Are Two Reasons Better Than One? The Role of Appeal Type in Consumer Responses to Sustainable Products

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In the face of the growing prevalence of multiple appeals to sustainable consumption in marketers’ sustainable product communications, we examine the efficacy, in terms of consumer reactions, of adding an extrinsic appeal (e.g., “Purchase this green product to save money!”) to an intrinsic appeal (e.g., “Purchase this green product to save the environment!”) based communication for a sustainable product. Three studies provide support for our basic assertion that, compared to an intrinsic appeal, joint appeals (i.e., an intrinsic and extrinsic appeal together) reduce consumer preference for sustainable products. As well, these studies demonstrate that this adverse effect of joint appeals is based on a lowering of consumers’ attributions of the company’s sustainability efforts to intrinsic motives (e.g., to the company’s genuine concern for the environment). Finally, not all consumers react adversely to joint appeals; relative to intrinsic appeals, such appeals increase, rather than decrease, the intrinsic attributions and sustainable product preferences for consumers with lower involvement with sustainable consumption.

Keywords Sustainable products; Message appeals; Intrinsic attributions; Sustainable consumption involvement

Introduction

Although the sustainability revolution is well underway, with an unprecedented number of marketers today offering sustainable products (i.e., products that are good for the planet and humankind at large; also known as ethical, “green,” or socially responsible products; Laroche, Bergeron, & Barbaro-Forleo, 2001; De Pelsmacker, Driesen, & Rayp, 2005; Mazar & Zhong, 2010), persuading consumers to purchase such products remains a formidable challenge. While marketplace polls attest to the growing swaths of consumers willing to buy sustainable products, there is a persisting real sense that consumers often do not follow through on their intentions to actually switch to sustainable products (Auger, Burke, Devinney, & Louviere, 2003; Janssen & Vanhamme, 2015; Kalafatis, Pollard, East, & Tsogas, 1999). Given this, it is not surprising that marketers try to incent consumers to buy sustainable products by appealing, through their communications, to multiple consumer motivations. For instance, Xerox promotes its resource-efficient printers by explaining “How Saving the Environment Can Also Save You Money” (Xerox 2018). Similarly, Brita pitches its water filtration system as “better for the environment and your wallet” (Brita 2018). In these examples, the marketer is appealing to both the intrinsic (i.e., the consumer’s genuine desire to benefit humankind and the planet, construed more broadly as altruism) and extrinsic motives (i.e., material incentives, such as material savings, and/or image incentives, such as the approval of relevant others) consumers have for purchasing sustainable products (Andreoni, 1989; Ariely, Bracha, & Meier, 2009; Bénabou & Tirole, 2006; Glazer & Konrad, 1996; Minton & Rose, 1997).

The wisdom of marketers’ appealing to more than one consumer motive (i.e., joint appeals) for consuming sustainable products is supported by the most enduring and influential theories of persuasion (Fishbein, 1979; Petty & Cacioppo, 1986; Sheppard,
Hartwick, & Warshaw, 1988; Todorov, Chaiken, & Henderson, 2002): two or more persuasive arguments are clearly better than one. However, we draw on research on both consumer motivation (Ariely et al., 2009; Bénabou & Tirole, 2003) and, more specifically, consumer attributions regarding marketer actions (Becker-Olsen, Cudmore, & Hill, 2006; Du, Bhattacharya, & Sen, 2010; Klein & Dawar, 2004; Sen & Bhattacharya, 2001) to argue that in marketing sustainable products, adding an appeal to consumers’ extrinsic motives for sustainable consumption (i.e., an extrinsic appeal) to a message appealing to their intrinsic motives for such consumption (i.e., an intrinsic appeal) decreases, rather than increases, their likelihood of purchasing such products. We argue that this is because the type(s) of message appeals used by a marketer in its sustainable product communications comprise the basis for consumers’ attributions regarding why the company is engaging in sustainability: the addition of an extrinsic appeal to the arguably more lofty intrinsic appeal serves to counter consumers’ sense that the company’s efforts in the sustainability domain, including the marketing of sustainable products, are motivated by genuine altruistic motives (i.e., intrinsic attributions). Lower intrinsic attributions about a company’s sustainability intentions, in turn, lower consumers’ desire to patronize the company, as established by a substantial body of work (see Sen, Du, & Bhattacharya, 2016 for a recent review) on consumer reactions to sustainability/corporate social responsibility (CSR). Finally, we argue that not all consumers are likely to be turned off by a combination of extrinsic and intrinsic appeals relative to a purely intrinsic one; consumers who feel less involved, generally, with sustainable consumption are less likely to react adversely to the juxtaposition of extrinsic and intrinsic appeals than those who are more involved.

Three experiments provide support for our basic theorizing. In doing so, this study makes three contributions to our understanding of consumer reactions to sustainability appeals. First, it demonstrates, for the first time to the best of our knowledge, the adverse effects of presenting consumers with two appeals for sustainable consumption compared to that of one, intrinsic appeal. Notably, this runs counter to the basic expectation of most established theories of persuasion (e.g., Fishbein, 1979; Petty & Cacioppo, 1986) that two relevant claims should be more persuasive than one. Second, it advances our extant understanding of the “crowding-out” by extrinsic incentives of consumers’ intrinsic motivations for prosocial behavior (Frey, 1994; Frey & Jegen, 2001; Frey & Oberholzer-Gee, 1997) by implicating a novel attribution-based driver of consumers’ adverse reactions to a marketer promoting its sustainable products through more than just an intrinsic appeal. In doing so, our findings broaden the thus far purely motivational account for the crowding-out effect (i.e., people are demotivated by extrinsic motives) to include the appeal(s)-based inferences consumers make about a company’s motives as a driver of their sustainable consumption. Finally, we document conceptually and practically significant heterogeneity in consumer reactions to sustainability appeal types; those with lower involvement with sustainable behaviors are actually more rather than less persuaded to buy a sustainable product when its marketer uses both extrinsic and intrinsic appeals, providing the first empirical demonstration of an attributions-based “crowding-in” effect. In other words, in contrast to prior research, we demonstrate that extrinsic appeals can actually be persuasive for some consumers.

Next, we draw on relevant literatures to derive our basic predictions regarding the effect of message appeal types on consumers’ causal attributions regarding and willingness to patronize a company promoting sustainable products. We then present the three studies that test these predictions using a diversity of populations, sustainable products, and message appeals. The study concludes with a discussion of the theoretical and practical implications of our findings.

Conceptual Development

A wide range of consumer products today are sustainable, ranging from fair-traded coffee and eco-cotton to energy-saving lamps. Compared to conventional products, sustainable products typically deliver various additional benefits such as fairer trade conditions for local farmers, ecologically friendly production (i.e., lower environmental impact or “carbon footprint”), and higher resource efficiency as compared to conventional products (Auger, Devinney, Louviere, & Burke, 2008; Auger et al., 2003; Montague & Mukherjee, 2010). Research on both consumer reactions to sustainable products (e.g., Schuwerk & Lefkoff-Haguis, 1995; Singhapakdi & LaTour, 1991; see Sen et al., 2016 for recent review) and, more broadly, prosocial behaviors (White & Peloa, 2009) suggests that marketers can use two basic types of appeals to persuade consumers to adopt their sustainable products: intrinsic appeals and extrinsic appeals.

