role in governing the activities of groups, mobilising resources to support groups, and promoting networking between volunteers. We use the term socio-technical rather than social because the internet is a key feature of group functioning.

message asked the volunteers to consider sending out an email inviting members of their group to take part in the survey. The sampling approach was informed by the experience of a pilot survey and sought to work with the structures of an established online community. The pilot study was intended to be distributed to members of two online reuse sub-groups. However, Freegle volunteers became aware of the survey through their online networks and started sending out an invite to take part in the survey to additional groups. The experience highlighted the challenges of constraining the distribution of the survey to a defined set of sub-groups. Furthermore, given the sampling approach it is difficult to estimate the response rate, although it is likely to be rather low – a previous survey of free reuse groups achieved a response rate of approximately 3% (Nelson et al., 2007). In short, all we can say with a reasonable level of reliability is that the respondents are interested, self-selected members of UK online free reuse groups. We make no claims that the survey sample is representative of the wider community of Freegle members.

The Portrait Values Questionnaire (PVQ) consists of a series of questions that ask survey respondents to record how similar they are to a person portrayed in a short description (i.e. a portrait). Each portrait implicitly emphasises one of ten basic values. For instance, the portrait "He/she strongly believes that people should care for nature. Looking after the environment is important to him" emphasises the value of universalism. Responses were made on the following scale: 1 – "very much like me", 2 – "like me", 3 – "somewhat like me", 4 – "a little like me", 5 – "not like me", 6 – not like me at all". The personal values of the survey respondents are thus inferred on the basis of similarity to the values of the portraits. Each PVQ question relates to one of ten basic values and responses were summed to create a raw score for each value for each survey respondent. These raw values score were then centred as recommended by Schwartz (2006) – i.e. the mean of an individual's raw value responses is subtracted from each raw value score in turn. Hence, a negative score indicates that the value is emphasised (i.e. it is less than the mean response).

Having calculated the 10 basic value scores for each survey respondent we then conducted a cluster analysis to identify groups of survey participants with similar values. The cluster analysis was performed using the two-step clustering algorithm provided by SPSS v.21. We generated and reviewed solutions with between two and six clusters, selecting the three cluster solution based on the silhouette scores (Rousseeuw, 1987) and visual inspection of the descriptive statistics of the clusters. We then compared the distribution of value scores for each of the clusters to the distribution of value scores of the UK population as measured by the European Social Survey.[2] Statistically significant differences (CI: 99%) between the mean value scores of survey respondents and the UK population were identified using the independent samples t-test.

4. Results

The majority of respondents to the 2692 survey were female (67%) and highly educated (63% held a university degree). The ages of respondents ranged from 14 to 90 years old, however respondents tended to be aged between 40 and 66 years old (mean age – 53 years with a standard deviation of 13 years). The respondents were drawn from households with a range of incomes: 39% – household income under £25,000; 35% – between £25,000 and £49,999; and 26% – £50,000 or over. Survey respondents tended to emphasise the values of benevolence, universalism and self-direction, as shown by the negative mean value scores in Table 2. Comparison of the mean value scores of survey respondents and the general UK population shows statistically significant differences across all values (see Table 2, Fig. 4 and Supplementary Data 1). While the relationships between environmental values and demographics are complex, the demographic specificity of the Freegle group should be borne in mind when generalising to other social innovations, the demographics of which will vary.

The cluster analysis of the respondent's values identified three clusters with distinct value profiles (shown in Table 3 and Fig. 5). Furthermore, the mean value scores in each cluster differ from the scores of the UK population in different ways.

