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Moral, wasteful, frugal, or thrifty? Identifying consumer identities to understand and manage pro-environmental behavior

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Abstract

Moral motives are important for pro-environmental behavior. But such behavior is not only motivated by moral or environmental concerns. We examined what higher-order motives, other than morality, may be important for understanding pro-environmental behavior, by studying consumer identities. In three studies (N = 877) four consumer identities were distinguished: moral, wasteful, frugal, and thrifty. Frugal and moral consumer identities were most salient and were the strongest predictors of pro-environmental behaviors, but in different ways. Frugality, which is related to, but distinct from thriftiness, was particularly important for behaviors associated with waste reduction of any kind (including money). The findings suggest that people adopt the same behavior for different reasons, in ways consistent with their consumer identities. People manage multiple consumer identities simultaneously and environmental policy is likely to be more effective if it addresses these multiple identities.

Keywords: pro-environmental behavior, morality, frugality, identity

Moral, wasteful, frugal or thrifty? Identifying consumer identities to understand and manage environmentally behavior

People adopt pro-environmental behavior for different reasons as Howell (2013) succinctly encapsulates in her paper entitled "It's not (just) 'the environment, stupid!'". However, much existing research on pro-environmental behavior frames the issue as one of morality (Steg & Vlek, 2009; Van der Werff, Steg, & Keizer, 2013). In such research pro-environmental behavior refers to behavior people adopt with the explicit intention to achieve an outcome beneficial for the environment (Kollmus & Agyeman, 2002). However, such goal- directed, intentional pro-environmental behavior is not necessarily related to environmental impact (Gatersleben, Steg, & Vlek, 2002; Kormos & Gifford, 2013). Focusing only on intentional pro-environmental behavior may limit our understanding of behaviors that have significant impact on the environment but are not motivated by environmental concerns. If a goal of environmental psychology research is to promote more environmentally positive behaviors and tackle environmentally damaging behaviors, a wider perspective is needed. The aim of this paper is to gain an understanding of potentially important higher order motives, other than morality, associated with pro-environmental behavior, by which we mean behavior that is beneficial for the environment, whether intentional or not (Steg & Vlek, 2009). This is done by identifying a limited set of important consumer identities and by examining how these identities are associated with reported pro-environmental behaviors.

Consumer motives - morality

Human motives can be specific to a behavior, for example the motivation to win a race or to cycle to work, but higher-order motives, such as altruism, can influence a wide range of behaviors across different contexts. They are therefore particularly important for the

understanding and promotion of diverse pro-environmental behaviors. The study of higher-order motives in the environmental psychology literature is dominated by the study of morality. This work tends to be based on theories such as the Norm Activation Theory (Schwartz, 1977) and Value Theory (De Groot & Steg, 2008; Schwartz & Bilsky, 1990; Stern, 2000). The work suggests that a useful distinction can be made between people who are more concerned with self-enhancement motives (egoism and hedonism) from those who are more concerned about self-transcendent motives (altruism and biospherism); or, as De Groot and Steg (2009) suggested, between those who are mean and those who are green. Self-transcendent values are positively associated with moral norms, which are strong predictors of pro-environmental behavior (Stern, 2000). The argument is that pro-environmental behavior is costly to the individual but beneficial for the collective, the environment, and future generations. Therefore, such behavior is unlikely to be motivated by egoistic, self-enhancement motives but is primarily motivated by self-transcendent values such as biospherism and altruism (De Groot & Steg, 2009). There is indeed robust evidence that those with more self-transcendent values report stronger environmental concern and behavior (De Groot & Steg, 2008; Nordlund & Garvill, 2002; Perlaviciute & Steg, 2015; Schultz, 2001), whereas self-enhancement is associated with lower environmental concern and behavior and with greater materialism (Hurst, Dittmar, Bond, & Kasser, 2013). It is therefore argued that pro-environmental behavior should be encouraged through moral appeals (which support self-transcendent values) and not through financial appeals (which support self-enhancement values; Crompton & Kasser, 2009). Indeed, appeals to moral motives have been shown to be more effective in promoting some pro-environmental behavior than appeals to financial motives (Bolderdijk, Steg, Geller, Lehman, & Postmes, 2013).

Consumer motives - frugality, thriftiness, and materialism

In other areas of research such as sociology and consumer studies, another higher-order motive has merited frequent mention: that of frugality. Such research has focused, for instance, on living a lifestyle of voluntary simplicity (Leonard-Barton, 1981; McDonald, Oates, Young, & Hwang, 2006; Shaw & Newholm, 2002) or adopting a low carbon lifestyle (Howell, 2013).

Frugality is associated with restraint in acquiring and using economic goods and services (Goldsmith & Flynn, 2015). Like environmental concern, frugality is negatively related to materialism (Goldsmith & Flynn, 2015). It is also positively related to pro-environmental attitudes and behaviors (Fuji, 2006; Gatersleben, Murtagh, & Abrahamse, 2012; Pepper, Jackson & Uzzell, 2011). However, it is not related to values in the same way as environmental concern is. Todd and Lawson (2003) found positive links not only with self-transcendent values such as unity with nature, but also with self-enhancement values such as ambition. Frugality therefore is associated with pro-environmental behaviors but not through morality. Instead frugality may be linked to individual motivations such as self-control (as opposed to impulsivity) and consumer independence (from social norms around consumer behavior; Goldsmith & Flynn, 2015).

Evans (2011) suggests that frugality needs to be distinguished from thriftiness. The first is associated with reduced consumption (and therefore reduced environmental impact) but the latter is associated with utility maximization and therefore potentially increased consumption. Financial concerns are important both for frugality and thriftiness. However, whereas thriftiness is associated with increased consumption, frugality may be associated with more pro-environmental behavior through constraint.

