Is Eco-Friendly Unmanly?
The Green-Feminine Stereotype and Its Effect on Sustainable Consumption

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Why are men less likely than women to embrace environmentally friendly products and behaviors? Whereas prior research attributes this gender gap in sustainable consumption to personality differences between the sexes, we propose that it may also partially stem from a prevalent association between green behavior and femininity, and a corresponding stereotype (held by both men and women) that green consumers are more feminine. Building on prior findings that men tend to be more concerned than women with gender-identity maintenance, we argue that this green-feminine stereotype may motivate men to avoid green behaviors in order to preserve a macho image. A series of seven studies provides evidence that the concepts of *greenness* and *femininity* are cognitively linked and shows that, accordingly, consumers who engage in green behaviors are stereotyped by others as more feminine and even perceive themselves as more feminine. Further, men's willingness to engage in green behaviors can be influenced by threatening or affirming their masculinity, as well as by using masculine rather than conventional green branding. Together, these findings bridge literatures on identity and environmental sustainability and introduce the notion that due to the green-feminine stereotype, gender-identity maintenance can influence men's likelihood of adopting green behaviors.

Keywords: gender identity maintenance, green marketing, environmental sustainability, stereotypes, motivated consumption

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As the threat posed by environmentally destructive behaviors intensifies, it becomes increasingly important to identify ways to increase environmental consciousness and eco-friendly behavior. One of the obstacles identified by prior research is that compared to women, men are less likely to be eco-friendly in their attitudes, choices, and behaviors (Davidson and Freudenburg 1996; Lee and Holden 1999). Women display greater concern and willingness to take action to help the environment, and this effect is robust across age groups and countries (Cottrell 2003; Dietz, Kalof, and Stern 2002; Levin 1990; Zelezny, Chua, and Aldrich 2000). In contrast, men litter more (Kallgren, Reno, and Cialdini 2000), recycle less (Zelezny et al. 2000), have a larger overall carbon footprint (Räty and Carlsson-Kanyama 2010), and feel less guilty about living a nongreen lifestyle (Tiller 2014).

Past research has explained this gender gap in environmental sustainability by exploring differences in personality traits typically observed in women versus men. For example, women's concern for the environment has been attributed to their tendency to be more prosocial, altruistic, and empathetic (Dietz et al. 2002; Lee and Holden 1999). Women also display superior perspective taking and a stronger ethic of care, which have both been linked to environmentalism (Zelezny et al. 2000). In addition, women may exhibit greater commitment to the environment because they are more inclined to adopt a future time perspective (Eisler and Eisler 1994) and are more concerned with health and safety, particularly if their children are living at home (Davidson and Freudenburg 1996).

While we do not dispute that personality differences between the sexes contribute to the gender gap in environmental sustainability, the present research offers a novel explanation for this phenomenon. Specifically, we propose that men's resistance may stem in part from a prevalent association between the concepts of *greenness* and *femininity* and a corresponding stereotype (held by both men and women) that green consumers are feminine. As a result of this stereotype, men may be motivated to avoid or even oppose green behaviors in order to safeguard their gender identity. The following section further explains the rationale behind our proposition that gender-identity maintenance, stemming from men's desire to avoid a prevalent green-feminine stereotype, contributes to the gender gap in sustainable consumption.

CONCEPTUAL DEVELOPMENT

The Green-Feminine Stereotype

Consistent with the idea that green products and behaviors are associated with femininity, survey data collected by OgilvyEarth suggest that "going green" is considered more feminine than masculine by a majority of American adults (Bennett and Williams 2011). There are several reasons why the concepts of *greenness* and *femininity* might be cognitively linked among both male and female consumers. For example, many proenvironmental messages use font styles and colors that are more feminine than masculine. In addition, many green marketing efforts target areas in which women tend to be more involved than men, such as cleaning, food preparation, family health, laundry, and domestic maintenance. More fundamentally, environmentalism and conservationism reflect caring and nurturing of the environment, which are prototypical feminine traits (Gilligan 1982; Tavris 1999; Watson 1994), and green consumers are rated as more cooperative, altruistic, and ethical than their nongreen counterparts (Mazar and Zhong 2010, study 1). Finally, to the extent that women are in fact more green than men, this association could simply

be the result of the exemplars that come to mind when thinking of people who typically engage in green behavior.

If an association between greenness and femininity is sufficiently strong, it may affect social judgments and self-perception. That is, men and women may judge those who engage in green behaviors as more feminine than those who do not, and to the extent that such a stereotype is internalized, men and women who engage in green behaviors may experience a heightened sense of femininity. Thus a green-feminine stereotype may be held by consumers of either gender and could affect perceptions of the self and of others.

Consumers' response to the existence of a pervasive green-feminine stereotype is likely to depend on both individual differences (e.g., the extent to which the consumer is concerned with gender-identity maintenance) and situational factors (e.g., gender cues that threaten or affirm gender identity). For example, a green-feminine stereotype is likely to discourage consumers from engaging in green behavior who, either dispositionally or situationally, feel a need to avoid feminine associations, but it may have less impact when consumers are not as concerned with maintaining a masculine gender identity. Based on this logic, consumers who feel motivated to undertake actions that serve to reinforce gender identity as a central aspect of their self-concept should be most influenced by the green-feminine stereotype.