Intrinsic appeals (e.g., highlighting how the use of a sustainable product helps prevent environmental impacts such as fairer trade, and higher resource efficiency as compared to conventional products) are typically more highly valued by consumers with lower extrinsic attributions regarding why the company is engaging in sustainability. In our study, we demonstrate that extrinsic appeals can actually be persuasive for some consumers.
degradation) focus on consumers’ intrinsic (or altruistic (Singhapakdi & LaTour, 1991) or “green” (Schuhwerk & Lefkoff-Haguis, 1995)) motives for consuming sustainable products. Such motives are grounded in the genuine altruistic impulse people have to “do good,” causing them to buy sustainable products because it allows them to contribute to the welfare of the planet and its people. The primary rewards of purchases guided by intrinsic motives are the positive emotions (i.e., “warm glow”) experienced by the consumer (Andreoni, 1989; Kim & Choi, 2005; Minton & Rose, 1997), from, in part, fulfilling what she sees as her moral obligation (Ariely et al., 2009; Bénabou & Tirole, 2006), and, importantly, the signal such a purchase allows the consumer to send herself (i.e., a self-signal) that she is a good, caring, moral person. The primary rewards of purchases guided by intrinsic motives are the positive emotions (i.e., “warm glow”) experienced by the consumer (Andreoni, 1989; Kim & Choi, 2005; Minton & Rose, 1997), from, in part, fulfilling what she sees as her moral obligation (Ariely et al., 2009; Bénabou & Tirole, 2006), and, importantly, the signal such a purchase allows the consumer to send herself (i.e., a self-signal) that she is a good, caring, moral person (Bodner & Prelec, 2003; Mazar, Amir, & Ariely, 2008; Gneezy, Gneezy, Riener, & Nelson, 2012). Not surprisingly, then, such appeals have been shown to have a strong positive effect on consumers’ intentions to buy sustainable products (e.g., Montague & Mukherjee, 2010; Singhapakdi & LaTour, 1991).

Extrinsic appeals (e.g., highlighting how the use of a sustainable product helps save the consumer money in the long run), on the other hand, tap into the more instrumental, often socially anchored, motives that guide the consumption of sustainable products. Prior research has focused on two such motives. The first of these pertains to the functional or material (Bénabou & Tirole, 2003) benefits consumers might gain from the product itself, such as material savings over the longer run or better product performance (Diamond & Loewy, 1991; Luyben & Bailey, 1979; Singhapakdi & LaTour, 1991; Van Vuigt, Meertens, & Van Lange, 1995). The second of these resides in the psychosocial or image (Bénabou & Tirole, 2003) benefits, in the form of valuable social recognition or status conferred upon the consumer through their socially responsible behaviors (Glazer & Konrad, 1996; Griskevicius, Tybur, & van den Bergh, 2010; Kollmuss & Agyeman, 2002; Soetevent, 2005; Sudgen, 1982, 1984). Appealing to each of these motives seems to also, in general, persuade consumers to consume sustainably (Griskevicius et al., 2010; Singhapakdi & LaTour, 1991; Van Vuigt et al., 1995).

Interestingly, a substantial body of work points to the adverse effect of extrinsic incentives on consumers’ intrinsic motivations to behave prosocially (Ariely et al., 2009; Deci, Koestner, & Ryan, 1999). According to Bénabou and Tirole (2003), for instance, highlighting the image or material rewards tied to prosocial or pro-environmental behaviors can induce in consumers doubts about their true motives for behaving prosocially, “crowding out” (i.e., reducing) their prosocial behavior. Alternately construed as the “the hidden cost of reward” (Lepper & Greene, 1978), “the overjustification hypothesis” (Lepper, Greene, & Nisbett, 1973), or “the corruption effect” (Deci, 1975), this happens because the consideration of extrinsic motives for a prosocial act confuses consumers about their true motives for acting prosocially, corrupting their ability to signal to themselves, and at times to others, that they are a good, virtuous, moral person and diminishing, in the process, the “warm glow” they would get if they perceived themselves as acting out of purely intrinsic motives (Gneezy et al., 2012). For example, if a person decides to donate blood without receiving any material compensation, the behavior was obviously due to the person’s intrinsic wish to do a good deed. However, if she/he receives a material reward or social recognition for such a prosocial action, doubts arise in the person about her/his true motives, causing her/him to be less likely to donate blood (Titmuss, 1970).

We integrate this dynamic with that underlying consumer reactions to sustainability (Sen et al., 2016) to argue that the inclusion of an extrinsic appeal in a company’s intrinsic appeal-based communication to consumers is likely to change their causal attributions of the company’s sustainability efforts, crowding out, in turn, their likelihood of buying from the company. This is because a substantial body of research, both scholarly and in the field (Ellen, Webb, & Mohr, 2006; Groza, Pronschinske, & Walker, 2011; Habel, Schons, Alavi, & Wieseke, 2016), points to consumers’ attributions regarding a company’s motives for marketing its sustainability efforts as a key driver of their decision to patronize the company. These attributions are of two basic kinds: intrinsic (e.g., a genuine concern for societal and environmental well-being) and extrinsic (e.g., profit maximization). While some research points to consumers’ tolerance of both attributions simultaneously, the essential insight remains that intrinsic [extrinsic] attributions cause consumers to react more [less] favorably to a company, making them more [less] willing to patronize its products and, more generally, behave sustainably (Ellen, Mohr, & Webb, 2000; Ellen et al., 2006; Forehand & Grier, 2003; Sen et al., 2016; Wang, Krishna, & McFerran, 2017).

Importantly, consumers, even today, remain inherently skeptical of a company’s sustainability claims (e.g., concerns about “green-washing”), using
a variety of cues from its sustainability communications to infer the company’s motives for doing so (Leonidou & Skarmeas, 2017; Skarmeas & Leonidou, 2013). This is underscored by research pointing to company communications as a primary source used by consumers to gauge the company’s identity (Bhattacharya & Sen, 2003; Du et al., 2010). Thus, just as the incentives offered for prosocial actions serve as signals to consumers of their own motives, we suggest that the types of appeals made by a company to consumers to consume sustainably are used by them as signals of the company’s own motives for engaging in, and communicating about, sustainability. In particular, an intrinsic appeal by the company will cause consumers to make more intrinsic attributions regarding the company’s motives. What happens, then, when the company adds an extrinsic appeal to an intrinsic appeal-based communication? We suggest that as in the case of their own motives, the extrinsic appeal makes consumers less certain about the genuineness of the company’s intentions, lowering their intrinsic attributions of the company’s sustainability efforts. This adverse effect of the joint appeal on consumers’ intrinsic attributions produces, in turn, a lower willingness to buy the sustainable products promoted by the company. More formally:

H1: Adding an extrinsic appeal to an intrinsic appeal-based communication by a company promoting a sustainable product will reduce consumers’ likelihood of purchasing the product.

H2: The negative effect of adding an extrinsic appeal to an intrinsic appeal on consumers’ sustainable product purchase likelihood will be mediated, at least in part, by their intrinsic attributions of the company’s sustainability motivations.

