

Consumer Perceptions of the Social vs. Environmental Dimensions of Sustainability

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Abstract

Prior research on sustainable consumption has addressed a variety of issues yet is characterized by mixed results. Researchers have often treated sustainability as a uni-dimensional construct, overlooking important differences and thwarting a better understanding of consumer response. We demonstrate that consumers perceive the social and environmental dimensions of sustainability as psychologically distinct in theoretically and practically important ways. Specifically, consumers associate the social dimension of sustainability more with affective, short-term, and local considerations and the environmental dimension more with cognitive, long-term, and global considerations. We identify and explore these distinctions in a qualitative pilot study, which subsequently motivated development of three hypotheses. We provide evidence supporting these hypotheses in a series of five studies. Our findings enable a re-interpretation of prior equivocal research, serve as a foundation for future research, and provide guidance for how policy-makers can tailor policy and related communication efforts depending on whether the focal issue is related to social versus environmental concerns.

Keywords: social; environmental; sustainability; policy communication; choice; mixed methods

Issues ranging from climate change to the fair treatment of workers have fueled interest in the broad concept of sustainability, leading to a wide variety of initiatives and investments by governments (United Nations 2017) and industry (McKinsey 2014). Likewise, a growing body of academic research addresses a variety of public policy and consumer issues in this context, with many stressing the need for even more research on sustainable consumption (Kotler 2011; McDonagh and Prothero 2014; Prothero et al. 2011; Sheth, Sethia, and Srinivas 2011).

Sustainability has been broadly characterized as having ‘three pillars’ related to economic, social, and environmental concerns (United Nations 2005), akin to the ‘triple bottom line’ approach of measuring firm performance (Elkington 1994). However, academic research operationalizes sustainability in a wide variety of ways and often does not explicitly consider the possible systematic distinctions between these three primary dimensions of sustainability. Similarly, the term ‘sustainability’ has evolved to encompass many different types of activities, and interpretations of exactly what it means vary amongst consumers (Simpson and Radford 2012). Sustainability has also been operationalized in many different ways in the literature (Cotte and Trudel 2009). As a result, many researchers emphasize a growing need for a more nuanced understanding of sustainability’s component dimensions (Chabowski, Mena, and Gonzalez-Padron 2011; Choi and Ng 2011; Cotte and Trudel 2009; Marcus, MacDonald, and Sulsky 2015; Simpson and Radford 2014). For instance, Chabowski, Mena, and Gonzalez-Padron (2011), state a need to, “Distinguish between socially- and environmentally-focused issues to examine the influence of each on marketing outcomes and competitive advantage,” (p. 64, Table 4). Such ambiguity may also pose problems for both consumers and policy-makers, who must grapple with decisions about which sustainability initiatives to prioritize and/or emphasize within their specific contexts.

In response, this research explores potential distinctions between the social and environmental dimensions of sustainability, which are noted as the two dimensions most closely associated by consumers within the broad concept of sustainability (Luchs and Miller 2015; Simpson and Radford 2012). To gain a more complete understanding of how consumers may perceive the social and environmental dimensions of sustainability as distinct, we began with an exploratory qualitative (pilot) study. Based on these results and connections with existing literature, we construct a series of hypotheses that we test in a series of five quantitative studies. We find converging evidence that consumers perceive these two dimensions of sustainability as

psychologically distinct in important ways. A better understanding of these differences advances our current understanding of sustainable consumption, guides future research, and yields practical insights for policy and related communications that can be applied now.

Background

The literature on sustainability and sustainable consumption is characterized by mixed results and inconsistent construct measurement and operationalization. As Cotte and Trudel (2009) note, “the ways in which we have measured this idea has varied greatly. This alone could be responsible for the largely mixed and unclear evidence... (p. 40).” Another systematic review by Pelozo and Shang (2010) focused on the Corporate Social Responsibility (CSR) literature reaches a similar conclusion and notes a wide variety of conceptualizations and operationalizations within and across studies. In fact, the terms CSR and sustainability are often used interchangeably, which serves to further highlight the potential for confusion (for a discussion of the overlap between the terms CSR and sustainability, see Hult 2011). Such complexity and equivocal findings not only present a challenge for academic research, but can also hinder public policy decisions due to the lack of clear, empirical generalizations. We propose that more systematically studying the distinctions between the social and environmental dimensions of sustainability is an important step toward a more coherent and predictable understanding of consumer behavior in this context.

Research Typically Addresses either Environmental or Social Attributes

A systematic review of academic and practitioner articles published between 1971 and 2009 suggests that two of the most commonly studied types of sustainability issues are environmental (e.g., recycling, pollution mitigation) and social (e.g., fair trade, supporting communities) (Cotte and Trudel 2009). Cotte and Trudel’s (2009) review, and our own review of more recent publications, suggests that articles characterized as “sustainability research” often focus on only one of these primary dimensions. For example, the title of Schroeder and Anantharaman’s (2017) research mentions sustainability (“Lifestyle Leapfrogging in Emerging Economies: Enabling Systemic Shifts to Sustainable Consumption”) yet is focused on

environmental issues. In contrast, other authors use the term sustainability to refer broadly to both social and environmental issues, such as Joyner Armstrong, Connell, Lang, Ruppert-Stroescu, and LeHaw (2016) who address both in their article “Educating for Sustainable Fashion: Using Clothing Acquisition Abstinence to Explore Sustainable Consumption and Life Beyond Growth.” Similar variance in the use of the term sustainability is evident across many other research projects, including those focused on environmental issues such as evaluations of or intention to purchase “green” products (Austgulen 2014; Gershoff and Frels 2015; Schäfer, Jaeger-Erben and Bamberg 2012; Schroeder and Anantharaman 2017), participation in recycling and other environmentally friendly activities (Claudy and Peterson 2014; Csutora 2012; DeVincenzo and Scammon 2015; White, MacDonnell, and Dahl 2011; White and Simpson 2013), or water/energy conservation (Heiskanen, Mont, and Power 2014; Phipps and Brace-Govan 2011; Press and Arnould 2009) (for a comprehensive review of the contemporary literature on marketing and environmental sustainability, see McDonagh and Prothero 2014). Meanwhile, other projects addressing sustainability have instead focused on social issues such as those related to fair trade products (Arnould, Plastina, and Ball 2009; Doran 2010; Cotte and Trudel 2009; Leeuw et al. 2014; White, MacDonnell, and Ellard 2012).

Conversely, sustainability is also often studied in an all-inclusive way, such as combining and treating multiple sustainability-related attributes as a unified “sustainable product,” which makes it difficult or impossible to determine whether social and environmental attributes lead to different effects (e.g., Boström and Micheletti 2016; Joyner Armstrong et al. 2016). Even the limited research that more explicitly acknowledges the different dimensions of sustainability has not addressed the consumer-perceived psychological distinctions between different types of sustainability issues (e.g., Marcus, MacDonald, and Sulsky 2015; Sudbury-Riley, Kohlbacher, and Hofmeister 2012; Simpson and Radford 2014). For example, Simpson and Radford (2014) studied the relative level of importance that consumers place on each dimension of sustainability and others have studied how individually held values regarding each dimension can influence the likelihood to engage in or support various types of sustainable behavior (Marcus, MacDonald, and Sulsky 2015). They did not, however, address how consumers might systematically view social and environmental issues in psychologically distinct ways.

In total, prior research has not provided sufficient insight into the specific characteristics of these different dimensions of sustainability in order to explain why consumers respond to

them differently. Our research provides a more direct investigation of the systematic differences between the social and environmental dimensions from the consumer's perspective, which may help to better explain and clarify the differential consumer responses observed in prior research.

Current Research Approach

Given the wide range of possibilities, rather than attempt to identify ex ante which differences between the social and environmental dimensions are most likely, we employ an integrative, mixed methods approach which is advocated to provide a more holistic and complete perspective (Davis, Golicic, and Boerstler 2011). Specifically, we began by approaching this research with qualitative methods and an exploratory mindset in an effort to identify some of the factors most likely to distinguish the social and environmental dimensions of sustainability from the consumer's perspective. Then, we develop a set of three hypotheses motivated by our qualitative findings. We then provide supporting evidence for these hypotheses in a series of five quantitative studies.