Gender-Identity Maintenance

Social-identity theory contends that a portion of one's self-concept is derived from perceived group membership (Turner and Oakes 1986; Gal 2015 offers a review). This group membership may be a group to which one belongs, aspires to join, or actively avoids. In terms of identity signaling and maintenance, people tend to imitate the behavior of positive (Berger and Heath 2007, 2008; Escalas and Bettman 2003, 2005; McFerran et al. 2010; Wang, Zhu, and Shiv 2012) and aspirational ingroups (Englis and Solomon 1995), while refraining from acting in a similar fashion to dissociative outgroups (Berger and Heath 2007, 2008; White, Argo, and Sengupta 2012; White and Dahl 2006, 2007).

Prior research suggests that gender identity, which has been defined as the extent to which one identifies with being masculine or feminine, is an integral part of one's self-concept (Fischer and Arnold 1994; Spence 1985) and serves as the fundamental scaffolding that allows individuals to process information about themselves and the world around them (Bem 1981; Palan 2001). Moreover, because possessions and behaviors can act as signals of identity (Berger and Heath 2007, 2008) and prompt inferences about personal characteristics (Calder and Burnkrant 1977), gender identity can be maintained through one's choices.

The notion of gender-identity maintenance is consistent with the idea that self-discrepancies, which are inconsistencies between actual and desired self-views (Higgins 1987), prompt compensatory actions. Indeed, threats to one's membership status in a meaningful group can lead to compensatory efforts to reestablish ingroup status and restore a positive self-view. These efforts may include engaging in follow-up behaviors that are representative of the ingroup (Branscombe et al. 2002; Maass et al. 2003; Munsch 2012; Schmitt and Branscombe 2001) and/or distancing oneself from outgroup members (Branscombe et al. 1993; Maass et al. 2003; Quillian 1995; Tajfel and Turner 1986). In line with this, threatening men's gender identity can lead to derogation of women and greater explicit identification with a masculine identity (Maass et al. 2003; Schmitt and Branscombe 2001). The affirmation of group status, however, can have the opposite effect. For instance, when masculinity had been previously affirmed through a self-reflection task, men were more inclined to choose prototypically feminine food options that were listed in a menu (Gal and Wilkie 2010; experiment 4).

Interestingly, research suggests that men and women are differentially sensitive to maintaining their gender identity. In particular, men tend to be more attentive than women to maintaining their gender identity because they face greater penalties for gender-inconsistent transgressions (Bosson and Michniewicz 2013; Carter and McCloskey 1984; Martin 1990; McCreary 1994; Moller, Hymel, and Rubin 1992). For instance, research has shown that boys are punished more severely than girls for displaying gender-incongruent forms of play (Langlois and Downs 1980) and that gay men are perceived more negatively than lesbians in various domains (Herek 2000). Further, research has shown that men experience greater psychological damage following gender-inconsistent behavior than women (Aubé and Koestner 1992). Thus given the greater price they pay for making gender-incongruent choices, men may be more responsive to the subtle ways in which gender is often cued, such as through colors, shapes, sounds, numbers, and foods (Gal and Wilkie 2010). For instance, prior research has found that men tend to avoid products associated with female reference groups (White and Dahl 2006) and fear gender contamination of products and brands (Avery 2012).

Hypothesis Development

In accord with the notion that behavior is often guided by the need to maintain gender identity, particularly among male consumers, we posit that one plausible explanation for men's avoidance of environmentally friendly behaviors is that a pervasive mental association exists between greenness and femininity, such that engaging in green behaviors could threaten men's masculine identity. Thus we predict that due to the green-feminine association and its effect on social judgments and self-perception, men will be more likely than women to avoid green products and behaviors, particularly when their masculinity is threatened.

While the basic thesis of our research is that men may be motivated to eschew green choices in order to maintain their gender identity, there might be boundary conditions under which men may be willing to be associated with green products and behaviors in spite of their feminine connotation. For example, prior research suggests that men may be more likely to engage in an activity that is perceived as stereotypically feminine if their masculinity has been affirmed, but that they may be reluctant to do so when their masculinity has been threatened (Gal and Wilkie 2010). Building on this research, we predict that when their masculine identity is affirmed, men will feel less compelled to reassert their masculinity through nongreen behaviors and will therefore be more open to engaging in environmentally friendly behaviors. We likewise predict that when the association between greenness and femininity is weakened (e.g., through masculine branding), men will be more likely to engage in green (vs. nongreen) behaviors.

Across a series of seven studies, we test our hypotheses that both men and women mentally associate greenness with femininity, which leads them to stereotype green consumers as more feminine than nongreen consumers (studies 1, 2, and 3), and that as a result of this green-feminine stereotype, men's willingness to engage in green behavior is sensitive to gender-related cues that threaten or affirm their gender identity or influence a brand's gender associations (studies 4, 5, 6A, and 6B). Together, these studies aim to provide support for our prediction that due to the prevalent cognitive link between greenness and femininity, gender-identity maintenance contributes to men's relatively low engagement in green behaviors.