In summary, a range of different consumer motives may be important for pro-environmental behavior and environmentally damaging behavior, including environmental

and financial motives (frugality and thriftiness). Financial and environmental motives are often seen as incompatible. Financial appeals have been considered ineffective or even harmful for the promotion of pro-environmental behavior (Crompton & Kasser, 2009; Van der Werff et al., 2013) because they strengthen self-enhancement, egoistic motives, and may thereby undermine self-transcendent, moral motives. However, negative correlations between self-transcendent values (such as environmental protection) and self-enhancement values (such as materialism) tend to be moderate or small (Hurst et al., 2013; Gatersleben et al., 2012), suggesting that these motives may not always be in conflict. Moreover, there is significant evidence that pro-environmental values and attitudes do not always translate into pro-environmental behavior (Kollmus & Agyeman, 2002), clearly other factors play a role when consumers make decisions.

Drawing on identity theory, we propose that consumers hold multiple (perhaps seemingly conflicting) motives that have a bearing on pro-environmental behavior. The aim of this research is to identify a limited set of such important consumer identities and examine their association with pro-environmental behavior.

Consumer identities and pro-environmental behavior

Identity theory proposes that people hold an array of not well integrated identities (Oyserman. 2009). People are motivated to act in identity congruent ways. However, cognition and action are dynamically shaped by contexts. Oyserman (2009) suggests that thinking is situated and the impact of context on thinking does not depend on conscious awareness of this impact. People's identities shape their readiness to act and think but they also think flexibly and are responsive to their environment. This means that actions are guided by multiple identities. Which identities guide behavior depends on the context (affecting the salience of identities), although broader identities (e.g., gender) may be salient

across contexts. Consumers make decisions in a wide range of contexts and environmental identities may not always be salient in those contexts. An understanding of other important consumer identities that have a bearing on pro-environmental behavior could help develop more effective environmental policies for a wider audience across different settings.

Consumer identities have been extensively studied in the consumer and marketing literature, for instance, in relation to brand or product identities (e.g., Chernev, Hamilton, & Gal, 2011; White & Dahl, 2007) or to understand consumer motivations (Klein, Lowrey, & Otnes, 2015; Oyserman, 2009). Reed and colleagues define consumer identities as "any category label with which a consumer self-associates" (Reed, Forehand, Puntoni, & Warlop, 2012, p.310). The underlying idea of such a conceptualization fits with self-perception theory (Bem, 1967), which suggests that people know who they are by looking at what they do.

Focusing on consumer identities in particular is useful because the environmental impact of individual lifestyles is primarily related to the purchase, ownership, use, and disposal of consumer goods (Druckman & Jackson, 2009). Therefore, it enables the study of a broad range of environmentally significant behaviors, including those that are beneficial for the environment and those that are potentially harmful.

One consumer identity that has already received a fair amount of attention in pro-environmental behavior literature is the environmental identity. Several studies have found a link between a wide range of pro-environmental behaviors and the extent to which people indicate that being environmentally friendly is important to their sense of self (Gatersleben et al., 2012; Kashima, Paladino, & Margetts, 2014; Van der Werff et al., 2013; Whitmarsh & O'Neill, 2010). Environmental identities have also been associated with positive spillover of one pro-environmental behavior onto another (Truelove, Carrico, Weber, Raimi, & Van den Bergh, 2014). Moreover, adoption of new pro-environmental behaviors as well as reminders

of past pro-environmental behaviors have been shown to strengthen environmental identities (Poortinga, Whitmarsh, & Suffolk, 2013; Van der Werff et al., 2013).

It is clear that environmental identities are important for pro-environmental behavior. However, the relative importance of other consumer identities such as frugality or thriftiness is less well understood. Moreover, existing studies that do examine a range of identities tend to present respondents with a predefined set of such identities (Gatersleben et al., 2012) making it difficult to assess their relative importance without priming potential answers. Asking people how they self-identify without the use of pre-defined categories is a measurement method long established in social psychology (Grace & Cramer, 2003; Kanagawa, Cross, & Markus, 2001; Kuhn & McPartland, 1954). Applying this method to consumer identities can help gain valuable insight into the complexity of higher-order motives that are associated with pro-environmental behavior. Studying how people self-identify as consumers can provide insight into the importance of, and relationship between motives that are often seen as potentially conflicting, such as frugality, thriftiness, materialism, and environmental protection. Such a question taps into a wide range of possible motives and a wide range of possible relevant consumer behaviors but it also moves away from an explicit framing of the study as "pro-environmental".

Research aims

The focus in previous research on moral and environmental motives to understand pro-environmental behavior may have obscured the importance of other potentially important higher order motives. To investigate such motives we examine how people see themselves as consumers. Recognizing the profusion and complexity of identities, our aim is to develop a limited set of identities as a first step in exploring the intricacies of multiple consumer identities. Such a set of identities may include an environmental consumer identity as well as

a frugal consumer identity, as already recognized in the literature, and possibly many others. In addition the paper explores to what extent these identities are associated with pro-environmental behaviors and motivations for adopting these behaviors.

We present three studies with a total of 877 UK consumers. In an initial pilot study we developed the method for studying consumer identities. In Study 1 we used this method to identify a comprehensive set of consumer identities and to test the influence of study framing on reported identities. In Study 2 we examined the structure of consumer identities and the link between identities and energy conservation. In Study 3 we tested how consumer identities are associated with reported motivations for (not) using disposable plastic bags. All studies were granted ethical approval in accordance with University ethics guidelines.

Pilot study

Introduction

The aim of the pilot study was to explore whether the adapted version of the Twenty Statement Test (Kuhn & McPartland, 1954) was suitable for identifying a set of identities salient to individual consumers, enabling the capture of the complexity of multiple consumer identities.