Pilot Study: Exploring Consumer Perceptions of Social and Environmental Forms of Sustainability

The main purpose of this study was to explore how social versus environmental attributes may be psychologically distinct through a qualitative analysis of consumers' open-ended responses explaining a product choice in a scenario involving a trade-off between social and environmental attributes.

Participants, Procedure, and Measures

Community members from the southeastern United States were invited via email to participate as part of an unrelated, online market research survey. A total of 657 people clicked on the survey link, with 422 completing the two survey tasks that serve as the basis for this analysis (67% female; age range: 18 to over 85; 77% holding four year college degree or higher; median annual household income range: \$50,001 to \$75,000).

Participants were asked to choose between two hypothetical chocolate bars. One of the chocolate bar options was promoted as relatively more socially responsible (e.g., community support and fair labor practices). The other chocolate bar option was described as relatively more environmentally responsible (e.g., efforts to minimize pollution and increase energy efficiency). See Appendix for full study details. These distinctions between the social and environmental options are consistent with prior literature (e.g., Lindgreen et al. 2009; Simpson & Radford 2014) and our own review of actual products. Participants were told that these chocolate bars were otherwise identical (i.e., that they would taste the same and cost the same amount of money to purchase). After reading the scenario description, participants were then asked to indicate which of the chocolate bars they would choose: the socially responsible chocolate bar or the environmentally responsible chocolate bar. On the subsequent page, participants were asked to answer an open-ended question explaining their choice.

Results and Discussion

The environmentally responsible option was only marginally more likely to be chosen than the socially responsible option ($n = 230$ (54.5%) vs. $n = 192$ (45.5%), respectively; $\chi^2(1) = 3.42, p = .064$), indicating that participants were roughly split in terms of sustainability-type preference.

The open-ended responses were analysed using an exploratory approach (Strauss and Corbin 1998). Responses were split into social and environmental choices and then individually coded to identify the most commonly mentioned themes within each choice. Following Spiggle's (1994) framework, themes were continually challenged and discussed by the team of researchers to ensure robustness of the categories and constructs. Analysis continually tacked back and forth between the literature and the data to enable the development of theoretically rich categories (Lindgreen et al. 2009; Spiggle 1994). Emerging from the analysis were distinct patterns of justification that individuals used to rationalize their selections. Beyond the obvious distinction of a focus on people versus planet, three themes emerged from these explanations that distinguished the two dimensions: (1) affective versus cognitive, (2) short-term versus long-term, and (3) local versus global. These themes were then used as a template to code respondents who stated a clear preference for either social or environmental responsibility. Each response was

evaluated and coded with respect to each of the three themes. Thus, a single response could be coded as reflecting more than one theme. Responses that were ambiguous with respect to an individual theme were designated as unclear (See Figures 1A-C for a percentage breakdown of the coding by sustainable product choice). A more in-depth description of each theme along with representative quotes from participants follows.

Affective versus Cognitive

Social responsibility tended to be characterized through more affective or emotive language, whereas concern about the environment was often described in more cognitive or analytical terms. Social sustainability was found to be a more affective choice primarily due to its ability to directly impact people's lives. Forty-nine percent (vs. 27%) of respondents who selected social (environmental) justified their choice using terms this research categorized as affective (Figure 1A). Affective appeals are grounded in the emotional, experiential side of consumption (Albers-Miller and Stafford 1999). Therefore, responses were categorized as affective when respondents described social issues using impassioned language such as "feel," "concern," "care," "exploit," "hope," "injustice," or sought to indicate emotion through capitalizing words and adding exclamation marks in their responses. The following are representative quotes indicative of an affective response.

Emotions associated with PEOPLE affect me more than with pollution, which occurs every day.

I care more about the human element than the natural one. There are a ton of "green" companies out there as it's kind of the cool/hip thing at the moment, but I feel that fair labor is something that gets swept under the rug. I see that becoming a more and more important issue in the next 3-5 years.

In contrast, environmental sustainability appealed to those seeking the more cognitive, objective choice. Forty-two percent (vs. 31%) of environmental (social) respondents were categorized as providing an analytical justification for their choice (Figure 1A). Cognitive or

rational appeals assume the consumer is making logical decisions based on reasoned arguments (Albers-Miller & Stafford, 1999). Therefore, responses were categorized as cognitive when individuals described environmental issues using calculated language such as “think,” “causes,” “impact,” “outcome,” and “implies.”

Social issues are more subjective. So, what they might consider socially responsible, I might not. But I think that environmentally responsible is more objective. Minimizing means less and efficient means efficient. That's why I would choose environmentally responsible.

Environmentally responsible sounds like it's based on environmental science. Social responsible may be based on value judgments that I may or may not agree with. (Probably I'd agree with them, but it sounds more up for debate.)

Socially responsible to me is a subjective term. Environmentally is more specific to me regarding damage to the environment or fisheries. For example, I would rather buy from a socially irresponsible captain of an environmentally friendly boat than from a socially responsible captain of an environmentally irresponsible boat. Think about it.

Short-Term versus Long-Term

This theme identifies the timing and/or duration of impact as an important distinction between two forms of sustainability. Individuals oriented towards the present tend to focus on meeting more immediate needs (Bergadaà 1990). Eighty-seven percent (vs. 12%) of social (environmental) respondents were categorized as providing short-term justifications due to their emphasis on the more immediate impact in the justifications (Figure 1B). Responses were categorized as short-term when individuals viewed the issue as more immediate. The following quotes illustrate the responses of individuals focused on the short-term impact of the choice.

Has a more direct and immediate effect on people, though the environmental factors are also important.

Both are important to me, but the first (sociall[y] responsible) seems to have a more immediate, direct and apparent impact on people's everyday lives.

It took me a long time to decide between the two. On the one hand, if we don't make environmentally-conscious choices, there won't be much of a planet for anyone to live in. On the other, if we treat workers poorly, that hurts the people more directly. I guess it's the shorter-term consequences that led me to pick the socially responsible chocolate bar, the fact that workers now would benefit.

Meanwhile, consumers who chose the environmentally responsible option provided reasons that focused on long-term effects. Sixty-eight percent (vs. 9%) of environmental (social) respondents were categorized as providing long-term justifications due to their emphasis on the extended impact in the justifications (Figure 1B). This included concern for future generations, the need to consider the long-term use of resources, and allowing time for the environment to heal.

Social practices affects only several generations of people at the time in a local area but environmental practices can affect the whole earth, in which everyone lives in, for thousands of years.

Because although social responsibility is a great thing to aspire to, I'm generally more worried about the long-term future of the planet and humanity as a whole than I am about the short-term plight and boo-hoo stories of local workers being put out of a job or perhaps not making as much money as they should...

Complicated...at first I said social since thinking that choosing the opposite would mean people some people might suffer. I changed my choice to environmentally responsible, however, because long term, if the environment is destroyed, more people will suffer.

Local versus Global

Reasons for choice also differed in terms of highlighting the local or global impact of the choice. An event is considered psychologically near when it is part of one's direct experience (Trope and Liberman 2010). As such, responses were categorized as local when individuals highlighted the importance of the more micro-level or local impact. Seventy percent (vs. 28%) of social (environmental) respondents focused on issues that were categorized as local (Figure 1C). This included specific local concerns, local community and the impact on local people. The quotes that follow are representative of responses that focused on the local impact of the choice.

Although I feel it is important to be environmental friendly, I am a firm believer in supporting local communities and local businesses.

I'm more interested in supporting local communities than the environment.

I think that it is more important right now in this poor economy to support local merchants and farmers as much as possible rather than concerning ourselves with the environment.

In contrast, other choices were more focused on broader, global factors. Forty-seven percent (vs. 25%) of environmental (social) respondents referenced the broader impact of the environment in justifying their decision (Figure 1C). Many mentioned terms such as more comprehensive, widespread, and global.