STUDY 1

The objective of study 1 was to test for an implicit cognitive association between the concepts of *greenness* and *femininity*. To do this, we used a Single Category Implicit Association Test (SC-IAT; Karpinski and Steinman 2006) to measure participants' implicit attitudes toward the perceived gender-affiliation and greenness of products. The rationale underlying the SC-IAT is that when asked to categorize stimuli, participants will respond more quickly when paired categories match (vs. mismatch) their subjective mental representation. For example, if participants cognitively represent green products as feminine, response latencies should be shorter when the label "Female" is paired with the compatible label "Environmentally Friendly" rather than the incompatible label "Environmentally Unfriendly." In a separate SC-IAT, we examined the extent to which greenness is associated with masculinity.

Method

A total of 127 university students (52.0% male; mean age = 21.42) were randomly assigned to complete either the Feminine SC-IAT (designed to test different combinations of femininity and greenness) or the Masculine SC-IAT (designed to test different combinations of masculinity and greenness). Each participant completed four blocks of trials. In each trial, the target stimulus (either the name of a person or the photo of a product) was displayed in the center of the screen and category labels were displayed in the upper right and left corners of the screen. For our Feminine SC-IAT [Masculine SC-IAT], participants categorized names as Female [Male] and products as either Environmentally Friendly or Environmentally Unfriendly. The procedures for both the Feminine SC-IAT and the Masculine SC-IAT were identical except for the gender of the names used. See online appendix A for stimuli and additional details.

Results

Using Greenwald, Nosek, and Banaji's (2003) improved scoring algorithm, we created an IAT D-score for each participant. The D-score is an effect size estimate that reflects strength of association between two concepts and is created by dividing differences between the mean response latencies of compatible and incompatible blocks by the standard deviation of all latencies in the blocks. IAT D-scores can range from -2 to $+2$, with the direction and size of the effect reflecting the strength of associations between the target concepts and attributes (Greenwald, McGhee, and Schwartz 1998).

For the Feminine SC-IAT, the mean IAT D-score was .23, which is significantly different from 0; $t(57) = 4.25$, $p < .001$, $d = 1.13$. Consistent with our prediction that greenness and femininity are cognitively associated, this positive D-score indicates that participants were quicker to categorize stimuli in compatible than incompatible trials. There was no difference in IAT D-score by participant gender; $F(1, 57) = .11$, $p = .74$, $\eta_p^2 < .01$, suggesting that both men and women cognitively associate the concepts of greenness and femininity.

For the Masculine SC-IAT, the mean IAT D-score was .03, which is not significantly different from 0; $t(68) = .56$, $p = .58$, $d = .14$, and there was no difference in this D-score by participant gender; $F(1, 68) = .69$, $p = .41$, $\eta_p^2 = .01$. The lack of a prevalent cognitive association between greenness and masculinity suggests that the concepts of femininity and masculinity may be independent constructs rather than polar ends of a single continuum.

Discussion

Study 1 provided evidence consistent with our theorizing that a mental association exists, among both men and women, between the concepts of *greenness* and *femininity*. Our theory further suggests that this green-feminine association results in a prevalent stereotype (held by both genders) that green consumers are more feminine than nongreen consumers—a stereotype that may encourage men to avoid eco-friendly behaviors. Whereas prior research has shown that women are more likely to engage in green behaviors than men, it has not examined the possibility that a person's green or nongreen behavior might impact others' perceptions of his or her gender identity. Our next study examines whether consumers who engage in green behaviors are indeed judged by others to be more feminine.

STUDY 2

In this study, we aimed to show that the association between greenness and femininity observed in study 1 affects social judgments, such that those who do (vs. do not) engage in green behavior are perceived as more feminine. It is important to document this stereotype because we theorize that men will be reluctant to engage in green behaviors if doing so would cause them to be perceived as feminine. Thus study 2 examined the prevalence of a stereotype, among both men and women, that green consumers are more feminine than nongreen consumers.

Method

Participants were 194 students (45.9% male; mean age = 23.05) simultaneously recruited from two private universities to participate in an online survey. Participants were randomly assigned to one of four conditions in a 2 (target: male vs. female) × 2 (behavior: green vs. nongreen) between-participant design. Participants read the following scenario that included an image of groceries in a plastic bag (nongreen behavior) or an image of groceries in a reusable canvas bag (green behavior): "Imagine you are at your local grocery store and see a [man/woman] leaving the checkout lane, carrying [his/her] groceries in a [plastic bag/reusable canvas bag]. Please indicate the extent to which you feel each word below describes this [man/woman]" (see online appendix B for stimuli).

Participants then used a 5 point scale (1 = Not at all; 5 = Perfectly) to provide ratings for 11 traits that were presented in a random order to each participant. Two traits (eco-friendly and wasteful) were intended as a manipulation check to ensure that using the reusable canvas bag was in fact perceived as more green than using the plastic bag. The remaining nine traits were considered to be stereotypically masculine (masculine, macho, and aggressive), stereotypically feminine (feminine, gentle, and sensitive), or gender neutral (athletic, attractive, curious). Our selection of these nine traits and their expected classification was empirically based, leveraging both prior research on

individuals' perceptions of the gender affiliations of these traits (Hoffman and Borders 2001; Holt and Ellis 1998) and our own pretesting.