The Moderating Role of Sustainable Consumption Involvement

We propose that not all consumers will respond the same way to the inclusion of an extrinsic appeal in an intrinsic appeal communication: consumers who care more about sustainable consumption (i.e., greater sustainable consumption involvement) will be more likely to react negatively than those who do not care as much. This is so for a few reasons. First and most basically, higher, more enduring involvement with sustainable consumption is likely to stem largely from intrinsic motives. Thus, while such consumers are less likely to experience confusion about their own established motives when faced with an extrinsic appeal, they are, interestingly, more likely to ascribe extrinsic motives to the company, due equally to their greater familiarity with and vigilance against greenwashing practices as well as their greater aversion to it. This is underscored by prior research (Frey & Jegen, 2001) which suggests that such consumers may feel their own involvement in sustainable consumption repudiated by an extrinsic appeal, particularly as their choices of companies to consume from may be based on higher-order, identity-based connections (e.g., Bhattacharya & Sen, 2003; Bray, Johns, & Kilburn, 2011; Shaw, Shiu, & Clarke, 2000).

Second, greater involvement with the domain of the communication appeals (i.e., sustainable consumption) is likely to make such consumers more likely to process the information deliberatively, through possibly the central route to persuasion (Petty, Cacioppo, & Schumann, 1983) than those with lower involvement. Thus, the former are more likely to actually think about content of the appeals and their implications for the company’s own motives than are the latter. In fact, if those with low involvement process the appeals heuristically or peripherally, they may actually be more persuaded by two appeals rather than one, ascribing greater intrinsic motives to marketers who use both intrinsic and extrinsic motives because they are providing more reasons for consuming sustainably. More formally then:

H3a: Involvement with sustainable consumption moderates the effect of joint appeals on purchase intentions such that the purchase intentions of consumers with greater involvement are more likely to decrease than that of those with lesser involvement in response to the addition of an extrinsic appeal to an intrinsic appeal-based communication.

H3b: The moderating effect of sustainable consumption involvement (H3a) is mediated, at least in part, by consumers’ intrinsic attributions of the company’s sustainability motives.

Overview of Studies

To test our hypotheses, we conducted three experiments. Studies 1 and 2 were run in cooperation with the German branch of a large international retail company. The partner company allowed us to send, as part of a company newsletter, varying appeals to a panel of their customers to purchase real sustainable products from the company’s
product portfolio. In each of these studies, the customers were randomly assigned to groups receiving different appeals. These two studies, together test H1 and H2. In our final, study 3, we rely on reactions of the members of a German online panel to a hypothetical sustainable product to replicate H1 and H2, and also test H3. Figure 1 summarizes the overview of studies.

**Study 1**

In our first study, we test how the addition of an extrinsic appeal to an intrinsic appeal-based communication influences the purchase intention for two real sustainable products (i.e., organic bed linen and fair-trade coffee) offered by the partner company (i.e., H1). In this study we opt to operationalize the extrinsic appeal through an image appeal. This is so for two reasons. First, the organic bed linen and the fair-trade coffee do not provide any material savings to the user. Second, the use of an image appeal for relatively private products such as coffee and bed linen helps distinguish between the company attributions-based account we theorize to underlie the effect predicted in H1 and the self-signaling account examined by prior research. Specifically, while even an image appeal should lower intrinsic attributions of the company’s motives for selling and communicating about a sustainable private product, such an appeal may not comprise a valid motive for buying such a product, diminishing its ability to crowd out consumers’ intrinsic motivations.

**Method**

Respondents were drawn from the partner company’s database. The treatments were integrated into the company’s newsletter along with a subsequent questionnaire. In line with the four-group between-subjects design, customers were randomly assigned to one of four appeals conditions: (a) no appeal (n_bed_linen = 188; n_coffee = 229), (b) intrinsic appeal (n_bed_linen = 175; n_coffee = 270), (c) extrinsic appeal (n_bed_linen = 192; n_coffee = 292), or (d) joint appeal (n_bed_linen = 170; n_coffee = 284; i.e., a combination of intrinsic and extrinsic motivation), and one of the products. The response rate was 15.71%, and the final sample consists of 725 completed questionnaires for bed linen, and 1,075 completed questionnaires for coffee. A description of the demographic profiles of the participants in each study is shown in Table 1.

**Procedure**

Customers received the company’s newsletter in which they were asked to take part in a short

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**Figure 1.** Conceptual framework.
survey concerning a product that the company offered. Once they agreed to take part in the survey and clicked on a link, they were directed to an online questionnaire which was programmed as a series of webpages. At the beginning of the survey, some general instructions were included on how to answer multi-item Likert scales and how to enlarge the visual representation of the survey. Then, respondents saw the communication about the bed linen or the coffee. The treatment groups additionally received an appeal. After the participants had received the stimuli, they were asked to report their purchase intentions for the respective product. Toward the end of the survey, the respondents reported their demographics. All the treatment texts are included in Appendix A.

Measurement

For the measurement of purchase intentions, we used the measure developed by White, MacDonnell, and Ellard (2012), with items such as “I would probably purchase this product at the next opportunity,” measured on a 7-point scale (1 = “I do not agree at all”; 7 = “I fully agree”). Scale items and an assessment of the scale’s reliability and validity are included in Appendix B.

Results

Pretest for treatment texts. To ensure that the intrinsic and extrinsic motives were perceived as intended, we ran a pretest with 184 respondents recruited from Amazon mTurk, who were randomly assigned to one of five Appeals conditions: (a) no appeal (n = 32), (b) intrinsic appeal (n = 28), (c) extrinsic appeal (n = 41), (d) joint appeal (n = 44; i.e., a combination of intrinsic and extrinsic appeal), or (e) a combination of two intrinsic appeals (n = 39) to purchase the organic bed linen. The respondents were roughly the same age (M = 36.84, SD = 11.98) as the respondents in the main study. Once the respondents agreed to participate in the survey and clicked on a link, they followed the same procedure as in the main study. Each respondent then responded to two manipulation check items on 7-point scales (1 = “Strongly disagree”; 7 = “Strongly agree”). “The company told me to purchase the product to do something good for the environment and society,” and the “The company told me to purchase the product to be regarded as sustainable by others.” Planned contrasts based on one-way ANOVAs with the manipulation check items as the dependent variables and Appeal Type as the independent variable indicate that respondents in the intrinsic appeal group perceived the treatment text as appealing to their intrinsic motivations significantly more (M = 5.57) than did the respondents in the image appeal group (M = 4.83; F(4, 176) = 3.42, p < .01). Likewise, the respondents in the image appeal group perceived the treatment text as appealing to their image motivations significantly more (M = 5.54) than did respondents in the intrinsic appeal group (M = 3.54; F(4, 176) = 9.12, p < .001).