This will have a greater impact on a larger amount of people. It addresses more global issues compared to the social choice.

Although the socially responsible chocolate bar is a good thing for the local economy, the environmentally responsible chocolate bar promotes a healthy environment that benefits everyone, not just locally.

Environmental sustainability is a widespread issue that people need to be more aware of whereas social responsibility only affects certain local markets.

Finally, local versus global extends the distinction between the two forms of sustainability to the spread of impact. In general, social respondents saw the importance of impact in a particular community, environmental respondents sought a broader impact.

The results from the pilot study provide preliminary evidence that social and environmental forms of sustainability may differ in important theoretical ways. Socially responsible forms of sustainability were regarded as more affective, short-term, and local in scope. Environmental forms of sustainability were regarded as more cognitive, long-term, and global in scope. Figure 2 summarizes these themes. Next, we derive specific hypotheses motivated by the findings from the pilot study.

Hypotheses

In the sections that follow, we provide a series of hypotheses based on our qualitative themes. We also relate these hypotheses to established research streams, constructs, and influential findings in the consumer behavior literature. Specifically, we discuss the theme of affective versus cognitive with respect to extant research on affect and cognition, the theme of short-term versus long-term with respect to research on temporal distance, and the theme of local versus global with respect to research on spatial distance. By establishing these connections to extant consumer behavior literature, we can more fully appreciate the potential for systematic differences in the ways that consumers may respond to social versus environmental attributes. And, by relating our research to a broader network of knowledge about consumer behavior, we endeavor to more clearly illustrate how our findings provide important insights for policy-making and practice.

Theme 1: Affective versus Cognitive

We submit the following hypothesis based on the qualitative theme of affective versus cognitive, which characterizes choice of the social product as driven more by emotional

considerations, whereas the choice of the environmental product is driven more by analytical considerations (Figure 2).

Hypothesis 1: The social (vs. environmental) dimension of sustainable consumption is more directly associated with affect (vs. cognition).

Some of the most well-known findings in consumer behavior and psychology are based on dual process theories, which posit that consumer behavior can be driven by two fundamentally distinct processes (e.g., Epstein 1994; Kahneman 2003; Zajonc 1980). Though there are several variants, these theories typically characterize one form of processing as more intuitive, experiential, and/or affective, whereas the other form is more deliberate, analytical, and/or cognitive (Novak and Hoffman 2009). For example, Cognitive-Experiential Self-Theory “distinguishes an experiential system that is intimately associated with affect (but not to the exclusion of all nonaffective cognitions), that encodes experience in the form of concrete exemplars and narratives, and that operates according to a set of inferential rules that differ from those of a relatively affect-free, abstract, analytical, rational system” (Epstein 1994, p. 713). The type of processing used by consumers has been shown to exhibit important influences on a host of issues, including judgments, decision-making, and product choice. To illustrate, consider a study by Shiv and Fedorikhin (1999), in which they demonstrate that product choice can be influenced by the decision basis; that is, whether the decision is based on affective versus cognitive factors. Specifically, they found that relatively more affect-laden options (chocolate cake) were chosen more frequently when the consumer’s decision was based on affective factors. In contrast, options that were more cognitively appealing (fruit salad) were chosen more frequently when the consumer’s decision was based on more cognitive factors.

Within the current context, we propose that social attributes may be more affect-laden and associated more with emotional factors while environmental attributes may be more related to cognitive or analytical factors. As a consequence, social and environmental attributes may translate to consumer behavior in systematically different ways that can be predicted based on prior literature on affect and cognition.

Theme 2: Short-Term Versus Long-Term

Our second hypothesis is based on the qualitative theme of short-term versus long-term, which characterizes choice of the social product as driven more by short-term considerations, whereas the choice of the environmental product is driven more by long-term considerations (see Figure 2).

Hypothesis 2: The social (vs. environmental) dimension of sustainable consumption is more directly associated short-term (vs. long-term) considerations.

Prior research identifies temporal concerns (e.g., whether an individual is more focused on the present vs. the future) as a critical driver of consumer behavior, with the ability to influence motivations, attitudes, and types of products consumed (Bergadaà 1990). For instance, construal level theory links the mental construal of situations to psychological distance, which is defined as “a subjective experience that something is close or far away from the self, here, and now” (Trope and Liberman 2010, p. 440). There are several types of psychological distance, including temporal distance and spatial distance. With respect to temporal distance, construal level theory proposes that near future actions are thought of in lower-level, more concrete terms (e.g., issues related to feasibility), relative to distant future actions, which are thought of in higher-level, more abstract terms (Liberman and Trope 1998).

When it comes to sustainable consumption and temporal distance, the effects of social attributes may be easier to visualize as having an immediate, feasible impact that is consistent with a more concrete, short-term perspective. Conversely, environmental attributes may be perceived in a more abstract sense because that is more consistent with a long-term perspective. Indeed, prior research suggests a positive correlation between an individual’s tendency to focus on long-term outcomes (i.e., consideration of future consequences) and environmentally conscious behavior (Joireman et al. 2001; Joireman, Van Lange, and Van Vugt 2004). Relevant to the current context, we propose that social attributes may be associated more with short-term considerations, while environmental attributes may be associated more with long-term considerations. Thus, social and environmental attributes may impact consumer behavior in ways that can be specified based on prior literature on temporal distance and construal level.

Theme 3: Local Versus Global

Our third hypothesis is based on the qualitative theme of local versus global, which characterizes choice of the social product as driven more by local considerations, whereas the choice of the environmental product is driven more by global considerations (Figure 2).

Hypothesis 3: The social (vs. environmental) dimension of sustainable consumption is more directly associated with local (vs. global) considerations.

Like temporal distance, spatial distance is a form of psychological distance that has been shown to have important implications for consumer behavior. Much of the relevant spatial distance literature is rooted in construal level theory, and suggests that lower spatial distance is associated with more concrete thinking, while greater spatial distance is associated with more abstract thinking (Fujita et al. 2006; Henderson et al. 2006). As it pertains to sustainable consumption, social attributes may be associated with more localized effects in a specific area, which is more in line with nearer spatial distance and related to concrete thinking. On the other hand, environmental attributes may be associated with global effects that occur over a broader area, which is more in line with greater perceived spatial distance and related to abstract thinking. Thus, social and environmental attributes may impact consumer behavior in ways that can be specified based on prior literature on spatial distance and construal level theory.

Studies 1A and 1B: Initial Tests of Hypotheses

Studies 1A and 1B provide initial support for our hypotheses by using a direct approach in which we asked participants to rate each theme from the pilot study in terms of its relative association with the social versus environmental dimensions of sustainability. In Study 1A, the social and environmental dimensions of sustainability were represented with text; in Study 1B, these dimensions were represented with symbols.

Participants, Procedure, and Measures

Study 1A

Participants in Study 1A were 104 undergraduate students (69% female) receiving extra course credit for participation. Study 1A began with participants reading a short introduction explaining that they would be providing ratings related to the concept of sustainability, where sustainability refers to a diverse set of issues, including both social issues and environmental issues. In contrast to the pilot study, we did not include descriptors highlighting specific examples of types of socially or environmentally responsible activities. Thus, participants in this study were free to base their judgments fully on their own conceptualizations of the social and environmental sustainability dimensions.

Next, participants were asked to answer the following question: ‘Which of the following dimensions of sustainability do you associate more with [theme descriptor] issues?’ for each of the six qualitative theme descriptors identified in the pilot study. Consistent with prior research (e.g., Shiv and Fedorikhin 1999) we used the descriptors ‘emotional’ and ‘rational’ to represent the affective-cognitive theme in the questionnaire because we believe these terms are more understandable to a general audience. For example, “Which of the following dimensions of sustainability do you associate more with emotional issues?” Responses to each question were entered on a seven-point scale with anchors of “definitely social” and “definitely environmental” and a midpoint of “both equally.” The order of the six questions was randomized and the side of the scale (left/right) on which the social and environmental anchors were presented was

counterbalanced. Following these questions, participants responded to a series of unrelated questions and provided basic demographic information.