- Cluster 1 includes 1005 Freegle members (37% of survey respondents) with a strong emphasis on self-transcendence (benevolence and universalism) and openness to change values (self-direction and stimulation). Furthermore, comparison of mean value scores shows that cluster 1 members place a significantly stronger emphasis on both self-transcendence and openness to change values than members of the UK population.
- Cluster 2 includes 616 Freegle users (23% of survey respondents) with a strong emphasis on self-transcendence (benevolence and universalism) and conservation values (tradition, security and conformity). Again, comparison of mean value scores shows that cluster 2 members place a significantly stronger emphasis on both self-transcendence and conservation values than members of the UK population.
- Cluster 3 includes 1071 Freegle users (40% of survey respondents) who place a weaker emphasis, compared to the other two clusters, on self-transcendence values (benevolence and universalism) and place some emphasis on self-direction and security values. Although members of this cluster tend to emphasise self-transcendence values, they do so to a lesser degree than the UK population. Hence, and perhaps surprisingly, the composition of cluster 3 suggests that free reuse groups may have an appeal beyond to citizens beyond those possessing very strong pro-social (i.e. self-transcendence) values. It demonstrates that participation in pro-environmental grassroots innovation is not wholly dependent on pro-sociality. Hence, helping to explain how the groups are able grow beyond a small activist vanguard, reflected by the engagement (albeit fleeting or extensive) of millions of citizens in free reuse groups in the UK.

5. Discussion

5.1. Enacting values within free reuse groups

The enactment of self-transcendence values is central to the dynamics of free reuse groups, indeed the central action within the groups is that of giving an unwanted item freely to a stranger. Unsurprisingly, across all three clusters the users of Freegle tend to express the self-transcendence values of universalism and benevolence, as shown in Table 3. We suggest that free reuse groups present affordances for participants to enact not only self-transcendence values, but also the values of openness to change and conservation (as emphasised in clusters 1 and 2 respectively). Furthermore, these affordances include opportunities to engage in action that: is orientated towards social or sustainable development (self-transcendence); leads to new, novel or alternative experiences (openness to change); and/or resonates with personal and societal concepts of conservation in the broad sense

[2] The European Social Survey (ESS) conducted in 2012 included the PVQ (European Social Survey, 2012b) and was completed by representative sample of the UK population (European Social Survey, 2012a) – 2269 people (over the age of 15).

Table 2
The basic values of survey respondents and the general population.

		Survey respondents		General population	
		Mean value score	Std. deviation	Mean value score	Std. deviation
Conservation	Security	0.03	0.97	−0.51	0.76
	Conformity	0.34	1.06	0.12	0.97
	Tradition	0.11	0.91	−0.05	0.88
Self-transcendence	Benevolence	−0.94	0.73	−0.81	0.63
	Universalism	−1.02	0.71	−0.56	0.63
Openness to change	Self-Direction	−0.72	0.83	−0.40	0.76
	Stimulation	0.33	0.98	0.64	0.99
	Hedonism	0.60	0.90	0.44	0.94
Self-enhancement	Achievement	0.53	0.96	0.42	0.94
	Power	1.27	0.74	1.00	0.88

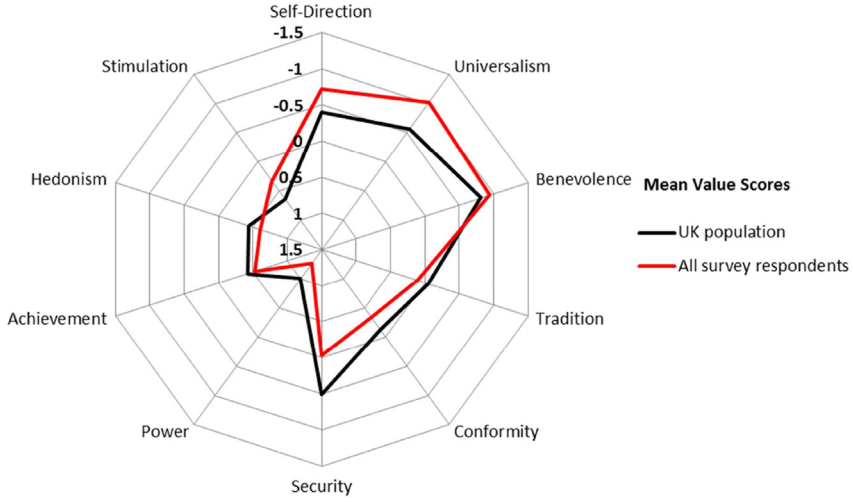

Fig. 4. Mean basic values scores – UK population and all survey respondents (negative scores indicate that the value is emphasised by members of the sample).