Following this task, participants were asked to guess what this study was designed to test. They then reported their age, gender, gender identity, interest in dating men, interest in dating women, and indicated whether they were currently single or in a relationship.

Results

An analysis of responses to the hypothesis-guessing question showed that 21 participants explicitly linked gender or gender stereotypes to environmental behavior. However, the pattern of results does not change when these participants are excluded, so the analysis here includes the full set of respondents. Our between-participant manipulation of green versus nongreen behavior was successful; participants in the two green conditions rated the trait eco-friendly as more descriptive of the target ($M = 4.54$, $SD = .68$, $N = 94$) than participants in the two nongreen conditions ($M = 1.43$, $SD = .88$, $N = 100$; $t(192) = 27.42$, $p < .001$). Conversely, participants in the two green conditions rated the trait wasteful as less descriptive of the target ($M = 1.07$, $SD = .30$) than participants in the two nongreen conditions ($M = 2.44$, $SD = 1.09$; $t(192) = 11.68$, $p < .001$).

To test our prediction that the green target would be perceived as more feminine than the nongreen target, we first formed a femininity index by averaging the three feminine traits ($\alpha = .80$) and a masculinity index by averaging the three masculine traits ($\alpha = .76$). The creation of these indices was supported by principal component exploratory factor analysis with oblique rotation (Promax), which showed that these six traits loaded on the two hypothesized factors, together explaining 71.2% of the total variance. Moreover, a confirmatory factor analysis with the same six traits on two factors yielded a chi-square residual of 413 ($df = 15$, $p < .001$), a goodness-of-fit index of .95, a root square mean residual of .07, and a comparative fit index of .95. These statistics indicate a reasonable fit to the data, and the ϕ coefficient of .25 provides evidence of discriminant validity. Each loading estimate was highly significant ($p < .001$), and the .80 and .76 reliability of the feminine and masculine factors, respectively, was acceptable (table A in online appendix H shows the results of the factor analysis). Together, these results provide support for the notion that ratings on these six traits adequately capture perceptions of a target's masculinity versus femininity.

As expected, the femininity index differed significantly based on the target's environmental behavior; $F(1, 190) = 44.00$, $p < .001$, $\eta_p^2 = .19$, such that the green target ($M = 2.64$, $SD = .90$, $N = 94$) was perceived as more feminine than the nongreen target ($M = 1.82$, $SD = .86$, $N = 100$; table B in online appendix H lists the mean ratings for each trait. Not surprisingly, a main effect of the

target's gender was also observed; $F(1, 190) = 8.39$, $p = .004$, $\eta_p^2 = .04$, such that the female target ($M = 2.40$, $SD = 1.04$, $N = 95$) was perceived as more feminine than the male target ($M = 2.04$, $SD = .88$, $N = 99$). The interaction was not significant; $F(1, 190) = 2.42$, $p = .12$, $\eta_p^2 = .01$, indicating that both male and female targets were judged as more feminine when they engaged in green (vs. nongreen) behavior. Next, we examined whether the results were influenced by participants' gender, age, gender identity, interest in dating men, interest in dating women, or relationship status. Across all these demographics, participants seemed to hold the same stereotypes about the heightened femininity of consumers who engage in green behaviors; when these variables were included as covariates, the target's gender and environmental behavior remained significant predictors of femininity (p's $< .01$) but none of the covariates was significant (p's $> .37$).

We then examined perceptions of the targets' masculinity. The masculinity index also differed significantly across conditions, but this effect was driven entirely by the target's gender, such that the male target ($M = 1.67$, $SD = .74$, $N = 99$) was perceived as more masculine than the female target ($M = 1.38$, $SD = .63$, $N = 95$); $F(1, 190) = 8.52$, $p < .01$, $\eta_p^2 = .04$. There was neither a main effect of environmental behavior; $F(1, 190) = .28$, $p = .60$, nor a significant interaction; $F(1, 190) = .70$; $p = .40$. The different patterns observed for masculinity and femininity in this study and in study 1 are consistent with prior research that conceptualizes these constructs as independent rather than mutually exclusive (Hoffman and Borders 2001).

Our claim is that because green behavior is cognitively associated with femininity, targets who engage in green behavior will be perceived not only as more green, but also as more feminine. To test this claim, we examined whether the effect of green versus nongreen behavior on a target's perceived femininity was mediated by perceptions of the target's eco-friendliness. For this analysis, we used the femininity index as the dependent variable and a dummy variable to indicate the type of environmental behavior (1 = Green; 0 = Nongreen) as the independent variable. The moderator was an eco-friendliness index we created by averaging the wasteful (reverse-coded) and eco-friendly traits ($\alpha = .71$). Then, using Hayes's (2013, model 4) PROCESS macro, we found that the indirect effect of environmental behavior through eco-friendliness was positive ($B = .59$, $SE = .26$) and statistically different from zero (95% confidence interval [CI], .12–1.12), thus providing evidence of the suggested mediation.