Study 1B

For Study 1B, 60 participants were recruited via Amazon's Mechanical Turk service (60% male; mean age = 38; age range: 23-73). The procedure for Study 1B was similar to the one employed in Study 1A, except that sustainability was not mentioned in the introduction, nor were participants explicitly asked to provide ratings for each theme descriptor with respect to the social and environmental dimensions of sustainability. Instead, participants were told that they would be rating the degree to which they associated the theme descriptors with either of two symbols (see Figure 3B), each of which was intended to convey the dimensions of either social or environmental sustainability visually. In other words, while the questions were the same as those used in Study 1A, instead of using the response anchors of "definitely social" and "definitely environmental", responses were anchored by the two symbols, each intended to represent either social or environmental responsibility. As a validation check after the other ratings were completed, participants also rated the degree to which they associated each symbol with either social or environmental sustainability.

Results

Study 1A

Responses to the social versus environmental scales were coded to range from -3 (definitely social) to 3 (definitely environmental) with zero as a midpoint. The data were analysed through a series of six t-tests comparing the mean ratings for each of the theme descriptors to the scale midpoint of zero. Negative values that are statistically different from zero represent a relative association with the social dimension of sustainability, whereas positive values that are statistically significant from zero represent a relative association with the environmental dimension. Each test yielded a statistically significant result as seen in Figure 3A, with the social dimension of sustainability being relatively more associated with affective ($M = -$

1.37, $t = -9.55$, $p < .001$), short-term ($M = -.89$, $t = -6.83$, $p < .001$), and local issues ($M = -.49$, $t = -4.04$, $p < .001$). On the other hand, the environmental dimension of sustainability was relatively more associated with cognitive ($M = .42$, $t = 2.92$, $p < .01$), long-term ($M = .96$, $t = 7.00$, $p < .001$), and global issues ($M = .74$, $t = 5.69$, $p < .001$). Next, we conducted a series of three paired sample t-tests of the ratings of the two descriptors related to each theme (i.e., a within-subject comparison of the emotional and rational items) to determine if there were significant differences across the social and environmental dimensions when it comes to their relative levels of association with each of the identified themes. As seen in Figure 3A, the relative ratings were significantly different for all three themes: affective vs. cognitive ($M = 1.79$, $t = 8.01$, $p < .001$), short-term vs. long-term ($M = 1.85$, $t = 8.40$, $p < .001$), and local vs. global ($M = 1.23$, $t = 6.84$, $p < .001$).

Study 1B

The same set of analyses were completed for Study 1B with the same overall pattern of results, as illustrated in Figure 3B. Specifically, responses were coded to range from -3 [social symbol] to 3 [environmental symbol] with zero as a midpoint. First, we confirmed that participants associated each symbol with the intended dimension of sustainability. As anticipated, participants associated the [social symbol] with social sustainability, ($M = -2.37$, $t = -18.83$, $p < .001$) and the [environmental symbol] with environmental sustainability, ($M = 2.70$, $t = 31.15$, $p < .001$). Next, the data were analysed through a series of six t-tests comparing the mean ratings for each of the theme descriptors to the scale midpoint of zero. With one exception, each test yielded a statistically significant result as seen in Figure 3B, with the [social symbol] being relatively more associated with affective ($M = -1.92$, $t = -13.03$, $p < .001$), short-term ($M = -.48$, $t = -2.78$, $p < .01$), and local issues ($M = -.63$, $t = -2.83$, $p < .01$). On the other hand, the [environmental symbol] was relatively more associated with long-term ($M = .53$, $t = 2.33$, $p < .05$), and global issues ($M = 1.43$, $t = 7.96$, $p < .001$). In this study, neither symbol was more associated with the theme of cognitive, ($M = .13$, $t = .64$, $p = ns$). Similar to Study 1A, we conducted a series of three paired sample t-tests to contrast the ratings of the two descriptors related to each theme. As seen in Figure 3B, the relative ratings were significantly different for all three themes, consistent with Study 1A and our hypotheses: affective vs. cognitive ($M = 2.05$,

$t = 6.85, p < .001$), short-term vs. long-term ($M = 1.02, t = 2.65, p \leq .01$), and local vs. global ($M = 2.07, t = 6.47, p < .001$).

Discussion

In studies 1A and 1B, we directly asked participants to rate their relative association of each qualitative theme observed in the pilot study with the social and environmental dimensions of sustainability. Overall, the results coincide with our pilot study and provide initial support for our hypotheses in that participants rated the social dimension of sustainability as relatively more affective, short-term, and local. In contrast, the environmental dimension of sustainability was rated as relatively more cognitive, long-term, and global. Notably, the pattern of results across both Studies 1A and 1B was consistent (with only a single exception) regardless of whether the social and environmental dimensions of sustainability were communicated via simple text labels or symbols (Figure 3A and 3B). Across the 18 tests conducted, all were statistically significant with the exception of the theme descriptor used to measure cognition (“rational”) which was associated more with environmental sustainability when a text label was employed, but was not associated with either dimension when symbols were used. However, even when symbols were used, participants did still believe that social sustainability (vs. environmental) was relatively more affective (vs. cognitive) as indicated by the statistically significant mean score difference, and in support of hypothesis 1. Taken together, this pattern of results suggests that the differences in the associations observed for the social and environmental dimensions of sustainability are inherent to these dimensions and not dependent on how each dimension is communicated or described.

Additional Tests of Hypotheses

In the studies that follow, we conduct additional tests of our hypotheses in ways that draw connections to established constructs in the consumer behavior literature. Specifically, in Studies 2A and 2B, we test hypothesis 1 by investigating the relationship between the type of sustainable product chosen (socially vs. environmentally responsible) and the decision basis (i.e., whether the decision was based on affective vs. cognitive factors; Shiv and Fedorikhin 1999). Related to

hypotheses 2 and 3, recent work suggests that spatial and temporal distance are often perceived as moving together; that is, when spatial distance is perceived to be short (long), temporal distance is also perceived to be short (long) (Yan 2014). Given this correspondence and that both constructs are associated with overlapping predictions from the construal level theory literature, we collectively test hypotheses 2 and 3 in Study 3 by examining the relationship between the type of sustainable product chosen and an individual difference measure of chronic construal level (i.e., the tendency of an individual to think concretely or abstractly). This account is also supported in part by emerging work suggesting that consumers in a more abstract (vs. concrete) mindset respond more favorably to environmentally responsible products (Goldsmith, Newman, and Dhar 2016).

Studies 2A and 2B: The Relationship Between Decision Basis and Choice of Pro-Social Versus Pro-Environmental Product Attributes

The objective of studies 2A and 2B was to test the theme of affective versus cognitive identified in the pilot study, and supported by studies 1A and 1B. Specifically, we looked at the relationship between type of sustainable product choice (environmentally responsible vs. socially responsible) and a measure of decision basis (Shiv and Fedorikhin 1999), which captures the extent to which a decision was based on affective relative to cognitive factors. Our prediction was that the likelihood of choosing the option with pro-social (pro-environmental) attributes would be associated with a more affective (cognitive) score on the decision basis measure.

Participants, Procedure, and Measures

Participants in study 2A were 110 undergraduate students who received extra course credit for participation (66% female). Participants in study 2B were 121 participants living in the United States and were recruited from Amazon's Mechanical Turk service (46% female; mean age = 34; age range: 18 to 65). The procedure and measures were the same for both studies. We ran two studies using two different samples to test for generalizability. The study began with a brief outline of social and environmental forms of sustainability. For example, social responsibility was described as being about issues that affect workers (e.g., ensuring fair wages

and treatment of the people who provide the raw materials and products), consumers (e.g., ensuring that products provide real value and do not harm consumers), and communities (e.g., ensuring the development of healthy, productive and rewarding communities). Environmental responsibility was described as being about issues related to natural resources (e.g., ensuring the efficient use of energy and raw materials and enabling recycling), climate (e.g., ensuring clean air, water and land by minimizing pollution), and ecosystems (e.g., ensuring diverse and healthy plants and wildlife).