Table 3
The basic values of Freegle participants by cluster. Mean diff = mean value score (cluster) − mean value score (UK population). Annotated with *(g)* – statistically significant mean differences where cluster members tend to emphasise the value to a greater degree than the UK population. Annotated with *(l)* – statistically significant mean differences where cluster members tend to emphasise the value to a lesser degree than the UK population. See supplementary data 2, 3 and 4 for full details of the results of the independent samples t-tests comparing the mean value scores of cluster members and the UK population.

	(% Survey respondents)	Cluster 1 (37%)			Cluster 2 (23%)			Cluster 3 (40%)		
	Values	Mean value score	SD	Mean diff	Mean value score	SD	Mean diff	Mean value score	SD	Mean diff
Conservation	Security	0.56	0.93	1.07 *(l)*	−0.32	0.96	0.19 *(l)*	−0.27	0.78	0.24 *(l)*
	Conformity	1.15	0.86	1.04 *(l)*	−0.36	0.89	−0.48 *(g)*	−0.03	0.80	−0.15 *(g)*
	Tradition	0.52	0.86	0.57 *(l)*	−0.66	0.74	−0.61 *(g)*	0.16	0.74	0.20 *(l)*
Self-transcendence	Benevolence	−1.10	0.66	−0.29 *(g)*	−1.41	0.57	−0.60 *(g)*	−0.52	0.63	0.29 *(l)*
	Universalism	−1.39	0.57	−0.82 *(g)*	−1.35	0.53	−0.78 *(g)*	−0.49	0.57	0.07 *(l)*
Openness to change	Self-Direction	−1.20	0.71	−0.79 *(g)*	−0.53	0.83	−0.12 *(g)*	−0.39	0.73	0.01
	Stimulation	−0.29	0.86	−0.93 *(g)*	1.05	0.82	0.40 *(l)*	0.50	0.80	−0.14 *(g)*
	Hedonism	0.36	0.90	−0.08	1.31	0.74	0.87 *(l)*	0.42	0.75	−0.02
Self-enhancement	Achievement	0.56	0.94	0.14 *(l)*	1.26	0.80	0.84 *(l)*	0.08	0.77	−0.35 *(g)*
	Power	1.52	0.66	0.51 *(l)*	1.67	0.64	0.67 *(l)*	0.80	0.62	−0.20 *(g)*

(conservation). In Table 4 we provide a brief overview of some of the means by which participants can enact basic values within free reuse groups.

5.2. Responding to and mobilising the values of free reuse group participants

The flexibility for participants to enact different values within free reuse groups did not arise by serendipity. Rather free reuse activists *construct and maintain spaces* in which participants can meet their waste disposal and consumption needs in a way that is consistent with their values (Foden, 2012). The activists seek to project a value-free or value neutral image around the practice of free reuse (as shown in Fig. 6). Through such projection the free reuse group becomes, we would suggest, a boundary object (Star and Griesemer, 1989: 393) – i.e. an object with "different meanings in [the] different social worlds" of different users. Hence, we suggest participants can see different values reflected in, and can enact different values through, free reuse groups. For instance, participants can enact, or see reflected, either conservation or openness to change values, alongside self-transcendence values (as discussed above). This value-neutral image is constructed by