Discussion

Consistent with our predictions, results of study 2 showed that consumers who engaged in green behavior were perceived by both male and female participants as more feminine than consumers who engaged in nongreen behavior.

The fact that none of the covariates we measured in study 2 moderated the effect is consistent with the results of study 1 in suggesting that the green-feminine association is prevalent across both genders. We argue that this association may discourage men from engaging in green behaviors, particularly if they are motivated to maintain a macho image and wish to avoid being stereotyped as feminine.

STUDY 3

Study 3 tests whether the green-feminine association can affect not only social judgments about others but also self-perception. Central to our hypothesis that gender-identity maintenance can affect sustainable consumption is the notion that the perception of one's gender identity can be influenced by environmentally friendly (vs. environmentally unfriendly) actions. Correlational data from a pretest (online appendix H offers details) showed that participants who indicated a higher [lower] degree of greenness perceived themselves as more [less] feminine, but in order to argue that this association promotes gender-identity maintenance, there must be evidence of a causal link between recalling green behavior and feeling a heightened sense of femininity. Therefore, in this study we tested whether people feel more feminine after being randomly assigned to recall a time that they performed a green versus nongreen action.

Method

Participants were 131 individuals (58.0% male; mean age = 35.21) recruited on Mechanical Turk (MTurk) to participate in an online study session. After completing an unrelated study, participants were randomly assigned to a green versus nongreen condition (between-participants) and prompted to recall and write about a time in which they performed an action that was good [bad] for the environment (online appendix C describes the stimuli). Following this task, participants indicated their gender and then indicated on two separate scales the degree to which they felt masculine and feminine (1 = Not at all to 7 = Extremely). After completing other demographic information (i.e., gender, age, race, and nationality), participants were prompted to guess the purpose of the study.

Results

Eleven participants correctly surmised that the environmental writing task was related to the gender-identity perceptions. However, the pattern of results does not change when these participants are excluded, so the analysis here includes the full set of respondents.

First, a univariate analysis of variance was run with the environmental action manipulation (green vs. nongreen) and participant gender (male vs. female) as the between-participant independent variables and participants' self-reported femininity score as the dependent variable. A marginal main effect of environmental behavior emerged; $F(1, 130) = 2.94$, $p = .09$, $\eta_p^2 = .02$, such that people reported feeling more feminine in the green condition ($M = 3.84$, SD = 1.90, $N = 67$) than in the nongreen condition ($M = 3.56$, SD = 2.04, $N = 64$). A main effect of participant gender also emerged; $F(1, 130) = 138.86$, $p < .001$, $\eta_p^2 = .52$, such that women ($M = 5.34$, SD = 1.36, $N = 55$) reported feeling more feminine than men ($M = 2.51$, SD = 1.40, $N = 76$). As expected, no interaction between the two independent variables emerged; $F(1, 130) = 1.23$, $p = .27$, $\eta_p^2 = .01$ indicating that both sexes showed similar patterns in terms of femininity perceptions.

Next, the same analysis was conducted with participants' self-reported masculinity score as the dependent variable. The main effect of environmental action was nonsignificant; $F(1, 130) = 2.38$, $p = .13$, $\eta_p^2 = .02$, but a significant main effect of participant gender emerged; $F(1, 130) = 149.88$, $p < .001$, $\eta_p^2 = .54$, such that women ($M = 2.40$, SD = 1.49, $N = 55$) reported feeling less masculine than men ($M = 5.31$, SD = 1.26, $N = 76$). As expected, no interaction emerged between the two independent variables; $F(1, 130) = .04$, $p = .84$, indicating that both sexes showed similar patterns in terms of masculinity perceptions.

Discussion

Whereas the findings of study 2 showed that people judge others who engage in green (vs. nongreen) behavior as more feminine, the findings of study 3 show that the same stereotype is applied to perceptions of the self. Specifically, recalling green (vs. nongreen) behavior led to a higher self-perception of femininity among both men and women. The similar patterns observed across male and female participants in the first three studies suggest that the green-feminine association is held by both men and women and that participants of both genders are influenced by this association as they make judgments about others' femininity and about their own femininity.

In the next four studies, we examine whether consumers' response to this prevalent green-feminine stereotype is a function of gender-identity maintenance by testing how consumers' likelihood to engage in sustainable behavior is influenced by gender-related cues. Given the findings of past research that men are more likely than women to be influenced by gender-identity maintenance motives (Bosson and Michniewicz 2013; Carter and McCloskey 1984; Gal and Wilkie 2010; Martin 1990; McCreary 1994; Moller et al. 1992), in study 4 we restrict our sample to men and test whether a gender-identity threat will lead men to reassert their masculinity through nongreen choices. In subsequent studies, we examine the extent to which women may also be influenced by gender-identity maintenance motives.