Participants were then presented with a product choice scenario (chocolate bars) based on the one used in the pilot study. After reading the scenario description, participants were then asked to indicate which of the chocolate bars they would choose: the socially responsible chocolate bar, the environmentally responsible chocolate bar, or neither chocolate bar. Upon making a choice, participants completed the decision basis scale (Shiv and Fedorikhin 1999) (study 2A: $\alpha = .83$; study 2B: $\alpha = .81$) to assess the degree to which the choice was cognitively (vs. affectively) based. See Appendix for full study stimuli and measures.

Results

Study 2A

A small number of participants choosing neither option ($n = 6$) were excluded from the main analysis. Among participants making a product choice in this student sample, the socially responsible option was only marginally more likely to be chosen than the environmentally responsible option ($n = 61$ (58.7%) vs. $n = 43$ (41.3%), respectively; $\chi^2(1) = 3.12, p = .078$). Again, this suggests a roughly equal distribution of choice across both types of sustainable options.

We averaged the decision basis items to create an aggregate measure such that higher scores reflected a more cognitively (vs. affectively) based decision. A logistic regression of choice (1 = environmentally responsible; 0 = socially responsible) revealed a significant effect of the decision basis measure ($\beta = .31$, Wald $\chi^2(1) = 3.92, p = .048$, OR = 1.37) such that higher scores on the decision basis scale (i.e., a more cognitive decision basis) were associated with a higher likelihood of choosing the environmentally responsible option. In contrast, lower scores

on the decision basis measure (i.e., a more affective decision basis) were associated with a higher likelihood of choosing the socially responsible option.

Study 2B

Four participants who chose neither option were excluded from the analysis. In this online sample, the socially responsible option was chosen more often than the environmentally responsible option ($n = 70$ (59.8%) vs. $n = 47$ (40.2%), respectively; $\chi^2(1) = 4.52, p = .033$). A logistic regression of choice (1 = environmentally responsible; 0 = socially responsible) on an average of the decision basis items once again revealed a significant relationship between the two variables ($\beta = .31$, Wald $\chi^2(1) = 4.22, p = .040$, OR = 1.37) such that the environmentally responsible option was more likely to be chosen by participants who indicated a more cognitive decision basis whereas the socially responsible option was more likely to be chosen by participants who indicated a more affective decision basis.

Discussion

In Studies 2A and 2B, we found that a more affective (cognitive) decision basis was associated with greater likelihood of choosing the socially (environmentally) responsible product option. In other words, the choice of pro-social product attributes was based more on affective thinking, whereas choice of pro-environmental attributes was based more on cognition. Overall, these results support hypothesis 1.

Study 3: The Relationship Between Construal Level and Choice of Pro-Social Versus Pro-Environmental Product Attributes

The purpose of study 3 was to simultaneously test the themes of short-term versus long-term and local versus global. Specifically, we looked at the relationship between type of sustainable product choice (socially responsible vs. environmentally responsible) and a measure of construal level (Liberman and Trope 1998), which measures individual differences in the tendency to engage in concrete versus abstract thinking. Our prediction was that the likelihood of

choosing the option with pro-social (pro-environmental) attributes would be associated with a more concrete (abstract) score on the construal measure.

Participants, Procedure, and Measures

Fifty-eight undergraduate students (53% female) participated in this study in exchange for extra course credit. The primary task began with a product choice scenario similar to the previous studies, with options to choose the socially responsible, environmentally responsible, or neither chocolate bar. As in previous studies, participants were informed that these chocolate bars were otherwise identical in terms of attributes such as taste and price. As a measure of their chronic construal level, participants completed a 19-item version of the behavior identification form (BIF) (Vallacher and Wegner 1989) as adapted by Liberman and Trope (1998). Participants also responded to a series of unrelated questions and provided basic demographic information. See Appendix for full study stimuli and measures.

Results

Of the 58 participants, four chose the neither option and were excluded from the main analysis. Among the remaining 54 participants who made a choice, there was no significant difference between the number choosing the social ($n = 29$ (53.7%)) and environmental ($n = 25$ (46.3%)) options ($\chi^2(1) = .30, p = .59$), suggesting that both options were equally likely to be chosen. As expected, however, choice did depend upon participants' construal level. We created a measure of construal by summing the items of the BIF that indicated a high level/abstract construal (each coded as a 1) and the items indicating a low level/concrete construal (coded as 0). We regressed choice (1 = environmentally responsible; 0 = socially responsible) on this summed scale and found that the likelihood of having chosen the environmentally (socially) responsible product increased as construal level became higher level/more abstract (lower level/more concrete) ($\beta = .15, \text{Wald } \chi^2(1) = 4.09, p = .043, \text{OR} = 1.16$).

Discussion

As anticipated, construal level predicted which type of sustainable product was chosen, with higher (lower) construal being associated with environmentally (socially) responsible product choice. This result is consistent with the overall nature of and predictions based on hypotheses 2 and 3. Additionally, this finding is in line with evolving work linking abstract construal to more favorable responses to environmental sustainability (Goldsmith, Newman, and Dhar 2016; Yang et al. 2015).

General Discussion

Using an integrative, mixed method approach, this research demonstrates that two of the primary dimensions of sustainability—social and environmental—differ in theoretically and practically meaningful ways. The pilot study led to the development of three hypotheses distinguishing between the social and environmental dimensions of sustainability: (1) affective versus cognitive, (2) short-term versus long-term, and (3) local versus global. Specifically, the social dimension of sustainability is hypothesized to be perceived by consumers as being associated more with affective, short-term, and local factors, whereas the environmental dimension of sustainability is hypothesized to be regarded by consumers as more cognitive, long-term, and global (Figure 2). Follow-up studies found support for these hypotheses via linkages to established constructs from the consumer behavior literature on affect/cognition (decision basis; Shiv and Fedorikhin 1999) and psychological distance (construal level theory; Liberman and Trope 1998; Trope and Liberman 2010).

Collectively, these findings suggest that consumer advocacy and policy-making decisions—from what benefits to emphasize in communications to what initiatives to prioritize—should intentionally consider the specific dimension of sustainability being addressed. In the sections that follow, we more clearly delineate the implications of our results for research, policy, and practice.

Implications for Researchers

Beyond contributing generally to the emerging literature in support of adopting a multidimensional treatment of sustainability that more explicitly compares its component dimensions (Chabowski, Mena, and Gonzalez-Padron 2011; Choi and Ng 2011; Marcus, MacDonald, and Sulsky 2015; Simpson and Radford 2014), our work also provides a foundation for re-interpreting prior equivocal research and for guiding future research.

Reinterpreting Prior Research

Better understanding these differences across the social and environmental dimensions of sustainability provides a clearer lens for disentangling some of the mixed results in prior research on sustainability. For instance, Cotte and Trudel's (2009) review of prior research on sustainable consumption suggests that some types of consumer responses may systematically differ for social and environmental attributes (Cotte and Trudel 2009, Figures 16-18), yet does not identify why this occurs. In the articles reviewed by these authors, studies that used "willingness to change behavior" as the outcome variable exhibited mixed results depending on whether the focal dimension of sustainability was social or environmental; in particular, disproportionately more studies suggest that consumers are more willing to change their behavior in the context of environmental issues relative to the context of social issues. However, this apparent greater propensity to change behavior in the context of environmental issues did not exist to the same degree for studies that used willingness to pay (WTP) as the response variable. Viewed in light of our current results suggesting that the environmental dimension of sustainability is associated more with cognition, this could imply that responses measured in the environmental context might be accompanied by more analytical processing which may increase the consideration of financial consequences and could potentially explain why the increased willingness to change behavior in the context of environmental (vs. social) issues was not observed in studies measuring WTP. Indeed, previous research supports this notion based on findings that more cognitive or analytical processing could be associated with more budget conscious decisions (e.g., less susceptibility to impulse purchasing; Novak and Hoffman 2009) and that preferences

can differ depending on how they are measured (e.g., preference reversals when comparing measures of choice vs. WTP; Irwin et al. 1993). However, prior research also implies that more abstract construals are associated with greater adherence to societal norms or values (Eyal et al. 2009), such as environmental concern, which could potentially lead to less sensitivity to costs associated with environmental sustainability (i.e., less variation in WTP)¹. Testing these competing propositions about the relationship between the environmental dimension of sustainability and budgetary concerns (WTP) could be a fruitful avenue for future research.