Method

Participants. Data were collected among 19 new parents (69% female) and 27 retirees (49% female) who participated in a longitudinal study on lifestyles in transition.

Measures. Based on the Twenty Statement Test (Kuhn & McPartland, 1954), respondents were asked to complete as many statements about themselves as possible in response to the question: 'When it comes to my consumer behavior I am ….'. Consumer behavior was defined as the purchase, use, and disposal of consumer products such as food, clothing and electronics. This open-format measure aims to represent an individual's own self-conceptualization. It is therefore ideal to measure consumer identities as defined by Reed et al. (2012). The Twenty Statement Test has been extensively used since its creation (Cousins, 1989; Grace & Cramer, 2003; Kanagawa et al., 2001). The properties of the

measure are difficult to establish but it has shown high inter-rater reliability and good construct validity (Grace & Cramer, 2003; Murtagh, Gatersleben, & Uzzell, 2012).

Procedure. The identity questions were embedded in a survey completed at the end of the 2.5 year project. The larger survey included a wide range of questions on values, attitudes consumer behaviors and lifestyle change.

Analyses. A coding scheme was developed based on Cousins (1989). The original coding scheme of the Twenty Statement Test (Cousins, 1989) distinguishes physical, social, attributive, and global identities. Only attributive identities associated with preferences, wishes, and activities are relevant here for determining consumer identities. All coding was done by the first author. A second coder, blind to the purpose of the research, independently coded a sample of half the answers. The two coders agreed 80% of the time (Cohen's Kappa = .78, $p < .001$).

Results

The number of responses given ranged from 3 to 20 ($M = 10$) and this was normally distributed. In total 227 responses were coded. Answers that did not refer to the respondents' own consumer behavior were not coded (20%). Most of the responses referred to activities and habits, such as "I recycle", "I look for bargains". Sometimes these were qualified: "I am good at recycling", "I buy too much". Many people referred to preference (likes, dislikes, interests) such as "I hate shopping", "I like a bargain", "I am willing to pay extra for good quality". Less often did people refer to wishes, hopes or wants, such as "I would like a nice car". In total 25 consumer identities were distinguished (see Table 1).

Conclusion

The Twenty Statement test proved a useful tool to explore how people describe themselves as consumers. We identified 25 distinct consumer identities that enabled the creation of a coding scheme for Study 1.

Study 1

Introduction

The aim of Study 1 was to verify the set of 25 consumer identities among a different sample of UK consumers. In addition, framing the study as an environmental study influenced responses. Identity theory proposes that the salience of identities depends on context (Oyserman, 2009). We therefore expected respondents to be more likely to describe themselves in pro-environmental terms after they completed questions on their pro-environmental behavior.

Method

Participants. Emails were sent to social networks of research assistants via social media (friends, family, fellow students). No compensation was given. In total 100 participants (63 female) completed the survey: The mean age was 40 (*SD* = 16.2). Half the respondents had completed a degree and the sample was therefore relatively highly educated.

Measures.

Pro-environmental behavior. Respondents were asked to indicate how often they enacted 26 pro-environmental behaviors (1 = *never*, 5 = *always*) such as voting for a green political party, donating to an environmental cause, using public transport, composting, avoiding the use of plastic bags, reviewing one's energy use, avoiding flying to holiday destinations, putting on an extra sweater to keep warm, and driving economically.

Consumer identities. Respondents were asked to respond to the question: "When it comes to being a consumer I am ….". They were asked to complete up to 15 statements as the majority of respondents in the pilot study generated no more than 15 statements. All respondents answered the question, most gave around 10 answers (ranging from 1 to 15). A total of 808 responses were given; 42 could be coded as more than one identity. Comments that did not refer to consumer identities (41) were excluded from the analyses. Answers were coded using the scheme developed in the pilot study. An independent coder scored a random sample of half the answers. The coders agreed 86% of the time (Cohens's Kappa = .85, $p < .001$).

Procedure. The on-line questionnaire was structured in three blocks: pro-environmental behavior, consumer identities, socio-demographics. Just under half (42%) of the respondents completed the pro-environmental behavior questions before completing the

adapted Twenty Statement test. All respondents completed the socio-demographic questions last.

Results

Table 1 shows the percentage of respondents who self-described as each of the 25 consumer identities. Respondents were most likely to describe themselves as frugal consumers and bargain hunters. They were least likely to describe themselves as trend followers, shoppers or gadget addicts. Respondents ascribed themselves consumer identities that could be associated with reduced environmental impact ("frugal", "recycler") as well as identities that could be associated with increased environmental impact ("bargain hunter", "impulsive"). Several people identified with potentially conflicting identities, often for different products: e.g., 'a reluctant shopper generally', as well as 'a person who haunts second hand book shops,' or 'someone who doesn't buy many clothes', and 'someone who buys lots of food'.

Table 1 also shows where significant differences were found between the two survey conditions. As expected, when pro-environmental behavior questions were answered first, respondents were more likely to describe themselves as an "energy saver" and a "green consumer", but not a recycler; they were less likely to identify as "bargain hunters", "impulsive consumers" or "hedonic consumers". However, after applying a Bonferroni correction to control for Type I error, only results for the energy saver identity were significant.

- Table 1 here –

Conclusion

Study 1 found 25 distinct consumer identities that respondents used to describe themselves. Several consumer identities such as "a recycler", "a green consumer" or "an energy saver" referred specifically to pro-environmental behavior. But other consumer

identities were also associated with potentially reduced environmental impact (e.g., frugality). Moreover, some respondents described themselves in seemingly conflicting ways e.g., frugal as well as wasteful. This was often in relation to different products, supporting the idea that the influence of identities is context dependent (Oyserman, 2009). For instance, buying clothes, driving a car, buying food, and saving energy all take place in very different social and physical environmental settings.