H2 test. The data sets for coffee and bed linen were first combined and the data were analyzed using an ANOVA with Appeal Type (four levels) and product (two levels) as independent variables and purchase intentions as a dependent variable. There is a significant direct effect between product and purchase intentions (F(1, 1764) = 103.48, p < .001), such that purchase intentions are significantly higher for bed linen (M = 3.88) than for coffee (M = 3.14; t(1605) = 9.49, p < .001). However, there is no significant interaction between Appeal Type and product (F(3, 1764) = 2.10, p = .10). Thus, the data were then analyzed separately for coffee and bed linen using a one-way ANOVA with purchase intentions as the dependent variable and Appeal Type (four levels) as the independent variable. The results indicate that purchase intentions vary significantly across the different appeals for

| Table 1 |
| Sample Distributions by Gender, Age, Income, and Educational Level*<sup>a,b</sup> |
| | Study 1 | Study 2 | Study 3 |
| | Bed linen | Coffee | Fridge | Bottle |
| Gender | | | | |
| Male | 25.2 | 23.8 | 25.7 | 36.6 |
| Female | 74.8 | 76.2 | 74.3 | 63.4 |
| Age | | | | |
| 18–34 years | 57.4 | 57.6 | 54.3 | 23.6 |
| 35–54 years | 35.8 | 34.5 | 36.8 | 43.9 |
| More than 55 years | 6.7 | 7.9 | 8.9 | 32.4 |
| Income (monthly) | | | | |
| Less than 1,000 € | 12.6 | 11.1 | 12.7 | 3.0 |
| 1,001–2,500 € | 45.2 | 39.9 | 39.8 | 28.7 |
| 2,501–3,500 € | 24.3 | 27.6 | 26.7 | 29.0 |
| More than 3,501 € | 17.8 | 21.2 | 20.8 | 39.3 |
| Educational level | | | | |
| Elementary school | 4.0 | 4.2 | 4.1 | 0.0 |
| High school | 55.8 | 55.6 | 55.9 | 50.3 |
| Academic Degree | 40.2 | 40.1 | 40.0 | 49.7 |

Note. *Study 1 based on n = 725 participants (bed linen) and n = 1,075 participants (coffee); Study 2 based on n = 1,972 participants (fridge); Study 3 based on n = 300 participants (bottle).<sup>b</sup>All numbers are percentages.
both bed linen \((F(3, 712) = 20.20, p < .001)\) and coffee \((F(3, 1052) = 29.88, p < .001)\). Bonferroni post hoc tests reveal that in the case of bed linen, the highest purchase intentions \((M = 4.46)\) were displayed by the group which received an intrinsic appeal (No Appeal: \(M = 3.27\); Extrinsic Appeal: \(M = 4.04\); Joint appeal: \(M = 3.75\)). We found the same pattern for coffee: the highest purchase intentions \((M = 3.68)\) were displayed by the group which received an intrinsic appeal (No Appeal: \(M = 2.34\); Extrinsic Appeal: \(M = 3.13\); Joint appeal: \(M = 3.29\)). More importantly, using planned contrasts, we find support for our prediction \((H_1)\) that adding an extrinsic appeal to an intrinsic appeal-based message lowers purchase intentions for bed linen \((t(712) = 4.41, p < .001)\) as well as coffee \((t(541) = 2.75, p < .01)\). This crowding-out effect is visualized in Figure 2. Table 2 presents a summary of the means in the different conditions, with accompanying significance tests of the differences between the means.

### Robustness Checks

**Gender bias.** To test for gender differences in the responses, we conducted a separate ANOVA with purchase intention as dependent variable, the appeals as independent variables, and gender (male, female) as a moderating factor. We did not find any direct \((F(1, 682) = 2.59, p = .11)\) or moderating effect of gender \((F(3, 682) = 0.15, p = .93)\) on purchase intentions for bed linen. Similarly, we did not find any moderating effect of gender \((F(3, 980) = 0.89, p = .45)\) on purchase intentions for coffee. There is a direct effect \((F(1, 980) = 10.39, p < .001)\), however, such that women are more likely to purchase fair-trade coffee than men. However, in general we can assume that the results are robust.

**Nonresponse bias.** To check for nonresponse bias, we compared the demographic data of the customers who responded to our surveys with those of nonrespondents. The results indicate that respondents and nonrespondents are comparable on the demographic criteria of age, gender, income, and education. Respondents tend to be slightly younger \((M_{\text{bed linen}} = 34.95; SD_{\text{bed linen}} = 11.50; M_{\text{coffee}} = 35.15, SD_{\text{coffee}} = 11.91)\) than nonrespondents \((M = 36.47; SD = 12.58)\). In addition, there are slightly more women in respondents (bed linen: 74.80%; coffee: 76.20%) than in nonrespondents (73.30%), and the respondents have a slightly higher percentage of academic degrees (bed linen: 40.20%; coffee: 38.00%; nonrespondents: 36.50%). Overall, given that the differences are minor, a nonresponse bias appears

![Figure 2. Study 1: ANOVA results.](image)

### Table 2

ANOVA Results: Means in Purchase Intentions Across the Different Experimental Groups

<table>
<thead>
<tr>
<th>Study</th>
<th>Product</th>
<th>No appeal</th>
<th>Intrinsic</th>
<th>Extrinsic</th>
<th>Intrinsic + Extrinsic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Image</td>
<td>Material</td>
</tr>
<tr>
<td>1</td>
<td>Bed linen</td>
<td>3.27(^A)</td>
<td>4.46(^B)</td>
<td>4.04(^C)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Coffee</td>
<td>2.34(^A)</td>
<td>3.68(^B)</td>
<td>3.13(^C)</td>
<td>—</td>
</tr>
<tr>
<td>2</td>
<td>Energy-saving fridge</td>
<td>2.74(^A)</td>
<td>3.63(^B)</td>
<td>2.94(^AC)</td>
<td>3.07(^C)</td>
</tr>
<tr>
<td>3</td>
<td>Drinking bottle</td>
<td>—</td>
<td>3.86(^A)</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

**Note.** Reading across the rows, means with the same superscript are not significantly different. Differences are significant at \(p < .05\).
unlikely, and we expect that our results can be generalized to the sample population at large.

**Study 2**

In this study, we replicate the results from the previous study and, in addition, test for our predicted process based on consumers’ intrinsic attributions of the company’s motives (H2).

**Method**

The design, procedure, and respondent sample in this study was identical to that of study 1 with the following three exceptions. First, in this study the product was an energy-saving fridge. Second, in this study we examined both types of extrinsic appeals: material appeal and image appeal. Given this, participants were assigned at random to one of the six levels of the between-subjects Appeals factor: (a) no appeal (n = 371), (b) intrinsic appeal (n = 279), (c) extrinsic appeal: image appeal (n = 366), (d) extrinsic appeal: material appeal (n = 375), (e) joint appeal (image): intrinsic appeal + image appeal (n = 299), and (f) joint appeal (material): intrinsic appeal + material appeal (n = 282). Third, we also measured respondents’ intrinsic attributions regarding the company’s sustainability efforts, after they have provided their purchase intentions, measured as in study 1. The response rate was 14.98%. The final sample consists of 1,972 respondents (74.30% female).

**Measurement**

*Intrinsic attributions.* To keep the questionnaire short, we measured consumers’ intrinsic attributions of the company’s motives using the following item based on Du et al. (2010): “[COMPANY NAME] engages in charitable projects out of a genuine concern to be socially responsible.” This item was measured on a 7-point scale (1 = “I do not agree at all”; 7 = “I fully agree”). We switch to a multi-item measure of attributions in the next, final, study.