Areas for Future Research

One promising area for future research would be to examine how the different perceptual associations for social and environmental dimensions of sustainability could impact consumer inference-making about other brand, company, or product attributes. To illustrate, consider research suggesting that consumers use information about a company's or product's relative sustainability to infer information about other, unknown attributes. For example, Luchs et al. (2010) found that consumers use information about a product's sustainability performance to infer its level of performance on attributes related to gentleness and strength. More recently, Pelozo, Ye, and Montford (2015) found that consumers use information about a company's sustainability-related reputation to make inferences about the healthiness of their food products. Notably, the studies by Luchs et al. (2010) emphasized both social and environmental issues at the same time in their experimental stimuli, whereas the studies by Pelozo, and Ye, Montford (2015) primarily emphasized social responsibility issues. Given the distinctions between the social and environmental dimensions of sustainability identified in the current research, future research could examine how varying the type of sustainability emphasized could impact consumer inferences in the context of these previous studies as well as for other types of attributes. For example, future research could test if the type of product sustainability emphasized could impact inferences about a brand's overall personality, or the "set of human characteristics associated with a brand" (Aaker 1997, p. 347). Specifically, based on the finding of an affective versus cognitive distinction between the social and environmental dimensions, one might expect that high performance in terms of environmental responsibility would be more

¹ We thank an anonymous reviewer for this suggestion.

readily transferred to more cognitive brand personality attributes (e.g., perceived brand competence). In contrast, strong social responsibility might be more readily used to infer information about more affective brand personality attributes (e.g., perceived excitement).

Furthermore, although we have identified three clear distinctions between the social and environmental dimensions of sustainability, this is not intended to be an exhaustive list and opportunities for future inquiry remain. For example, future research may do well to look more closely at the individual themes and distinctions identified here (e.g., examining the specific types of affect or emotions that may be most readily evoked by social (or even environmental) issues). In addition, future research may wish to investigate specific relationships between the dimensions of sustainability and the types of psychological distance underlying construal level. For instance, while our research suggests relative differences for social and environmental dimensions of sustainability across the temporal (short-term vs. long-term) and spatial (local vs. global) forms of psychological distance, it would be interesting to examine relationships with other forms of psychological distance such as social distance and uncertainty.

Additionally, future research may identify additional issues and consumer behavior constructs to consider depending on the type of sustainability being researched. One possibility would be to look at how the different types of values held by an individual (e.g., Schwartz 1992) are related to their relative levels of concern and behavior regarding social versus environmental forms of sustainability (cf. Karp 1996). Further, while we have discussed social and environmental dimensions throughout, we do not intend to suggest that all research that is sustainability-related needs to consider both. There are a wide variety of reasons why researchers will want to continue addressing specific issues and dimensions of sustainability on their own. Therefore, a better understanding of the distinctions between the different dimensions of sustainability can serve as a backdrop to help focus the design and interpretation of future research.

Implications for Policy and Practice

Understanding how the social and environmental dimensions of sustainability are psychologically distinct to consumers is important for both policy-makers and practitioners. We illustrate some of these implications below, with an emphasis on examples related to policy.

Matching Promotional Appeal to Type of Sustainability

One implication from this research is that policy implementation decisions, such as how to communicate policies and motivate behavior change, may need to consider the level of “fit” between promotional messaging used and the particular dimension of sustainability being highlighted. Prior research suggests that when the messages used in promotions “fit” with consumers’ preexisting perceptions, this can increase processing fluency and lead to more positive evaluations (Cesario, Grant, and Higgins 2004). For example, our results suggest that consumers tend to evaluate social (environmental) issues more affectively (cognitively). As such, social policies might be more persuasively promoted by emphasizing affective appeals, whereas environmental policies may be more persuasively promoted by utilizing more cognitive appeals. This may be especially true for situations where consumer involvement is expected to be relatively low (e.g., less controversial issues or more ‘routine’ communications) and therefore more influenced by the level of fit and the resulting impacts on ease of processing (Wang and Lee 2006).

Emphasizing the Full Spectrum of Sustainability Benefits

In addition, there may be situations where it is more persuasive to utilize a more comprehensive sustainability message. For instance, consider controversial policies addressing global warming and other environmental issues. Our results suggest that these issues would primarily be perceived by consumers as cognitive, relevant for the long-term, and benefiting distant others. Policy incentives or messages that coincide with these issues more naturally associated with environmental responsibility may be complemented by efforts to also emphasize more emotion-laden, near term, and local benefits of the environmental policy which are relatively less associated with the environmental dimension of sustainability. Addressing the full

spectrum of sustainability benefits could provide a more comprehensive and higher quality argument, which could be especially persuasive when dealing with controversial or other high involvement policy situations. Indeed, prior research on dual process models of persuasion (e.g., Elaboration Likelihood Model) suggest that argument quality is especially important in situations of high involvement (Petty and Cacioppo 1984).

Increasing Policy Emphasis on Environmental (vs. Social) Issues

In light of an inherent tendency of individuals to value the present more than the future when it comes to sustainability (Griskevicius, Cantú, and Vugt 2012), our results suggest that social issues may at times overshadow environmental issues because of their association with near term consequences. Thus, policy efforts may want to pay special attention to issues and behaviors that address the environment, since these are more psychologically distant and therefore less likely to motivate behavior change on their own. To illustrate, consider climate change which is likely perceived to affect other people, far away, in the future. As a result, policies to combat climate change or otherwise benefit environmental causes may require additional focus and resources since without guidelines, constraints, and incentives, the public may be relatively less likely to act on their own. One illustration of this distinction is the surge in popular discourse about the social issue of income inequality, which has led to significant grassroots action and was a key factor in the 2016 United States presidential election, greatly overshadowing concerns about climate change.

Decreasing Psychological Distance

More generally, our results also suggest that the difference in psychological distance between social and environmental issues—and the different responses to them—could be attenuated by increasing the sense of interdependence between society and the natural environment. Especially in individualistic societies that tend to perpetuate and celebrate the differences between individuals and groups, public policy education efforts can instead emphasize similarities and connections, such as dependence on a shared climate, in an effort to increase the sense that all issues are locally relevant in the present. This implication is again

reinforced by previous research suggesting an evolutionary bias of humans to be more concerned with near term outcomes (Griskevicius, Cantú, and Vugt 2012).

Sustainability Certification and Labeling Programs

Our findings are also relevant to the ongoing development of sustainability certification programs and the design of sustainability labeling schemes, including government-led labeling programs (e.g., USDA/EU Organic, Energy Star/EU Energy Label, EU Ecolabel), and increasing efforts by nonprofits and industry to provide consumers with improved access to detailed ratings information. Our results illustrate the importance of providing distinct information for both social and environmental performance. Early industry examples that could be expanded upon include organizations such as the US-based GoodGuide (<http://www.goodguide.com/>) and the UK-based Ethical Consumer (<http://www.ethicalconsumer.org/>) that give consumers easy access to ratings of products in terms of their performance on both social issues and the environment. Understanding the psychological differences between the social and environmental dimensions of sustainability will be an important part of accelerating efforts to influence consumer behavior in ways that promote the virtues and necessity of more socially and environmentally sustainable patterns of consumption.