Frugality was reported most often (by just under half of the respondents) suggesting this is one of the most salient consumer identities. Pro-environmental identities such as "a recycler" or "an energy saver" were reported by about a quarter of the respondents. As expected, framing the study as an environmental study affected the salience of some pro-environmental consumer identities (green, local, energy saver). However, this effect was not strong and several identities were not affected, suggesting that the reported identities are relatively broad (Oyserman, 2009).

Study 1 captured a wide range of different consumer identities. But the sample size did not allow for analyses of the underlying structure of the identities. Moreover, although a wide range of consumers were included the sample was not representative of the UK adult population.

Study 2

Introduction

Using a survey instrument distributed among a representative sample of UK householders we further examined the usefulness of the 25 consumer identities. In addition, we examined whether the 25 consumer identities could be grouped into meaningfully distinct higher-order consumer identities, and whether such higher-order consumer identities are related to reported energy conservation behaviors that have been linked to environmental and frugal motives in previous research (e.g., Howell, 2013; Whitmarsh & O'Neill, 2010).

Method

Participants. Participants were 509 members of a nationally representative panel of UK households. Just over half of the respondents (51%) were female. Age was spread across age groups (22% - 18-30, 45% - 31-45, 17% - 46-55, 15% - 56-65, 20% - 66 or over).

Measures.

Consumer identities. Respondents were presented with the list of 25 identities Descriptions of the items were based on the words respondents generated in Study 1 (see Table 2). Respondents were asked to indicate to what extent each identity applied to them: for example 'When it comes to being a consumer I am …. a value-for-money consumer – I look for value for money; … an impulsive consumer – I buy things on impulse; a green consumer – I buy green products, avoid packaging; … a frugal consumer – I buy only what I need and don't replace unless necessary (1= *totally disagree*, 7 = *totally agree*).

***Energy saving behaviors*.** Respondents indicated how likely they were to adopt six behaviors with which they could save energy (e.g., take shorter showers, turn down the thermostat, use the tumble dryer less). These were grouped into one variable by calculating the mean score (M = 5.65, SD = 1.10; α = .66). The reliability of this scale is only marginally satisfactory but could not be improved by removing any survey items.

Procedure. Data were collected by a market research company to achieve a representative sample. The questions analyzed here were included in a survey on a very different topic (perceptions of neighborhood quality). Respondents were members of an online panel who are paid a small amount for every survey they complete. For this survey the reward was 88 pence (at that time around 90 Euro cent; 1.35 US dollars). The panel consisted of 5377 people from across the UK. A quota filling approach was used to ensure representativeness on age and gender. In total 716 people completed the survey. After

cleaning the data by removing duplicate surveys and surveys that were more than 50% incomplete, 509 usable surveys remained.

Results

The sample was randomly split into two equal size samples. Exploratory factor analyses were carried out on one half of the sample. The model was then tested on the other subsample using CFA in SPSS AMOS. An MCAR test demonstrated that values were missing at random (χ^2 = 578.139, *df* = 575, *p* = .455) and they were therefore replaced using the expectation maximization (EM) technique.

A principal component factor analysis with oblimin rotation was conducted to explore underlying dimensions in consumer identity importance. In the initial analysis eight factors were extracted with eigenvalues greater than 1. The scree plot demonstrated that the first four factors explained most of the variance and captured most of the items. A four factor solution was therefore examined (see Table 2). Factor 1 captured the extent to which respondents indicated that green/moral consumer identities were important to them and included identities such as a "green consumer", "a fair consumer", and "a local consumer". Factor 2 captured wasteful consumer identities such as "a trend follower", "a gadget addict", and "a compulsive consumer". Factor 3 captured frugal consumer identities, associated with planning and saving, such as "a planner", "a budgeter", and "a frugal consumer". Finally, Factor 4 captured thrifty consumer identities, which were associated with utility maximization such as "a bargain hunter", "a value seeker", and "a second hand consumer". Interestingly energy saving was primarily associated with frugality and not with green/moral consumption. Perhaps this is because the consumption of green and fair consumer products is associated with higher costs whereas energy saving is associated with saving money.

A confirmatory factor analysis was conducted on the other subsample. Initially identities with loadings over .55 on the exploratory factor analysis were included in the

analyses. This resulted in a model with a poor fit (CMIN > .50, RMSEA > .10, and CFI, GFI, and NFI < .90). Removing variables with low correlations (< .50) with the relevant latent variable (healthy, recycle, second hand consumer, gadget addict, hedonic, second hand) in CFA improved the model fit to an acceptable level (CMIN = 4.125, GFI = .93, NFI = .89, GFI = .93, CFI = .91, RMSEA = .078, see Figure 1). Chi-square was significant but this is sensitive to sample size and more common with sample sizes of 200 or more. The final solution supported distinguishing four different consumer identities: a moral, wasteful, frugal, and thrifty consumer identity.

- Table 2 here -

- Figure 1 here -

Based on the findings four new variables were created reflecting moral, wasteful, frugal or thrifty consumer identities (by calculating mean scores across relevant items). Respondents were most likely to describe themselves as thrifty consumers (M = 5.97, SD = 1.11, α = .71), followed by frugal consumers (M = 5.05, SD = 1.17, α = .78), they were less likely to describe themselves as moral consumers (M = 3.83, SD = 1.34, α = .77) and least likely to describe themselves as wasteful consumers (M = 3.13, SD = 1.28, α = .77). Note that the latter two identities also had larger standard deviations indicating greater variability in the scores. A frugal consumer identity was negatively related to a wasteful consumer identity (r = -.29, p < .001) and positively to a moral consumer identity (r = .34, p < .001). Moreover, a frugal and a thrifty consumer identity were positively associated (r = .38, p < .001).