STUDY 4

The objective of study 4 was to test whether a gender-identity threat can decrease men's preference for green products. If our theory is correct that men avoid green behaviors in order to maintain their gender identity, then choice of green (vs. nongreen) products should decrease in response to threats that are specific to gender identity, but not to other kinds of ego threats (e.g., an age-related threat). Moreover, given the findings of studies 2 and 3 that engaging in green behavior leads to greater perceptions of femininity by both others and the self, we wanted to test whether the effect of a threat would differ in a public versus private context. Although prior research has found that gender-identity threats have a greater effect on men's public versus private behavior (White and Dahl 2006), the findings of study 3 that recalling green behavior can increase self-perceptions of femininity suggest that threats may also influence private behavior.

Method

A total of 403 American men (mean age = 32.68) were recruited from MTurk to participate in the study. Participants were randomly assigned to one of four conditions in a 2 (threat type: gender vs. age) × 2 (shopping context: public vs. private) between-participant design. All participants were instructed to imagine receiving a $150 gift card from coworkers with a note saying "we thought this card was perfect for you—happy birthday!"

Next, participants were shown a Walmart gift card designed to threaten their ego by making them feel either feminine (gender threat) or old (age threat). The gender-threat card featured a floral design on a pink background with the words "Happy Birthday" in a frilly font. The age-threat card featured a surprised emoji below the text "You're HOW Old?!" with the words "Happy Birthday" in a standard font (online appendix D shows the stimuli). Pretests showed that compared to the age-threat card, the gender-threat card was perceived as more feminine; $t(185) = 15.9$, $p < .001$, and less masculine; $t(185) = 16.5$, $p < .001$. The shopping context was manipulated by asking participants in the public condition to think about how they would feel taking the gift card to a store and handing it to the cashier. In contrast, participants in the private condition were asked to think about how they would feel using the gift card to shop online at home. On the following screen, to reinforce our manipulation and ensure that participants had paid attention to the threat, we asked participants to describe the card's appearance.

Next, participants were asked to imagine using the gift card to purchase three different products—a lamp, backpack, and batteries. Product descriptions were adapted from Griskevicius, Tybur, and Van den Bergh (2010). Within each product category, participants were shown two items (one green and one nongreen) and asked to choose between them. The order in which each pair of items were presented was counterbalanced across participants. Participants then provided their general attitude toward Walmart and completed demographic information (i.e., nationality, first language, age, and gender).

Results

Although only mem had been recruited to participate in this study, 14 participants reported their gender as female and were therefore excluded. This left 389 participants for the analysis. The choice data were analyzed using a logit model with threat type (gender vs. age) and shopping context (public vs. private) as two between-participant variables and product category as a repeated measure. Results showed a main effect of threat type, such that across all three product categories, participants were less likely to choose a green product following a gender threat ($M = 41.9\%$, $N = 198$) than an age threat ($M = 49.6\%$, $N = 191$); $z = 2.51$, $p < .01$. In each of the three individual product categories, the choice share of the green product was lower following gender versus age threat. For batteries, this effect was significant ($M_{gender} = 35.9\%$ vs. $M_{age} = 48.7\%$; $\chi^2(1) = 6.57$, $p = .01$); for backpacks, the effect was marginally significant ($M_{gender} = 28.8\%$ vs. $M_{age} = 37.2\%$; $\chi^2(1) = 3.10$, $p = .08$), and for lamps, the effect was not significant ($M_{gender} = 61.1\%$ vs. $M_{age} = 62.8\%$; $\chi^2(1) = 0.12$, $p = .73$). There was no main effect of shopping context ($z = .53$, $p = .60$), nor a significant interaction between threat type and shopping context ($z = -1.03$, $p = .30$).

Discussion

Consistent with our theory that due to gender-identity maintenance, men's environmental choices can be influenced by gender cues, results showed that following a gender-identity (vs. age) threat, men were less likely to choose green products. The fact that shopping context did not appear to influence participants' choices could be explained by the notion that men seek to maintain their gender identity not only in public, but also in private, shopping contexts. Building on the findings of studies 2 and 3, this interpretation is consistent with the notion that men may be affected by both impression management and self-perception concerns when making choices between green and nongreen products. Another possible explanation could be that the subtlety of the shopping context manipulation or the hypothetical nature of the study caused participants to underestimate the true impact of a public versus private shopping context on their decisions. In any case, the significant main effect of threat type was consistent with our key prediction that a gender threat would be more likely than an age threat to lead men to avoid green products.

In the next study, we further examine the influence of gender-identity maintenance on sustainable choices by testing whether affirming a man's masculinity affects his preference for a green (vs. nongreen) product. We also explore how feeling more masculine will influence *women's* likelihood of engaging in green behavior. Considering that the results of studies 1, 2, and 3 were not gender dependent and were observed among women as well as men, it is plausible that the gender gap in environmental behavior could be explained by a combination of both dissociative identity goals among men and associative identity goals among women (White et al. 2012). That is, perhaps men shun green behaviors to avoid feeling feminine, but women seek out green behaviors in order to feel more feminine. However, it is also possible, considering the findings of prior research that women are less motivated to maintain their gender identity than men (Bosson and Michniewicz 2013; Carter and McCloskey 1984; Gal and Wilkie 2010; Martin 1990; McCreary 1994; Moller et al. 1992), that while the green-feminine stereotype is prevalent among both men and women, it is more likely to influence the environmental choices of men than women.