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FIGURE 1A
PERCENTAGE OF CHOICES ATTRIBUTED TO THE THEME OF AFFECTIVE VS.
COGNITIVE

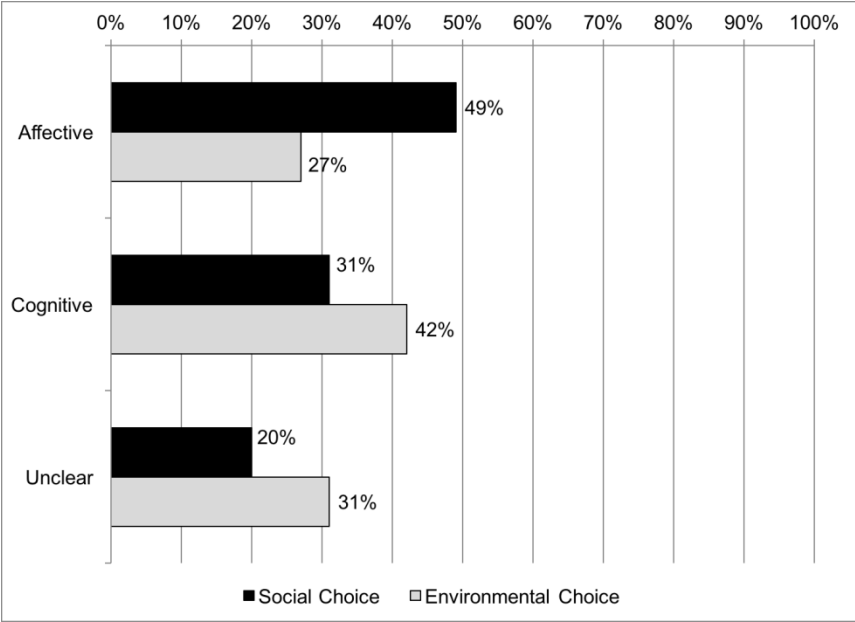


FIGURE 1B
PERCENTAGE OF CHOICES ATTRIBUTED TO THE THEME OF SHORT-TERM VS.
LONG-TERM

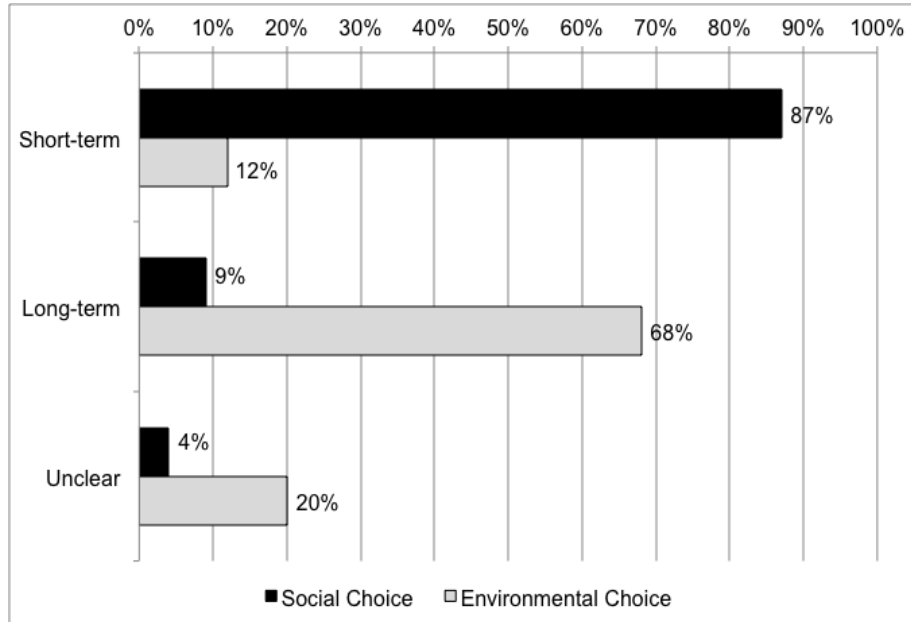


FIGURE 1C
PERCENTAGE OF CHOICES ATTRIBUTED TO THE THEME OF LOCAL VS.
GLOBAL

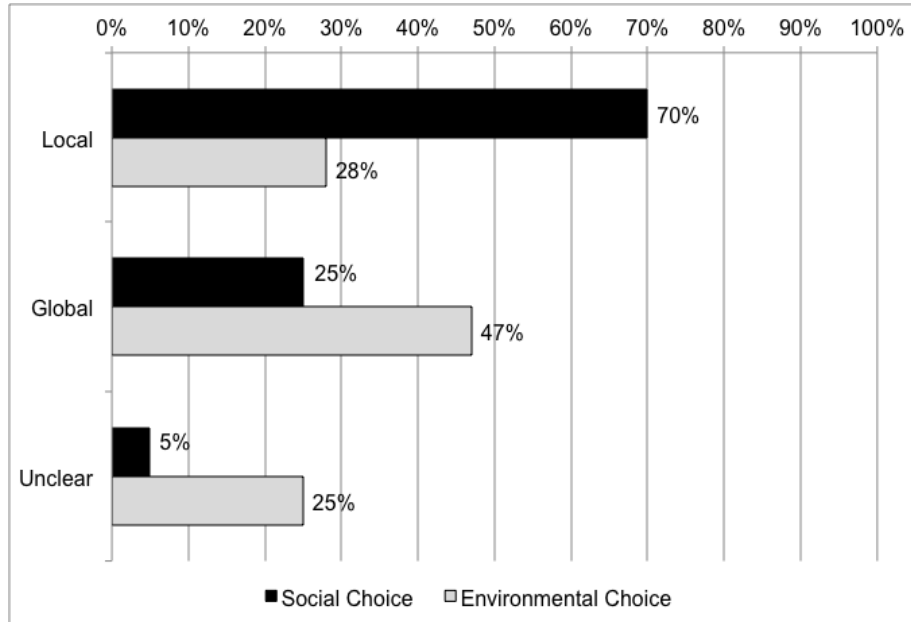


FIGURE 2

CONCEPTUAL MODEL OF THE SOCIAL AND ENVIRONMENTAL DIMENSIONS OF SUSTAINABILITY AND PROPOSED PSYCHOLOGICAL CHARACTERISTICS



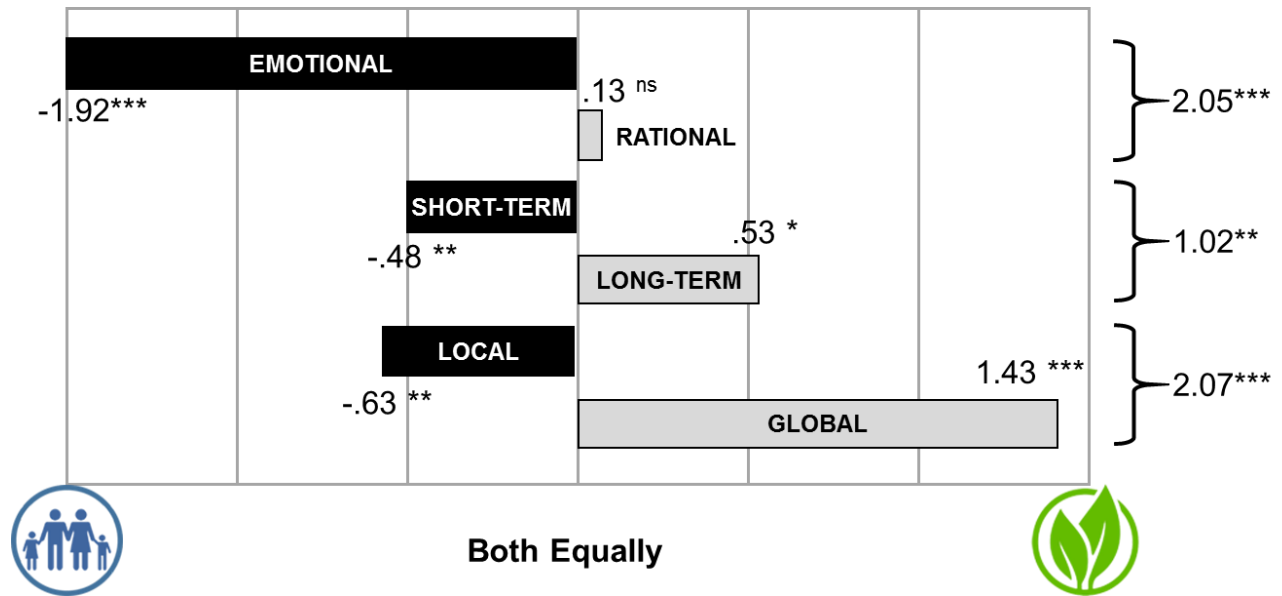
Sustainability dimension	Example issues	Characteristics
Environmental 	Enabling recycling, minimizing pollution, efficient use of materials	<ul style="list-style-type: none">• Cognitive• Long-term• Global } More psychologically distant/abstract
Social 	Using fair labor practices, fair trade with suppliers, supporting charities	<ul style="list-style-type: none">• Affective• Short-term• Local } More psychologically near/concrete