The variables were used in regression analyses to examine how the consumer identities are related to reported energy conservation. Analyses controlled for demographic variables such as age and gender, but these did not affect outcomes. Seventeen percent of the

variance in energy saving behaviors could be explained by the four identities ($F(4,502) = 25.03$, $p < .001$). Energy saving behaviors were positively associated with a moral consumer identity ($\beta = .26$, $t = 5.82$, $p < .001$) and a frugal consumer identity ($\beta = .21$, $t = 4.18$, $p < .001$). They were not significantly associated with wasteful consumer identities ($\beta = .02$, $p = .61$) and marginally positively with a thrifty consumer identity ($\beta = .08$, $p = .065$).

Conclusion

Study 2 showed that people's consumer identities can be captured into four distinct consumer types: moral, wasteful, frugal, and thrifty. Although these identities are meaningfully distinct they were also related supporting the idea that different identities are managed simultaneously. A frugal identity was negatively related to a wasteful identity supporting the idea that the desire to avoid waste is key to this identity. A moral identity, however, was not negatively associated with a wasteful identity suggesting that these potentially conflicting identities can be held simultaneously. A thrifty and a frugal consumer identity were positively related and both were associated with financial concerns.

The findings also suggest that moral and frugal consumer identities are particularly important to study in relation to pro-environmental behaviors. Although they are positively related they are clearly distinctly different, and tap into very different underlying motives. Having established four overarching consumer identities, a further test was conducted to examine their predictive power for one specific behavior in the context of a recent policy change.

Study 3

Introduction

In October 2015, a charge was introduced for plastic carrier bags in England. All large retailers are now required to charge customers 5p (€0.06, $0.06) if they require a plastic carrier bag for their purchases. Previous research has found the introduction of the charge in Wales very effective in reducing the use of disposable plastic bags (Poortinga et al., 2013). This study also found that environmental as well as financial concerns motivated behavior changes. We examined to what extent reported motivations for changes in plastic bag use, in response to the charge in England, were associated with consumer identities. It was hypothesized that reported changes would be positively related to the importance of moral, frugal, and thrifty consumer identities, but negatively to wasteful consumer identities. However, moral consumers would be more likely to report environmental concerns as important motivators for those behavior changes, whereas frugal and thrifty consumers would be more likely to report financial concerns. Finally, we hypothesized that support for the policy would be higher among moral consumers but lower among frugal, thrifty, and wasteful consumers, because financial cost avoidance is important for each of the latter three.

Method

Participants. The survey was completed by 224 people. A quarter of the respondents were male. Average age was 35, and ranged from 18 to 72. Just under a third (30%) were students, 42% worked full time and 21% worked part-time. Just under half of the respondents (45%) had completed a degree. Although there was a wide spread of different demographic groups, the sample was not representative of English adults and female students were overrepresented. In the analyses we therefore controlled for possible effects of these factors.

Measures.

Plastic bag use. Respondents were asked to report their plastic bag use with four questions: "How many times in the last ten shops did you … bring your own bags" (*1-10*

times: *M* = 7.63, *SD* = 2.73), "….ask for a disposable plastic bag" (*1-10 times*: *M* = 2.09, *SD* = 2.63), "In your last visit to the supermarket did you take your own bag" (1 = *definitely not*, 5 = *definitely*: *M* = 1.76, *SD* = 1.29), and "In the last month how often did you bring your own bag" (1 = *never*, 5 = *always*: *M* = 4.22, *SD* = 1.11) . Items were recoded where needed and z-scores were computed. The items were then combined to form one reliable scale (α = .93) reflecting plastic bag use since the introduction of the charge.

Reported behavior change. Respondents were asked whether or not they had changed their behavior in response to the charge (no/yes). Most (75%) said they had.

Reasons for changing behavior. An open ended question asked respondents to record why they had or had not changed their behavior. Answers were grouped into seven categories (see Table 3). Responses were coded independently by the first author and a research assistant. Coders agreed 97% of the time (Cohen's Kappa = .90, $p < .001$). The most common reasons for changing behavior were: avoiding paying the 5p (cost), and the charge functioning as a reminder (prompt). Fewer people referred to environmental benefits or benefits to self (to avoid clutter in their house, because their own bag was stronger). Reasons for not changing behavior were: using own bags already, forgetting, or personal reasons (cannot be bothered, want the bags for something - usually to use as rubbish bags).

Charge support. Respondents were asked to what extent they supported the charge (0 = *strongly oppose*, 10 = *strongly support*). Overall support was high (*M* = 7.96, *SD* = 2.30).

Consumer identities. To measure consumer identities respondents were asked to report on a 5-point scale (1 = *not at all*, 5 = *very much so*) to what extent they considered themselves to be: a moral consumer (*M* = 3.55, *SD* = 1.00), a wasteful consumer (*M* = 2.00, *SD* = 1.02), a frugal consumer (*M* = 3.84, *SD* = 1.03), and a thrifty consumer (*M* = 3.12, *SD* = 1.25). A moral consumer identity was negatively related to a wasteful consumer identity (*r* =

- .28) but not to a frugal or thrifty consumer identity. Frugal and thrifty identities were positively related (r = .57).

Procedure. An on-line survey was used to collect data and a link to the survey was distributed via social media and email to work colleagues, friends, and family of research assistants. The survey was distributed about three months after introduction of the charge.