**Results**

*Pretest for treatment texts.* Again, we ran a pretest to ensure that the treatment texts were perceived as intended. One hundred ninety-one respondents from Amazon mTurk completed a task that was identical to that in study 1 pretest. The respondents’ age (M = 35.86, SD = 10.47) matched the respondents’ age in the main study (M = 36.01; SD = 12.16). Respondents were randomly assigned to one of five Appeals conditions: (a) intrinsic appeal (n = 43), (b) extrinsic: material appeal (n = 32), (c) joint appeal (n = 34; i.e., a combination of intrinsic and extrinsic: material appeal), (d) a combination of two intrinsic appeals (n = 48), and (e) a combination of two extrinsic appeals (n = 34), or (e) a combination of two extrinsic appeals (n = 48), and responded to the following two items on 7-point scales (1 = “Strongly disagree”; 7 = “Strongly agree”) “The company told me to purchase the product to do something good for the environment and society”, and for material motivations the item was “The company told me to purchase the product to save money.” As in study 1, the respondents in the intrinsic appeal group perceived the treatment text as appealing to their intrinsic motivations significantly more (M = 5.67) than did the respondents in the material appeal group (M = 4.06; F(4,186) = 7.46, p < .001). Furthermore, the respondents in the material appeal group perceived the treatment text as appealing to their extrinsic motivations significantly more (M = 6.06) than the respondents in the intrinsic appeal group (M = 4.53; F(4,186) = 3.80, p < .01).

Tests of H1 and H2. To replicate the results from the previous studies, we conducted a one-way ANOVA with purchase intentions as dependent variable and the six-level Appeals factor as the independent factor. As in the prior study, purchase intentions (Table 2; Figure 3) vary across the different appeal conditions (F(5, 1905) = 16.77, p < .001). As in study 1, Bonferroni post hoc tests reveal that purchase intentions are highest when respondents are exposed to an intrinsic appeal (M = 3.63) than any other appeal (No appeal: M = 2.74; Image appeal: M = 2.94; Material appeal: M = 3.07; Joint appeal [Image]: M = 2.87; Joint appeal [Material]: M = 2.77). More importantly, in line with H1, planned contrasts reveal that an intrinsic appeal produces higher purchase intentions (M = 3.63) than either type of a joint appeal (t(477) = 8.36, p < .001). There was no difference between the two types of joint appeals (t(555) = 0.980, p = n.s.).

An identical ANOVA with intrinsic attributions of the company’s motives as the dependent variable yielded parallel results (F(5, 1961) = 11.55, p < .001). In line with our theorizing, an intrinsic appeal produces higher intrinsic attributions (M = 4.92) than any other appeal (No appeal: M = 4.24; Image appeal: M = 4.22; Material appeal: M = 4.37; Joint appeal [Image]: M = 4.24; Joint appeal [Material]: M = 4.26). More importantly, in support of H2, planned contrasts reveal that an intrinsic appeal produces higher intrinsic attributions (M = 4.92) than
either type of a joint appeal ($t(1961) = 6.76, p < .001$). Again, there was no difference between the two types of joint appeals ($t(1905) = -0.10, p = n.s.;$ Figure 3).

In a second step, to empirically test $H_2$ we estimated the mediating effect of intrinsic attributions in the appeals–purchase intention relationship. The independent variables were dummies for the appeals, with the intrinsic appeal as the reference category. The mediator was intrinsic attribution of the company’s motives. We used the PROCESS macro Release 2.16.3 (Model 4; Hayes, 2018) to test the indirect effect of the joint appeals (both intrinsic and material as well as intrinsic and image joint appeals) on purchase intentions via the intrinsic attributions of the company’s motives (5,000 bootstrap samples). In line with our theorizing, the results (Table 3) reveal that a joint appeal has a negative effect on the intrinsic attribution of the company’s motivation, both when it comprises an intrinsic and a material appeal ($t = -5.72, p < .001$) and when comprises an intrinsic and an image appeal ($t = -5.99, p < .001$). Furthermore, we find a significant indirect effect from a joint appeal to purchase intentions via customers’ intrinsic attributions of the company’s motivation both when the joint appeal comprises an intrinsic and a material appeal (95% CI = −0.28 to −0.13), and when it comprises an intrinsic and an image appeal (95% CI = −0.28 to −0.15).

**Robustness Checks**

**Gender bias.** To test for gender differences in the responses, we conducted a separate ANOVA with purchase intention as dependent variable, the appeals as independent variables, and gender (male, female) as a moderating factor. We did not find any direct ($F(1, 1806) = 0.46, p = .50$) or moderating effect of gender ($F(5, 1806) = 1.40, p = .22$) on purchase intentions. In addition, we conducted an ANOVA with intrinsic attributions of the company’s motives as the dependent variable, the different appeals as factors, and gender as a moderator. This time, we do find a direct effect of gender ($F(1, 1855) = 17.52, p < .001$), such that male respondents have a lower intrinsic attribution of the company’s motives than female consumers. However, we do not find a moderating effect of gender ($F(5, 1855) = 0.54, p = .75$) for the relationship between the treatments and intrinsic attributions. Thus, we can assume that the results are robust.

**Nonresponse bias.** To check for nonresponse bias, we compared the demographic data of the customers who responded to our surveys to those of non-respondents using data retrieved from company records. The results indicate that respondents and non-respondents are comparable on the demographic criteria of age, gender, income, and education. The

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**Figure 3.** Study 2: ANOVA results.
proportion of females in the respondent group (74.30%) is very close to that of the nonrespondent group (73.30%). In addition, the respondents tend to be the same age ($M = 36.01; SD = 12.16$) as nonrespondents ($M = 36.47; SD = 12.58$). The respondents have a slightly higher level of education (40.00% have an academic degree) than nonrespondents (36.50% have an academic degree), but this difference is minor. Overall then, a nonresponse bias appears unlikely, and we expect that our results can be generalized to the sample population at large.

Common method bias. Common method variance (CMV) can be a problem in any single-source survey that uses the same type of scales (i.e., Likert scales). Therefore, for study 2 in which multiple self-reported constructs are measured, we took several precautions to rule out the threat of CMV. First, the independent variable is an experimental manipulation and not a survey construct. Second, we assured the participants that their answers would be processed anonymously to minimize socially desirable response patterns (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Third, we conducted Harman’s single-factor test in line with Korsgaard and Roberson (1995) and Mossholder, Bennett, Kemery, and Wesolowski (1998). Thereby, we conducted two confirmatory factor analyses (CFA) in MPlus 7, one with a single-factor solution whereby all purchase intention and intrinsic attribution items loaded on one factor, and another one with a two-factor solution, and compared the models. If the two-factor solution has a significantly better fit than the one-factor solution, we can conclude that the common method bias is not a serious threat to the robustness of the results. This is indeed the case based on chi-squares. The CFA with a two-factor solution has a significantly better fit than the CFA with a one-factor solution ($\Delta \chi^2 = 68.10; \Delta df = 3$, significance of the $\chi^2$ difference test: $p < .01$). These results point to the absence of a single general factor in the data set, which along with the experimental manipulation and the anonymity of answers suggest that the threat of common method bias is not serious.

### Study 3

The goal of this study was to replicate the findings of study 2, and test for the moderating effect (i.e., $H_3$) of sustainable consumption involvement (SCI). Having established our basic effect of joint appeals with both image and material versions of an extrinsic appeal, in this study we contrast, for the sake of simplicity, an intrinsic appeal with a joint appeal, wherein the extrinsic appeal is of the material kind. In this study the sustainable product was a water bottle that can be filled with tap water (instead of buying bottled water).
Data Collection and Sample

Three hundred members of an online consumer panel (for sample details, please see Table 1) completed the study. Respondents were assigned at random to either an Intrinsic Appeal condition (155 respondents) or a Joint Appeal condition (145 respondents). After being exposed to the stimuli (see Appendix A), they provided their purchase intentions, assessed the same way as in prior studies, followed by their intrinsic attribution of the company’s motivation, and finally their sustainable consumption involvement.