FIGURE 3B

STUDY 1B: MEAN RATINGS OF EACH THEME DESCRIPTOR WITH SYMBOLIC LABELS FOR THE SOCIAL AND ENVIRONMENTAL DIMENSIONS OF SUSTAINABILITY



Notes:

- Seven-item scale ranging from -3 [social symbol] to +3 [environmental symbol] (chart scale truncated from -1.5 to 1.5).
- Means on the chart indicate difference scores relative to scale midpoint of zero, along with significance level of t-test.
- Means to the right of chart show difference scores for paired contrasts of the two items for each theme, along with significance level of paired-sample t-tests.
- * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Appendix – Study Stimuli and Measures

Pilot Study

Instructions and Choice Scenario

Imagine that you are about to buy a chocolate bar for yourself.

Further, imagine that you only have a choice of two chocolate bars. Both will taste the same, cost the same amount of money and both are promoted as "sustainable". The only difference between these two chocolate bars is that one is rated as highly "environmentally responsible" and the other is rated as highly "socially responsible".

Given a choice between these options, which would you pick? [order of choices randomized]

- The chocolate bar that is "SOCIALY responsible" (e.g., using fair labor practices, supporting local communities)
- The chocolate bar that is "ENVIRONMENTALLY responsible" (e.g., minimizing pollution, efficient energy usage)

<page break>

Your choice: [selected choice displayed here]

Please explain WHY you chose this chocolate bar over the other one (briefly explain the thought process and/or emotions that led to your choice):

[text box to enter response]

Which of the following dimensions of sustainability do you associate more with rational issues?

Definitely
social

Both equally

Definitely
environmental

Study 1B

Instructions and Measures

The first section of this survey will explore your perceptions about two different symbols that may appear on products or product packages. Each of these symbols refers to issues that consumers may be concerned about when they purchase products. These issues can be characterized in a variety of ways. For example, some issues are more short-term, others are long-term. Some are more local, others are more global. Some are more emotional, others are more rational. The ratings that you provide will indicate the degree to which you believe that these various characterizations are more or less associated with either of the two following symbols:



Please click "Next" when you are ready to proceed.

<page break>

[Note: Order of following six questions was randomized and presented on separate pages. Endpoints counterbalanced.]

Which of the following symbols relates more to issues that are **short-term**?



Both
equally

Which of the following symbols relates more to issues that are **long-term**?



Both
equally



Which of the following symbols relates to issues that are more **global**?



Both
equally



Which of the following symbols relates to issues that are more **local**?



Both
equally



Which of the following symbols relates to issues that are more **emotional** (based on feelings)?



Both
equally



Which of the following symbols relates to issues that are more **rational** (based on logic)?



Both
equally



<page break>

Which of the following symbols relates to issues that are **environmental**?



Both
equally



-
-
-
-
-
-

Which of the following symbols relates to issues that are **social**?



Both
equally



-
-
-
-
-
-

Studies 2A and 2B

Instructions, Choice Scenario, and Decision Basis Measure

Product ‘sustainability’ or ‘responsibility’ refers to the social and environmental responsibility of products, from raw material sourcing to product manufacturing and transportation, through product usage and, ultimately, end of product life and product disposal. Specifically... [order of social/environmental responsibility description randomized]

Social responsibility refers to issues that affect:

- *Workers* (ensuring fair wages and treatment of the people who provide the raw materials and products)
- *Consumers* (ensuring that products provide real value and do not harm consumers)
- *Communities* (ensuring the development of healthy, productive and rewarding communities)

Environmental responsibility refers to issues related to:

- *Natural Resources* (ensuring the efficient use of energy and raw materials and enabling recycling)
- *Climate* (ensuring clean air, water and land by minimizing pollution)
- *Ecosystems* (ensuring diverse and healthy plants and wildlife)

When you have finished reading the information above, please click ‘Next >>’ to continue.

<page break>



Imagine that you are about to buy a chocolate bar for yourself. Further, imagine that you are considering two chocolate bars. Assume that both would taste the same and both cost the same

My prudent
self

1

2

3

Neither

4

5

6

My
impulsive
self

7

My head

1

2

3

Neither

4

5

6

My heart

7

The rational
side of me

1

2

3

Neither

4

5

6

The
emotional
side of me

7

Study 3

Instructions, Choice Scenario, and Construal Measure

Imagine that you are about to buy a chocolate bar for yourself.

Further, imagine that you only have a choice of two chocolate bars. Both will taste the same, cost the same amount of money and both are promoted as "sustainable". The only difference between these two chocolate bars is that one is rated as highly "environmentally responsible" and the other is rated as highly "socially responsible".

Given a choice between these options, which would you pick for yourself? [order of choices randomized]

- The chocolate bar that is "ENVIRONMENTALLY responsible" (e.g., minimizing pollution, efficient energy usage)
- The chocolate bar that is "SOCIALY responsible" (e.g., using fair labor practices, supporting local communities)
- Neither

<page break>

[construal measure; Liberman & Trope, 1998]

Any behavior can be described in many ways. For example, one person might describe a behavior as "writing a paper," while another person might describe the same behavior as "pushing keys on the keyboard." Yet another person might describe it as "expressing thoughts." The following questions focus on your personal preferences for how a number of different behaviors should be described. Below you will find several behaviors listed. After each behavior will be two different ways in which the behavior might be identified.

For example:

1. Attending class **(a)** sitting in a chair **(b)** looking at a teacher

Your task is to choose the identification, **(a)** or **(b)**, that best describes the behavior for you. Be sure to respond to every item. Please mark only one alternative for each pair. Remember, mark the description that you personally believe is more appropriate for each pair.

Making a list

- (a) getting organized (b) writing things down

Reading

- (a) following lines of print (b) gaining knowledge

Washing clothes

(a) removing odors from clothes (b) putting clothes into the machine

<page break>

(continued....) Mark the description that you personally believe is more appropriate for each pair:

Measuring a room for carpeting

(a) getting ready to remodel (b) using a yard stick

Cleaning the house

(a) showing one's cleanliness (b) vacuuming the floor

Painting a room

(a) applying brush strokes (b) making the room look fresh

Paying the rent

(a) maintaining a place to live (b) writing a check

<page break>

(continued....) Mark the description that you personally believe is more appropriate for each pair:

Caring for houseplants

(a) watering plants (b) making the room look nice

Locking a door

(a) putting a key in the lock (b) securing the house

Filling out a personality test

(a) answering questions (b) revealing what you're like

Brushing teeth

(a) preventing tooth decay (b) moving a brush around in one's mouth

<page break>

(continued....) Mark the description that you personally believe is more appropriate for each pair:

Taking a test

(a) answering questions (b) showing one's knowledge

Greeting someone

(a) saying hello (b) showing friendliness

Resisting temptation

(a) saying "no" (b) showing moral courage

Eating

(a) getting nutrition (b) chewing and swallowing

<page break>

(continued....) Mark the description that you personally believe is more appropriate for each pair:

Traveling by car

(a) following a map (b) seeing countryside

Having a cavity filled

(a) protecting your teeth (b) going to the dentist

Talking to a child

(a) teaching a child something (b) using simple words

Pushing a doorbell

(a) moving a finger (b) seeing if someone's home