Results

Regression analyses were conducted to examine whether reported plastic bag use is associated with consumer identities. Age, gender, and education were entered into the equation first as they had a small but significant effect on reported use (adj R^2 = .09; F(3,219) = 7.41, p < .001). The consumer identities explained an additional 15% of the variance in reported use of disposable plastic bags (adj R^2 = .15; F(4,215) = 10.22, p < .001). Respondents were less likely to say they used disposable plastic bags when they had a stronger moral consumer identity (β = -.22, t = 3.46, p = .001) and more likely when they expressed a stronger wasteful consumer identity (β = .23, t = 3.59, p < .001). But the reported use of disposable plastic bags was not significantly related to frugal or thrifty consumer identities.

Reported change in the use of shopping bags in response to the charge was not associated with consumer identities. However, reasons for this change were. T-tests were conducted to examine whether consumer identities differed between those who had and those who had not mentioned each of the seven reasons. As expected, those who mentioned costs were more likely to identify as frugal or thrifty consumers (M_{frugal} = 4.22, SD = .71; $M_{thrifty}$ = 3.59, SD = 1.07) than those who did not mention cost as a motivator (M_{frugal} = 3.66, SD = 1.10; t (206) = 4.37, p < .001; $M_{thrifty}$ = 2.90, SD = 1.30; t(206) = 4.05, p < .001). We did not find that moral consumers were more likely to report environmental concerns. Instead moral

consumers were more likely to say that they did not change their behavior because they avoided the use of plastic bags already. The t-tests showed that those who said they did not change their behavior because they already took their own bags were more likely to identify as moral consumers (M = 3.87, SD = .95) and less likely as wasteful consumers (M = 1.63, SD = .85) than those who did not (M_{moral} = 3.53, SD = .95; $t(209) = 2.00$, $p < .05$; $M_{wasteful}$ = 2.03, SD = 1.00; $t(205) = 2.28$, $p < .05$). Finally, those who said that they did not change their behavior because they forgot to take their own bags were less likely to identify as moral consumers (M = 2.82, SD = 3.64) than those who did not say this (M = 3.64, SD = .94; $t(209) = 2.82$, $p < .01$).

Regression analysis, conducted to examine policy support, showed that 21% of the variance could be explained by consumer identities (adj R^2 = .21; $F(4,220) = 16.29$, $p < .001$). As expected, support was higher among those with a stronger moral consumer identity (β = .44, $p < .001$), but it was not associated with other identities.

- Table 3 here -

Conclusion

All respondents reported changing their plastic bag use in response to a charge for such bags, and this was independent of their consumer identities. However, the motivations for these behavior changes did vary with consumer identities. Avoiding paying the charge was more important for frugal and thrifty consumers but not for moral consumers. Moral consumers, however, were more likely to say they already avoided using disposable plastic bags.

General discussion

The role of self-identity has received increasing attention in research on pro-environmental behavior. This work has demonstrated that 'moral', 'green' or 'environmental' identities are important predictors of a range of pro-environmental behaviors (Gatersleben et al., 2012; Van der Werff et al., 2013; Whitmarsh & O'Neill, 2010). In this paper we showed that pro-environmental behaviors are influenced by consumer identities beyond 'green' or 'moral'.

We examined how people describe themselves as consumers and distinguished a parsimonious set of four important higher-order consumer identities: moral (buy green, fair trade, and local), wasteful (like shopping, easily swayed, and impulsive), frugal (avoid wasting things – money, energy, food), and thrifty (try to get as much as possible for as little as possible). These identities capture a significant proportion of the variation in self-reported consumer identities. Although not all the variance in the complexity and variability of consumer identities could be captured in these four identities, their robustness was evident across the three studies. Different methods and different research samples in each of the three studies showed similar results.

These identities are consistent with the existing literature. Morality is associated with biospheric and altruistic values as well as intrinsic motives (De Groot & Steg, 2008; Nordlund & Garvill, 2002; Schultz, 2001). Similarly a wasteful consumer identity maps onto self-enhancement values such as egoism, hedonism, and materialism that have been associated with less environmentally friendly behavior (Hurst et al., 2013). Frugality has been examined in consumer studies and other social sciences (Fuji, 2006; Howell, 2013; Pepper et al., 2011). Frugality is associated with the desire to avoid waste of any kind (money, resources, energy, food) and as such has high relevance for understanding and reducing the environmental impact of individual behavior. Extending Evans' (2011) qualitative findings on frugal and thrifty meanings, the current studies also showed a quantitative distinction

between frugal and thrifty consumer identities. A waste-focused frugal identity showed a somewhat different pattern of relationships with behavior than a cost-focused thrifty identity. The distinction demonstrates that a frugal identity is not about the level of resources available to the individual: the frugal identity is about a deep desire to avoid waste. The thrifty identity, on the other hand, relates to perceptions of cost, value, and economic worth. Such a distinction is not often made in the literature but is important for the study and promotion of more environmentally sustainable behavior. Although both frugality and thriftiness are associated with saving money the first is more likely to be linked to reduced environmental impact than the latter.

Respondents were most likely to describe themselves as frugal consumers. They were least likely to describe themselves as wasteful consumers. This is consistent with identity theory that posits that identities reflect not only how people see themselves but also how they aspire to be seen by others (Stryker & Burke, 2000). Being wasteful or frivolous may not be seen as desirable characteristics and are therefore likely to be mentioned less often, although it is interesting that many respondents did still acknowledge being wasteful at least some of the time. Perhaps this is because wasteful consumer identities are more likely to be cued frequently in mass consumer societies and therefore have a strong influence on every day consumer behaviors, despite perhaps being less important to people (Oyserman, 2009). However, the frequency of reporting of some arguably wasteful consumer identities such as impulsiveness also suggests that such identities may not always be perceived as unacceptable. This suggests a particular focus for campaigning to encourage more pro-environmental behavior through targeting the social desirability of wasteful consumer identities.