Measurement

Intrinsic attributions. In this study, we developed a more extensive measure of intrinsic attributions: we created a seven-item measure of intrinsic attributions based on measures used by a range of prior research in the domain of CSR attributions (Du, Bhattacharya, & Sen, 2007; Skarmeas & Leonidou, 2013; Ellen et al., 2006; Graafland & Van de Ven, 2006, Habel et al., 2016).

Sustainable consumption involvement. We assessed SCI using a dimension of the Socially Responsible Purchase and Disposal (SRPD) scale developed by Webb, Mohr, and Harris (2008). Because the sustainable product in this study was a “green” product, we restricted our involvement measure to that domain by using the Avoidance and Use Reduction of Products based on their Environmental Impact dimension of the Webb, Mohr, and Harris (2008) scale (the items and integrity measures are included in Appendix B).

Results

Treatment texts. We included checks to ensure that the treatment texts were equally understandable and did not differ on nontreatment dimensions. For instance, before the demographics at the end of the survey, we included one item saying “The text was very hard to understand (scale anchor = 1) – very easy to understand (scale anchor = 7)”. In an ANOVA, the treatment variable does not affect this item ($F(1, 300) = 0.03, p = .87$). Furthermore, we asked respondents to assess “The text was very badly written (scale anchor 1) – very well written (scale anchor 7)”. Again, we do not find significant differences across treatments ($F(1, 300) = 0.03, p = .86$). We also included the item “After reading the text I felt well informed about the product” (scale anchors from 1 = “I do not agree at all” to 7 = “I fully agree”). The ANOVA does not reveal any significant differences on this item across treatments ($F(1, 300) = 0.08, p = .78$). We further asked respondents to assess the item “I read the text attentively” (scale anchors from 1 = “I do not agree at all” to 7 = “I fully agree”) and do not find differences in self-reported attention ($F(1, 300) = 0.08, p = .78$).

Tests of H1, H2, and H3. As a first step, we conducted an ANOVA to replicate H1 with the two-level Appeal factor as the predictor of purchase intentions. The ANOVA results confirm that purchase intentions are significantly lower when respondents are exposed to the joint appeal ($M = 3.43$) than when they are exposed to the intrinsic appeal ($M = 3.86; F(1, 299) = 4.90, p < .05$).

As SCI was measured last, we also conducted an ANOVA to test whether the treatment variable affects SCI. For this purpose we used the treatment as an independent and SCI as a dependent variable in an ANOVA. The analysis indicates that the treatment did not affect respondents’ assessment of their SCI ($F(1, 299) = 0.39, p = .53$).

Next, to test for the moderated mediation (H3a and H3b), we used Mplus 7. We included a dummy for the joint appeal as independent variable (the intrinsic appeal is the reference). Furthermore, we used purchase intentions as dependent variable, intrinsic attributions as mediator, and SCI as the moderating variable, moderating the link between the treatment and intrinsic attributions.

The model fits the data well ($CFI = 0.981$; $TLI = 0.956$; $RMSEA = 0.055$; $SRMR = 0.029$). In line with H3a and H3b, we find evidence of moderated mediation. SCI significantly moderates the direct effect of the treatment on intrinsic attributions ($\beta = -0.21, p < .00$) and the indirect effect of the treatment on purchase intentions ($\beta = -0.13, p < .00$). To gain a deeper understanding of this moderation effect, we conducted floodlight analyses (Johnson-Neyman technique in SPSS PROCESS; see Spiller, Fitzsimons, Lynch, & McClelland, 2013). In the first of the analyses (Figure 4a) we used the treatment variable as an independent, intrinsic attributions as a dependent, and SCI as the moderating variable. In the second analysis (Figure 4b) we used the treatment variable as an independent, purchase intentions as a dependent, and SCI as the moderating variable. We estimated Model 1 in PROCESS using the Johnson-Neyman conditioning option. This analysis delivers interesting additional insights. The results are displayed in Figure 4.

The analysis reveals that for both dependent variables, the higher the respondents’ level of SCI,
the smaller is the coefficient of the effect of the joint appeal on the dependent variable. More specifically, for low levels of SCI the effect of the joint appeal on intrinsic attributions/purchase intentions is positive. In other words, two appeals are actually better than just an intrinsic appeal for these consumers. For medium levels of SCI the effect turns insignificant. For high level of SCI, however, we find a significantly negative effect of the joint appeal on intrinsic attributions and purchase intentions, the effect we obtained, overall, in our prior studies. Interestingly, even though the zone in which the effect of the joint appeal on purchase intentions is positive is much bigger than the zone in which it is negative, 78.00% of the respondents score 5 or higher on the SCI scale, with only 7% scoring 4 or less.

Robustness Checks

Gender bias. To test for gender differences in the responses, we integrated gender as an independent variable (female, male, or other) into an ANOVA in which we test for the effects of the independent variables appeal and SCI on the dependent variable purchase intention. The gender variable neither has a direct effect ($F(3, 300) = 1.18, p = .32$) nor does it moderate the effect of the treatment ($F(2, 300) = 1.37, p = .26$) or the effect of SCI ($F(2, 300) = 1.43, p = .24$) on purchase intentions.

Nonresponse bias. To test for nonresponse bias, we checked whether early and late respondents differed according to important demographic variables. For gender, we do not find a difference between early (mean age = 47.47 years) and late (mean age = 47.06 years) respondents. In an ANOVA with a dummy variable for late respondents (which is one for the second half of respondents who answered) as an independent, and age as a dependent variable, this difference is not significant ($F(1, 300) = 0.05, p = .83$). Furthermore, using Chi-Square testing, the difference in education levels across the two groups is insignificant ($p = .61$).
Common method bias. To test for a potential common method bias, we used Harman’s single-factor test. In support of the absence of a common factor, the model in which all constructs (i.e., intrinsic attributions, purchase intentions, SCI) are forced to load on one factor fits significantly worse ($\Delta$CFI = 0.402, $\Delta$TLI = 0.342, $\Delta\chi^2 = 2,080.292$, $\Delta df = 3$, significance of the $\chi^2$ difference test: $p < .000$) than a model with the proposed factorial structure.

General Discussion

In three studies, we find support for our basic assertion that adding an extrinsic appeal to an intrinsic appeal-based communication for a sustainable product decreases consumers’ interest in the product. Furthermore, this adverse effect of joint appeals occurs due, at least in part, to the diminished intrinsic attributions consumers make about the company’s motives to engage in good deeds. Finally, our results reveal interesting heterogeneity in consumers’ reactions to joint appeals: those who are less involved with sustainable consumption actually react more favorably, rather than unfavorably, to such appeals. This is accompanied by their more intrinsic attributions of the company’s motives relative to when it makes only an intrinsic appeal.