STUDY 5

The objective of study 5 was to test whether masculine affirmation can differentially influence preferences for green products (vs. product preferences more generally). Building on the notion that self-affirmation can attenuate the impact of a social-identity threat (Gal and Wilkie 2010; White and Argo 2009), we reasoned that if our theory is correct that men avoid green behaviors in order to maintain their gender identity, then affirming their masculinity should increase their comfort expressing a preference for green products. It was less clear to what extent women would be influenced by gender-identity motives.

Method

A total of 472 participants (49.4% male; mean age = 35.29) recruited from MTurk completed the study. The experiment involved a 2 (gender identity: control vs. masculinity affirmation) × 2 (product type: green vs. nongreen) × 2 (participant gender: male vs. female) between-participant design, of which the former two factors were randomly determined. The primary dependent variable was product preference.

As a cover story, participants were informed that the study session consisted of two short unrelated studies being conducted by two separate teams of researchers. In the first study, participants were asked to write about what they did the previous day and were informed that their writing sample would be analyzed in real time using a propriety algorithm developed by the National Linguistics Research Laboratory. The cover story further explained that in tests conducted with more than 12,000 participants, the algorithm was shown to be over 97% accurate in predicting personal characteristics of the writer. Participants in the masculine affirmation condition were informed that the analysis strongly indicated that they write more like a man than a woman, whereas participants in the control condition were given no feedback. The idea for this feedback manipulation was prompted by prior research that documents the use of an algorithm to guess an author's gender based on a writing sample (Koppel, Argamon, and Shimoni 2002). After rating how masculine and feminine they currently perceived themselves to be (1 = Not at all to 11 = Extremely), participants were thanked and began a purportedly separate study.
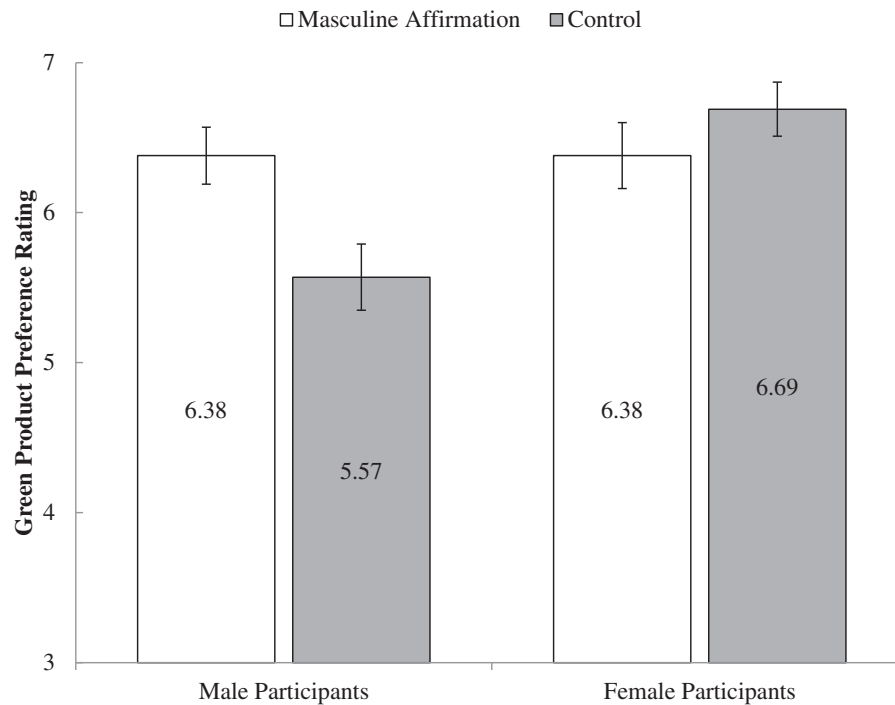
In the second part of our study, participants were asked to read about a new household drain cleaner, with green versus nongreen descriptions adapted from Newman, Gorlin, and Dhar (2014). In the green condition, the product was described as being "better for the environment" and in the nongreen condition, it was described as being "better at dissolving grease." The remaining text was identical across conditions (online appendix E shows the stimuli).

Upon reading the description, participants were asked to complete three measures of product preference (1 = Definitely wouldn't try it, definitely wouldn't buy it, likely to be worse than current drain cleaner to 9 = Definitely would try it, definitely would buy it, likely to be better than current drain cleaner) and to provide a rationale for their ratings. Participants then rated how masculine and feminine they found the cleaner on two bipolar scales (1 = Not at all feminine/masculine to 11 = Very feminine/very masculine).

To ascertain if participants suspected that the first half of the study was meant to make them feel more masculine in order to see how that would impact their choices in the second half of the study, participants were asked to hypothesize the purpose of the studies. Specifically, they were asked, "What do you think was the purpose of the two studies you conducted today? Be specific." Finally, given that this study measured product preferences on an evaluation scale, we wanted to capture individuals' dispositional tendency to have positive versus negative attitudes toward objects. Therefore, participants were asked to complete the 16 item Dispositional Attitude Measure (DAM) (Hepler and Albarracin 2013). While this measure was primarily included to control for individual variance, there is some evidence that dispositional attitudes vary by gender (Hepler and Albarracin 2013, study 2); thus including DAM as a covariate was also expected to help control for gender differences in product evaluations (particularly since gender was a factor in our experimental design that could not be randomly assigned). No other potential covariates were included.