The finding that respondents were most likely to describe themselves as frugal consumers suggests that a focus on frugality may be particularly fruitful when engaging with a wider population to promote sustainability. Such a focus is distinctly different from a focus

on environmental protection, and may be particularly beneficial when engaging with consumers who are sceptical about environmental issues and are likely to reject environmental appeals.

A moral identity was consistently associated with pro-environmental behaviors, which is consonant with previous theoretical perspectives and empirical research that place personal morality as a central determinant of such action (de Groot & Steg, 2009; Van der Werff et al., 2013). The current studies add to these findings by demonstrating evidence of a moral consumer identity, suggesting that the mechanism by which personal morality influences behavior is through identity processes: actions are chosen or rejected on the basis of the extent to which they reflect the self (Stryker & Burke, 2000).

Pro-environmental behavior was not only strongly associated with a moral consumer identity, a frugal consumer identity appeared equally, if not more important, for some behaviors. A moral consumer identity was more strongly associated with behaviors such as buying green and fair produce (Study 1), which may be associated with increased costs. Both a frugal and a moral consumer identity were important for behaviors such as energy conservation (Study 1 and 2), which are associated with reduced environmental impact as well as reduced financial costs. These findings appear to contradict existing literature that suggests that financial and moral concerns may be in conflict and that a focus on financial costs and benefits to promote pro-environmental behavior may even be harmful (Bolderdijk et al., 2013; De Groot & Steg, 2009). Our findings suggest that environmental and financial concerns may not necessarily be in conflict. Moral consumer identities are clearly related to, but distinct from, frugal consumer identities and both are associated with pro-environmental behaviors in different ways.

The complexity and multiplicity of consumer identities was evident in a number of different ways in the studies. Frugal and moral identities were positively related and both

were negatively related to wasteful consumer identities. These findings are in line with research demonstrating that materialism is negatively associated with environmental concern and frugality (Gatersleben et al., 2012; Hurst et al., 2013). However, these negative correlations were relatively small, and Study 2 found no negative correlation between moral and wasteful consumer identities (although Study 3 did), suggesting that consumers can hold these potentially conflicting identities simultaneously. The complexity of holding multiple identities was particularly evident in Study 1, where respondents referred to conflicting identities mentioning things they did, as well as the things they did not, but thought they should do in relation to the environment. Given the often conflicting demands of behaving pro-environmentally in a consumerist society, the management of such opposing identities merits greater research attention. For example, does acknowledgement of conflicting identities make all identities equally salient or could it enable the management of more desirable identities?

The findings of Study 3 suggest that a policy that addresses multiple identities may be able to appeal to wider audience increasing its effectiveness. The study showed that a policy that combined a small pecuniary penalty with a pro-environmental change enabled the policy to speak to not only the environmentally-concerned and moral, but also the thrifty and the frugal. A very small financial disincentive worked as a signal that resonated with frugal and thrifty identities, tapping the desire to avoid (any) waste (frugal) and to get value for money (thrifty). Thus the amount of the charge may have been irrelevant for its effect. These insights into the overwhelming success of such a policy (Poortinga et al., 2013) offer potential guidance for future policy. Policies will be interpreted by citizens through the lenses of their identities, and symbols or meanings, which are consonant with salient identities are more likely to lead to behavior change. Furthermore, policies that target multiple identities are more likely to be effective.

Overall the findings showed that consumers acknowledged multiple identities as identity theory would propose (Stryker & Burke, 2000). Further, the identities we examined were associated with a range of pro-environmental behaviors and demonstrated a complex set of motives for action. The evidence from Study 1, that the salience of some identities (though not all) was influenced by the framing of the study, suggests that the context in which identities are managed – and in which decisions on behavior are taken – is also important. This carries implications for research and practice. One implication is that the importance of a moral identity may be somewhat overstated in studies in which an environmental framing is evident. Another is the need for more evidence on the context-dependence of identities related to pro-environmental behavior: is a recycler identity stable across contexts but an energy-saver identity more contextually-sensitive as the current findings found? Is context-independence related to the visibility of the behavior (e.g., recycling versus energy consumption) or to the focus of policy initiatives (cf. in the UK, a policy focus in the last decade on recycling but the interest in energy conservation in the 1970s lapsing until very recently)? An implication for practice is a reminder that context is important not for changing opportunities for behavior but also by altering the salience of different identities.

The findings here point to new directions for future research. The studies showed that frugal consumer identities are associated with pro-environmental behaviors such as energy conservation but not necessarily through environmental motives. In fact, frugal and moral identities are not necessarily associated and are independent predictors of energy conservation. Moreover, they are associated with very different motives for a specific pro-environmental behavior – reusing plastic bags. Wasteful consumer identities were not associated with the behaviors measured in this paper. However, they are likely to be relevant for environmental impact given that such behaviors are associated with the consumption of more than is needed.

To achieve the goals of environmental research in tackling overconsumption and climate change, it is essential that each of these consumer identities is taken into consideration in future research and environmental policy. People adopt the same behavior for different reasons, in ways consistent with their consumer identities. This research suggests that engaging with moral, wasteful, frugal, and thrifty identities of consumers may provide fruitful ways to promote more environmentally sustainable lifestyles.

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Table 1

Reported consumer identities before and after reporting pro-environmental behavior.