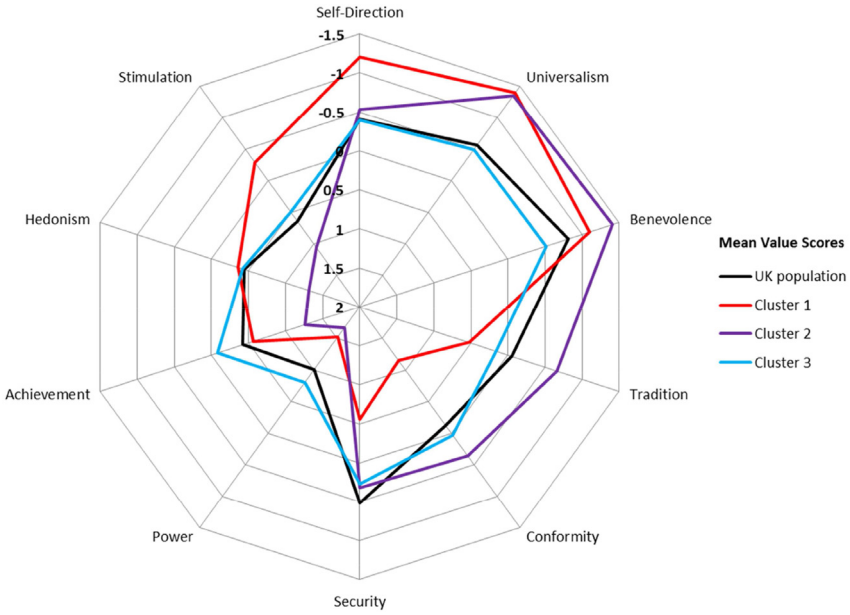

Fig. 5. Mean basic values scores – UK population and clusters 1, 2 and 3 (negative scores indicate that the value is emphasised by members of the sample).

Table 4
Some means by which participants can enact values in free reuse groups.

Value	Enacted by participants in free reuse groups by
Self-transcendence	• Reducing one's environmental impact by extending the lifespan of an item (Foden, 2012); • Helping someone in need to obtain an item that could improve their quality of life (Groomes and Seyfang, 2012; Guillard and Bucchia, 2012b; Nelson and Rademacher, 2009); • Supporting one's local community (Nelson et al., 2007).
Openness to change	• Forming connections with members of a local community and meeting new people when giving away or receiving an item (Foden, 2012; Nelson et al., 2007); • Engaging in an alternative form of waste disposal, consumption and/or charitable giving practice (Guillard and Bucchia, 2012b); • Freely choosing who to give an item to (enacting the value of self-direction).
Conservation	• Engaging in an act that extends the stewardship and life of the item, and hence in a basic sense conserves resources and exercises frugality; • Performing the practice of thrift (Foden, 2012) – although this may be a necessity for some members, is it likely to be a traditional practice for others, with echoes of post-war austerity; • Engaging with one's local community – as a traditional activity that predates the atomised communities of capitalist society (cf (Putnam, 2000) *Bowling Alone*).

restricting the explicit objective of the groups to reducing the amount of waste sent to landfill. This is an objective with appeal spanning ideological and value-driven perspectives and enables the groups to build a coalition of participants with a diverse range of values and perhaps motivations. However, the central role of self-transcendence values cannot be fully concealed. Whilst, the core rules governing the groups are minimal they do mandate that all items must be given freely.

By establishing, supporting and growing free reuse groups, free reuse activists mobilise the values of participants for particular and tangible ends: the values are 'performed'. In particular, as discussed above, with the central and explicit objective of keeping usable items in use (and out of landfill). The efforts of activists to increase participation in groups – e.g. raising awareness of groups via traditional and new forms of media and engaging in collaborations with local government and non-profit organisations – can be viewed as instrumental (i.e. keeping more items in use). However, they also necessarily seek to propagate the values of self-transcendence that are so central to processes and structures of the groups. Furthermore, although free reuse groups do not have an explicit environmental or political agenda, some activists and participants do make connections between the groups and concepts of social and environmental justice (Foden, 2012; Nelson and Rademacher, 2009; Nelson et al., 2007). Hence the redistribution of items from affluent group members to economically and socially disadvantaged members, and the reduction of member's environmental impact, become desirable side effects of free reuse groups, towards which participant values are mobilised.

5.3. Implications for the diffusion of grassroots innovations

Rogers (1962: 5) defines diffusion as "the process by which an innovation is communicated through certain channels over time among the members of a social system." In terms of the implications our research for the diffusion of grassroots innovations, we view the study as supportive of the premise that the rate and extent of the diffusion of grassroots innovation through society is related to the degree of fit with wider values. In the case of online free reuse groups, the distribution of values appears unlikely to be a limiting factor: the survey results show that many current participants (Cluster 3, 40% of the sample) have similar self-transcendence values to the general population. However, we note that the sample of survey respondents was self-selecting and

Stuff you don't need? Freegle it!