Theoretical Implications

Our findings contribute to the literature on consumer reactions to CSR/sustainability in several ways. First, in contrast to the predictions of most established theories of persuasion (e.g., Fishbein, 1979; Petty & Cacioppo, 1986), we demonstrate that when one of the appeals to consumers to purchase sustainable products is an intrinsic one, adding a second, extrinsic appeal reduces rather than increases consumers’ liking for the product. In other words, while prior research in this domain has examined the persuasiveness of single claims in increasing consumers’ affinity for sustainable products (see Sen et al., 2016 for review), this study suggests combining two individually strong claims regarding the benefits of purchasing a sustainable product into one communication may not increase, and, in fact, may under certain conditions, decrease the persuasiveness of that communication. Interestingly, this effect seems to be less likely to hold for consumers with lower sustainable consumption involvement, who are more persuaded by joint appeals. Given that these consumers are more likely processing the claims heuristically, through the peripheral route to persuasion (Petty & Cacioppo, 1986; Chaiken, Liberman, & Eagly, 1989), our findings are consistent with the extant notion that less involved consumers are more likely to rely on the number of appeals as a cue for persuasion.

At the same time, however, joint appeals cause lower involvement consumers to make more intrinsic attributions regarding the company’s motives. While this is not inconsistent with heuristic or peripheral processing, it suggests, alternately, that such consumers might actually deliberate over the appeals, thinking that if the company makes more of an effort to convince those with lower involvement with sustainable consumption, then it must really care intrinsically about sustainability, and marketing sustainable products. Further research is needed, clearly, to tease apart these alternate accounts. More generally, our findings point to a new and previously unexplored driver of consumers’ attributions: the type and number of appeals companies use to persuade consumers to engage in sustainable consumption. Past research has established that corporate communications are important signals used by consumers to evaluate the ethical stance of the company (e.g., Du et al., 2010). Our study advances the literature on sustainability communications by demonstrating the adverse attributional consequences, for most consumers, of using joint appeals to both intrinsic and extrinsic motivations. Although a plethora of studies has investigated customers’ attributions of companies’ CSR efforts in general (Brown & Dacin, 1997; Folkes & Kamins, 1999; Sen & Bhattacharya, 2001), ours is the first study to point to the interactive effect of appeal type and quantity on consumers’ attributions of a company’s sustainability motives.

Importantly, this research also adds to the large body of literature on the crowding out of prosocial behavior by extrinsic incentives (Ariely et al., 2009; Bénabou & Tirole, 2003; Frey & Jegen, 2001) in two key ways. First, while previous research on this crowding-out effect has been restricted primarily to charitable giving contexts, our study is the first to establish a similar effect in consumer reactions to the appeals companies make to encourage sustainable consumption. While this, in and of itself, might comprise a modest advance, it is made more significant by our implication of a novel other, as opposed to self, attribution process to underlie the phenomenon. Specifically, we show that extrinsic appeals can not only crowd out consumers’ own intrinsic motives to
behave prosocially but also their attributions, in the context of sustainable consumption, regarding the communicating company’s motives for acting prosocially by encouraging them to do so. Notably, extant accounts of the crowding-out effect are purely motivational: people are themselves demotivated by extrinsic incentives. Our findings expand this perspective by proffering a more cognitive account: extrinsic incentives can crowd out preference for sustainable products by changing people’s perceptions of the company’s motives for providing such products. Second, our findings point to interesting heterogeneity in consumers’ reactions to extrinsic incentives, establishing a boundary condition for the crowding-out effect (Ariely et al., 2009; Bénabou & Tirole, 2003). In fact, while previous research in economics has pointed theoretically to individual dispositions as potential moderators of motivation crowding (Frey & Jegen, 2001), we are the first, to the best of our knowledge, to document empirically, a crowding-in, rather than crowding-out, effect for the low sustainable consumption involvement consumers. As well, this moderation, importantly, comprises support for our attributional account of our basic outcome prediction, as opposed to the more established motivational one.

Interestingly, this moderation of our focal effect by involvement is also consistent, more broadly, with the literatures on consumer mindsets (Rucker & Galinsky, 2016; Rucker & He, 2016), identity-based motivation (Oyserman, 2009), and message alignment (Rucker, 2012), which, together, suggest that a company’s persuasion appeals are best matched to the motivational predisposition of the message recipients (i.e., intrinsic appeals for intrinsically motivated, higher sustainable consumption involvement consumers and extrinsic appeals for extrinsically motivated, lower involvement consumers). Future research taking such a mindset-matching perspective to examine the role of motivation matching (i.e., the motivations of consumers matching the perceived motivations of the company) in the individual differences documented by our research, and consumer responses to sustainability, in general, would be a worthy endeavor.

Practical Implications

From a managerial perspective, our findings contribute to our understanding of how companies can optimize their communications to get consumers to adopt their sustainable products. At the most basic level, our findings point to the potential inefficacy of the increasingly prevalent practice of using joint appeals to motivate sustainable consumption, particularly among the growing segments with higher sustainable consumption involvement. Our findings point to the need for a more targeted communications approach, with different appeal types aimed at segments that vary in their interest in consuming sustainably. While a majority of the respondents in our third study indicated fairly high involvement with sustainable consumption (i.e., most were self-identified “green” consumers), their proportion in the population is likely to vary across different markets and consumer demographics. Assuming that companies, over time, want more consumers to buy sustainable products, joint appeals may be particularly important in drawing in the less involved consumers.

Ideally, companies should conduct market research on their target audiences and elicit consumers’ predisposition toward sustainable consumption to adequately target the varying consumer groups. If direct targeting of individual consumers is possible (e.g., newsletter that is sent out via email to individual consumers), companies should use intrinsic-only appeals for highly involved recipients and joint appeals for low involvement consumers. If direct targeting is not possible (e.g., in-store communications, product labels), companies should seek to understand the predisposition of the majority of their consumers that this communication is targeting to maximize appeal effectiveness.

Limitations and Future Research

This study has some clear limitations, which point, in turn, to avenues for future research. First, our findings regarding the moderating role of sustainable consumption involvement come from only our final study, pointing to the need for more definitive examinations of this, and perhaps other, moderation(s). Second, although we consistently show the same pattern of results for four different products, real versus hypothetical companies, and varying dependent variables, future studies should attempt to replicate the results of this study using yet more variations in appeals and contexts to enhance the generalizability of the findings. Particularly important is the distinction between public and private products, the role of which in the relative efficacy, or lack thereof, of image versus material extrinsic appeal awaits a more systematic examination. Third, we reveal an interesting effect of appeal type for sustainable products but do not examine whether or when such an effect might
manifest as well for regular products. While our theorizing would argue against our demonstrated effect occurring for regular products as the type of intrinsic motive we focus on seems somewhat irrelevant in the case of such products, an interesting unanswered question pertains more generally to possible contexts in which crowding-out effects are evinced for regular products. Finally, our research does not examine the longevity of the joint appeal effect, and also its impact on other, longer-term pro-company outcomes such as loyalty. The ultimate significance of the insights offered by our study would clearly hinge on such longitudinal assessments.