Consumer identities	Examples	Overall %	PEB first	PEB after	χ^2
Frugal	I buy … only if I need them	47	44	49	
Bargain hunter	bargain hunter, deal junkie	46	35	54	3.75, $p = .04$
Quality	prefer quality over quantity	45	40	49	
Impulsive	impulsive with…	44	30	54	5.80, $p = .013$
Thrifty	Careful/tight with money	36	35	37	
Hedonic	a shopaholic for …	33	21	42	4.97, $p = .021$
Planner	always research, …make lists	31	23	37	
Recycler	… recycle as much as possible	28	33	25	
Value-for-money	buy items that will last	28	23	32	
Second hand	give clothes to charity	25	30	21	
Waste avoider	don't like waste	23	21	25	
Green	buy green products	23	33	16	3.89, $p = .042$
Loyal	loyal to brand or products	20	16	23	
Local shopper	…prefer shopping locally	17	28	9	6.36, $p = .012$
Energy saver	turn electrical items off	16	33	4	15.39, $p < .001$
Healthy/natural	try to buy fresh food all the time	14	21	9	
Fixer	…mend and make do	11	9	12	
Social/fair	.. donate to charity, buy fair trade	11	14	9	
Non-shopper	hate any type of shopping	10	9	11	
Wasteful aware	shockingly indulgent, use too much	10	9	7	
Stocker	tend to stock up on…	9	7	11	
Gadget addict	gadget addict	8	5	11	
Swayed	easily swayed	7	9	5	
Shopper	like shopping for …	4	0	7	
Trend follower	like the latest styles	1	0	2	

Note. Consumer identities are ranked from most to least frequently mentioned (in overall percentage). Version 1: respondents completed the pro-environmental behavior (PEB) questions first; Version 2: respondents completed the identity questions first. The final column shows significant χ^2 tests only.

Table 2

Consumer identity dimensions – means and factor loadings of consumer identities

	M	Moral 16%	Wasteful 13%	Frugal 12%	Thrifty 11%
Green	3.78	.84	.04	.27	.17
Fair	3.62	.82	.11	.19	.11
Local	4.08	.72	.05	.13	.10
Healthy	4.62	.58	.06	.52	-.02
Recycler	5.69	.56	-.11	.22	.49
Waste avoider	5.80	.46	-.10	.43	.45
Quality conscious	4.46	.43	.33	-.09	-.32
Easily swayed	3.12	.08	.71	-.17	.00
Trend follower	2.32	.16	.70	-.14	-.12
Shopper	3.67	-.02	.67	-.22	-.02
Gadget addict	3.23	.10	.62	-.17	-.01
Impulsive	3.39	.01	.61	-.55	.04
Hedonic consumer	3.98	.01	.58	-.52	.02
Loyal	4.37	.29	.51	.07	-.21
Material	4.04	.00	.50	.05	.04
Planner	4.83	.20	-.15	.81	.16
Budgeter	5.34	.10	-.18	.78	.39
Frugal	4.62	.22	-.13	.73	.14
Energy saver	5.41	.50	-.04	.58	.37
Efficient	4.17	.15	.15	-.05	-.01
Bargain hunter	5.74	-.05	.09	.22	.78
Value seeker	6.20	.04	-.12	.40	.66
Second hand	4.14	.26	-.08	.13	.65
Fixer	4.90	.39	-.06	.34	.47
Hoarder	3.82	.06	.09	-.15	.32

Note. Respondents indicated to what extent each consumer identity applied to them on a 5 point scale: 1(not at all) to 5 (very much so).

Table 3

Reported reasons for refusing or accepting disposable plastic bags: relationship with consumer identities.

	% mentioned	Consumer identities
Reasons for changing behavior		
Cost	33	+ frugal consumers; + thrifty consumers
Prompt	28	
Environment	14	
Better for me	9	
Reasons for not changing behavior		
Do it already	18	+ moral consumers; - wasteful consumers
Forget	4	- moral consumers
Better for me	4	

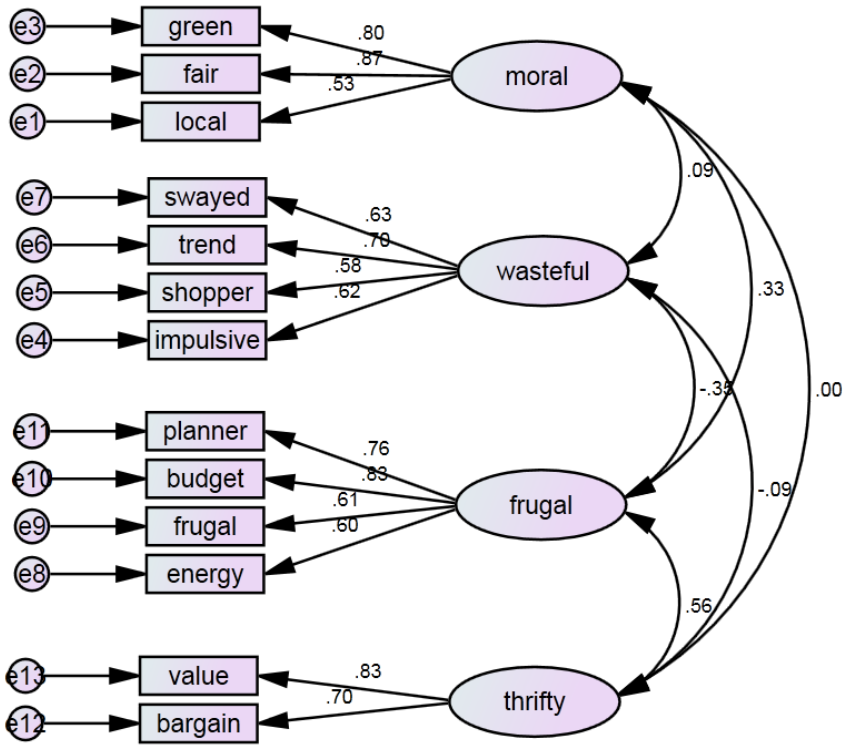

Figure 1. CFA of consumer identity dimensions.