Don't throw it away – give it away on Freegle! You might not need that old sofa or wheelbarrow any more – but there might be someone just round the corner who does. Or if there's something you'd like, someone nearby might have one.

Lurking in sheds, attics and cupboards all over the UK are items that are too good to throw away, but are not loved or needed anymore. Freegle online groups can help!

Remember, if you can't find what you need through Freegle, then please shop online through Give as you Live and raise funds for Freegle, without costing you a penny extra.

There are 1,905,620 Freegle members in 400 reuse groups all over the UK - see photos of recently Freegled items and a live map of new messages.

Fig. 6. A snapshot of the Freegle homepage (Freegle, 2014b).

hence may not be representative of general population of free reuse group participants (as discussed in detail in Section 3.2).

We now turn to identify other potential barriers to the diffusion of online free reuse groups. First, we note that as groups are run by volunteers and reliant on generosity and trust between strangers, potential users may be deterred by a lack of confidence in the groups themselves and the quality of the items offered (Vermeir and Verbeke, 2008). Secondly, we suggest that the economic and political institutions that limit the potential for environmental behaviours in general (Blake, 1999), may also limit the impact of efforts to increase participation in free reuse groups. Thirdly, it is possible that diffusion may be limited by an incongruence in the *practices* of online free reuse groups, relative to the prevailing, habitual and routine practices of consumption and waste disposal (Hargreaves et al., 2013b), practices which themselves are supported by institutionalised procedures that together exemplify the structural challenges faced by grassroots innovations (Seyfang and Smith, 2007). The interplay of practices and values itself merits further attention (Piscicelli et al., 2015).

The objectives of online free reuse groups are a form of socio-technical change that to some extent conflicts with prevailing regimes and social practices. Even if there is a perhaps surprising degree of value overlap with wider society, free reuse groups and (we would suggest) many other grassroots innovations enact, seek to propagate and express both marginal and marginalised values. Politics and power are bound up in these processes, with active resistance by the prevailing regimes (Geels, 2014) that tend to enact rather different values, notably the high levels of consumption required by systems of provision dependent on economic growth and material throughput. Extending the use period (life) of products through sharing is contradictory to the latter.

We have suggested that the projection of a value-neutral image and the flexibility to enact different values within free reuse groups are likely to have played an important role in the diffusion of the innovation to date, supporting a relatively large coalition of activists and participants with diverse values. Despite this, value neutral projections in the case of Freegle are arguably just that (projections): despite participants holding a spread of values, the umbrella organisation and the majority of participants and activists do enact and seek to propagate particular pro-social values. This raises the question of the extent to which other grassroots innovations also make, or could make more use of value neutral projections to create space for the enactment of a range of values, whilst at the same time furthering innovations that are nonetheless bottom-up and value-driven.

5.4. Research directions

The conceptual model above embodies concepts and causal processes intended to help analyse, characterise and explain the mobilisation of values within online free reuse communities. However, many opportunities remain to further develop and apply the model in studies of other forms of grassroots innovations. We highlight two such opportunities below. Focussing on basic values has proved useful as an analytical device, obliging us to be explicit about which values are being mobilised and by whom. However, grassroots innovation research suggests that other, non-basic values and also more specific attitudes (e.g. deep green values and anti-consumption attitudes respectively) can also play an important role in driving societal experiments (e.g. Seyfang et al., 2014; Seyfang and Smith, 2007). Furthermore, where participants use free reuse groups to engage in the practices of ethical consumption (Foden, 2012), it is likely that anti-capitalist values (Shaw et al., 2005) and ecological citizenship values (Seyfang, 2006) also play important motivational roles. Also, a large body of work within environmental psychology is premised on a distinction between biospheric, egotistical and social-altruistic values and orientations (Stern and Dietz, 1994). Much debate in value, behaviour and norm theory revolves around whether there is a separate biospheric value orientation, as in factor analytic studies, social altruistic and biospheric value items tend to load on the same factor (Schwartz, 1992; Stern et al., 1999, 1995).