Appendix A

Experimental Materials

Study 1: Bed Linen and Coffee

<table>
<thead>
<tr>
<th>Treatment texts, bed linen</th>
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</thead>
<tbody>
<tr>
<td>No appeal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic appeal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extrinsic (image) appeal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joint (intrinsic + image) appeal</td>
<td></td>
<td></td>
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<tr>
<td>Treatment texts, coffee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No appeal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic appeal</td>
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<td></td>
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<tr>
<td>Extrinsic (image) appeal</td>
<td></td>
<td></td>
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<tr>
<td>Joint (intrinsic + image) appeal</td>
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</table>

Study 2: Energy-Saving Fridge

<table>
<thead>
<tr>
<th>Treatment texts</th>
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<th></th>
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<tbody>
<tr>
<td>No appeal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic appeal</td>
<td></td>
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<tr>
<td>Extrinsic (image) appeal</td>
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<tr>
<td>Extrinsic (material) appeal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joint (intrinsic + image) appeal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joint (intrinsic + material) appeal</td>
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</tr>
</tbody>
</table>
Study 3: Drinking Bottle

Treatment texts

| Intrinsic appeal | Introduction text, followed by: “Purchase the Greenbottle to contribute to a cleaner environment!” |
| Joint appeal     | Introduction text, followed by: “Purchase the Greenbottle to contribute to a cleaner environment and save money!” |

Appendix B

Measures and Scale Evaluation

<table>
<thead>
<tr>
<th>Constructs and measurement items</th>
<th>Standardized loadings</th>
<th>Cronbach’s Alpha</th>
<th>AVE</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 1: Purchase Intentions for bed linen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would probably purchase this product at the next opportunity</td>
<td>0.881</td>
<td>.87</td>
<td>0.64</td>
<td>0.87</td>
</tr>
<tr>
<td>I would deliberately search for this product for purchasing it</td>
<td>0.881</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I generally would recommend this product</td>
<td>0.736</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would purchase this product spontaneously</td>
<td>0.678</td>
<td></td>
<td></td>
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<tr>
<td>CFA model fit: $\chi^2$ (df) = 5.545 (2); CFI = 0.998; TLI = 0.993; RMSEA = 0.050; SRMR = 0.009</td>
<td></td>
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<td></td>
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<tr>
<td>Study 1: Purchase Intentions for coffee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would probably purchase this product at the next opportunity</td>
<td>0.929</td>
<td>.89</td>
<td>0.67</td>
<td>0.89</td>
</tr>
<tr>
<td>I would deliberately search for this product for purchasing it</td>
<td>0.881</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I generally would recommend this product</td>
<td>0.702</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would purchase this product spontaneously</td>
<td>0.745</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>CFA model fit: $\chi^2$ (df) = 86.017 (2); CFI = 0.968; TLI = 0.904; RMSEA = 0.198; SRMR = 0.023</td>
<td></td>
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<tr>
<td>Study 2: Customer Attribution of Company’s Intrinsic Motivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[COMPANY NAME] engages in charitable projects out of a genuine concern to be socially responsible</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Study 2: Purchase Intentions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would probably purchase this product at the next opportunity</td>
<td>0.794</td>
<td>.80</td>
<td>0.53</td>
<td>0.82</td>
</tr>
<tr>
<td>I would deliberately search for this product for purchasing it</td>
<td>0.846</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I generally would recommend this product</td>
<td>0.608</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would purchase this product spontaneously</td>
<td>0.639</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Appendix B Continued

<table>
<thead>
<tr>
<th>Constructs and measurement items</th>
<th>Standardized loadings</th>
<th>Cronbach’s Alpha</th>
<th>AVE</th>
<th>CR</th>
</tr>
</thead>
</table>

CFA model fit: \( \chi^2 (df) = 34.786 \) (2); CFI = 0.987; TLI = 0.962; RMSEA = 0.091; SRMR = 0.016

Study 3: Customer Attribution of Company’s Intrinsic Motivation

The company acts in a responsible way to . . .
Assume responsibility toward the environment \( 0.905 \)
Assume responsibility toward society \( 0.951 \)
Support consumers to live a more sustainable lifestyle \( 0.924 \)
Express their honest feeling of responsibility \( 0.864 \)
I believe the company is genuinely concerned about being socially responsible \( 0.791 \)
I believe the company is committed to a good cause out of unselfish motives \( 0.671 \)
I believe the company’s commitment is based on the wish to do good \( 0.775 \)

CFA model fit: \( \chi^2 (df) = 258.824 \) (14); CFI = 0.889; TLI = 0.833; RMSEA = 0.241; SRMR = 0.061

Study 3: Socially responsible consumption involvement (SCI)

I avoid buying from companies that harm endangered plants or animals \( 0.755 \)
Whenever possible, I walk, ride a bike, car pool, or use public transportation to help reduce air pollution \( 0.563 \)
I avoid using products that pollute the air \( 0.840 \)
I avoid buying products that pollute the water \( 0.913 \)
I make an effort to avoid products or services that cause environmental damage \( 0.870 \)
I avoid buying products that are made from endangered animals \( 0.608 \)
I limit my use of energy such as electricity or natural gas to reduce my impact on the environment \( 0.699 \)

CFA model fit: \( \chi^2 (df) = 120.438 \) (14); CFI = 0.920; TLI = 0.881; RMSEA = 0.159; SRMR = 0.048

Study 3: Purchase Intentions

I would probably purchase this product at the next opportunity \( 0.916 \)
I would deliberately search for this product for purchasing it \( 0.871 \)
I generally would recommend this product \( 0.810 \)
I would purchase this product spontaneously \( 0.795 \)

CFA model fit: \( \chi^2 (df) = 3.757 \) (2); CFI = 0.998; TLI = 0.994; RMSEA = 0.054; SRMR = 0.009

Note. Sources: Purchase intention from White et al. (2012); Customer Attribution of Company’s Intrinsic Motivation (Study 2) from Du et al. (2010); Customer Attribution of Company’s Intrinsic Motivation (Study 3) from Du et al. (2007); Skarmeas and Leonidou (2013); Ellen et al. (2006); Graafland and Van de Ven (2006), Habel et al. (2016). \( df = \) degrees of freedom; CFI = comparative fit index; TLI = Tucker Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Appendix C

Additional check for the influence of the length of treatment

To rule out the possibility that the length of the treatment text is driving the results, we conducted an additional check. The participants (\( n = 148 \)) were university students (\( M_{\text{age}} = 20.51, SD = 2.06, 51.40\% \) male). In this study the product was an environmentally friendly laundry detergent, and the participants were assigned at random to one of two levels of the between-subjects Appeals factor: (a) intrinsic appeal (\( n = 60 \)); and (b) joint appeal: intrinsic appeal + intrinsic appeal (\( n = 88 \)). Both treatments appealed to the same motivation (intrinsic) but one of them was longer than the other, and accordingly included more intrinsic reasons to purchase the detergent. The appeals are shown in Figures A1(a) and A1(b). We used the same measure for purchase intentions as in the main studies.

To test for whether the length of the treatment text has an influence on purchase intentions, we conducted a one-way ANOVA with purchase intention as dependent variable and the two-level Appeals factor as the independent factor. Purchase
intentions do not vary significantly across the different appeal conditions ($F(1, 144) = 0.231, p = .63$). In addition, planned contrasts reveal that an intrinsic appeal does not produce higher purchase intentions ($M = 3.05$) than a joint (intrinsic + intrinsic) appeal ($M = 3.17; t(144) = 0.481, p = .63$). Thus, we can conclude that the length of the treatment text does not influence the results.

References