Thus while we have used one particular conceptualisation of basic values, there are debates regarding their detailed nature, particularly regarding the nature of environmental concern. There are also long-standing debates and much work in relation to the relationships between values, norms, attitudes and behaviour. Further research is required to understand the full range of values involved in grassroots innovations and how these values relate to specific attitudes operative in grassroots innovation contexts. Indeed, from a sociological, practice-based perspective, attitudes are conditional on practices rather than vice versa (Shove, 2010) and it can be reasonably hypothesised, as above, that existing practices are also important, perhaps as important as values, in the diffusion of grassroots innovations. From a practice theory perspective, attitudes are seen as a part of dispositions that are physically, cognitively and emotionally integrated into ways of living; practices are also seen as nested and integrated, connected in multiplicities of arrangements that make up lifestyles (Warde, 2005). From this perspective, those involved in promoting the diffusion of grassroots innovations need to consider not only how and what values are projected, but also: what types of practice are prevalent in related contexts (Hargreaves et al., 2013b); their typical combinations; levels of commitment to these; how 'careers' within practices begin, develop and end; how people come to an understanding of what is required by the practice and their role within it and so on (Hargreaves et al., 2013b).

There is also the potential to more explicitly integrate aspects of socio-technical transitions theory into the model above. For example, research might consider which values are enacted and propagated by the prevailing socio-technical systems that serve

societal needs (i.e. the regime level of the MLP (Geels, 2005)), exploring how these dynamics may limit or open up opportunities for grassroots and other forms of innovation. In particular, there is scope here for considering how values relate to the dynamics posited as operative not just in the MLP, but in broader conceptions of socio-technical change. Theorists observe that transitions in general tend to be dependent on particular conditions. de Haan and Rotmans (2011) conceive of these as (a) cultural and structural tensions; (b) a degree of internal inconsistency (stress); and (c) pressures from inside or outside of the regime. de Haan and Rotmans (2011) also speak of particular, sequential patterns or processes that transitions undergo, namely empowerment, reconstellation and adaptation: as socio-technical constellations build in strength, they become materially and cognitively installed and the regime form shifts to accommodate the innovation. In the context of sustainability, these tensions, stresses and subsequent processes might be viewed as reflecting and involving long term value shifts that in the MLP would be located at the 'landscape' level. Indeed, as Leiserowitz et al. (2006) identify a fundamental change is needed in how societies' prioritise values to make the transition to sustainability. However it is also possible that the scope of environmental protection is being increasingly broadened and understood as an expression of social altruistic values, in the terminology of value, behaviour and norm theory. This would represent more of a conceptual or cognitive change than a value change. More broadly, therefore, values are related to longstanding discussion and debate as to the role of individual agents and agency in structural change (Giddens, 1984), by providing a motive for intention and action.

6. Conclusion

There is growing interest in civil society as an overlooked site from which 'grassroots social innovations' may emerge, with significant potential to contribute to the transition to more sustainable production and consumption systems. We offer a conceptual model of the role that values may play in grassroots innovations as they seek to emerge from niche to regime. Applying psychological value scales in a large scale survey of participants in UK online free reuse groups, we find that while values of self-transcendence (benevolence and universalism) are emphasised by a majority of the participants to a significantly greater extent than in the UK population as a whole, a large minority (40%) actually emphasise self-transcendence values to a lesser degree than the UK population. Moreover, those participants who do emphasise self-transcendent values are not mono-dimensional in their value sets, but also hold other values that are of significance to the wider population. While this is to be expected, there is surprisingly little work on the role of values in relation to concepts of socio-technical transition and even more specifically in relation to grassroots innovations as a feature of transitions. Yet in the pro-environmental psychology literature, values and norms are key constructs in explaining behaviour, albeit with empirically inconsistent relationships – for which reason we also refer to the practice literature as attentive to posited structural, as well as psychological influences on behaviour. Indeed, overall, the study could be said to raise more questions than it answers and we offer several research directions for what we consider to be a promising avenue of work in relation to transitions dynamics.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.jclepro.2015.04.062.

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