FIGURE 1

MASCULINE AFFIRMATION REDUCES MEN'S INHIBITIONS TOWARD A GREEN PRODUCT (STUDY 5)

NOTE.—In a no-feedback control, men preferred a green product less than women. However, following masculine affirmation, men's preference for the green product increased significantly.

Results

Based on two independent coders' judgments of the hypothesis-guessing question (disagreement between coders was resolved by a third coder), 14 participants could be excluded. However, the pattern of results does not change when these participants are excluded, so the analysis here includes the full set of respondents.

Our manipulation of product type was successful; the green version of the product was viewed across genders to be less masculine than the nongreen version ($M = 6.12$, $SD = 2.18$, $N = 246$ vs. $M = 7.60$, $SD = 2.23$, $N = 226$); $F(1, 470) = 52.93$, $p < .001$, $\eta_p^2 = .10$, and more feminine than the nongreen version ($M = 6.07$, $SD = 2.21$, $N = 246$ vs. $M = 4.46$, $SD = 2.29$, $N = 226$); $F(1, 470) = 60.80$, $p < .001$, $\eta_p^2 = .11$. Moreover, our masculine affirmation manipulation was also successful; compared to participants in the control condition, participants in the masculine affirmation condition perceived themselves to be more masculine ($M = 6.94$, $SD = 3.39$, $N = 231$ vs. $M = 5.34$, $SD = 3.41$, $N = 241$); $F(1, 470) = 25.96$, $p < .001$, $\eta_p^2 = .05$ and less feminine ($M = 4.56$, $SD = 3.18$, $N = 231$ vs. $M = 6.02$, $SD = 3.20$, $N = 241$); $F(1, 470) = 24.77$, $p < .001$, $\eta_p^2 = .05$. No significant differences were observed on these measures between male and female participants (all p's $> .14$).

Next, a univariate analysis of covariance was run with the gender-identity manipulation (control vs. masculinity affirmation), participant gender (male vs. female), and product type (green vs. nongreen) as the between-participant independent variables, a composite product preference measure ($\alpha = .83$) as the dependent variable, and the DAM ($\alpha = .78$) as a covariate. This analysis yielded a marginally significant three-way interaction; $F(1, 450) = 3.62$, $p = .06$, $\eta_p^2 = .01$, a significant two-way interaction between the gender-identity manipulation and gender; $F(1, 450) = 3.80$, $p = .05$, $\eta_p^2 = .01$, and a main effect of gender; $F(1, 450) = 6.61$, $p = .01$, $\eta_p^2 = .01$. The DAM control variable was also significant; $F(1, 450) = 13.11$, $p < .001$, $\eta_p^2 = .03$. All other effects were not significant; p's $> .16$.

In decomposing this three-way interaction, we found a significant two-way interaction between the gender-identity conditions and gender among participants who evaluated the green product; $F(1, 235) = 7.47$, $p < .01$, $\eta_p^2 = .03$, but no significant two-way interaction between gender-identity conditions and gender among participants who evaluated the

nongreen product; $F(1, 214) = .04$, $p = .84$. As predicted, men in the masculine affirmation condition ($M = 6.38$, $SD = 1.57$, $N = 68$) preferred the green product more than men in the control condition ($M = 5.57$, $SD = 1.56$, $N = 50$); $F(1, 450) = 7.91$, $p < .01$, $\eta_p^2 = .02$. In contrast, women showed no difference in preference for the green product across gender-identity conditions; $F(1, 450) = 1.20$, $p = .28$. As expected, men in the control condition ($M = 5.57$, $SD = 1.56$, $N = 50$) disliked the green product more than women in the control condition ($M = 6.69$, $SD = 1.54$, $N = 73$); $F(1, 450) = 15.30$, $p < .001$, $\eta_p^2 = .03$. In contrast, men and women in the affirmation condition did not differ in their preference for the green product; $F(1, 450) = 0.001$, $p = .98$. These results, illustrated in figure 1, suggest that while men typically prefer green products less than women, affirming their masculinity can increase preference for green products (in comparison to a control group) to be similar to that of women.

Discussion

Convergent with the green-feminine association observed among both men and women in our prior studies, the green product used in study 5 was perceived by both men and women as more feminine and less masculine than a nongreen version of the same product. The results of the study were also consistent with our hypothesis that due to this green-feminine association, men in a control condition would engage in gender-identity maintenance and prefer the product less than women. We further reasoned that affirming men's masculinity would mitigate the need for men to engage in gender-identity maintenance, resulting in increased preferences for a green product. As expected, men whose masculinity was affirmed preferred the green product more than men in the control group and to a similar degree as women. However, this pattern was not observed in preferences for a nongreen product, suggesting that the affirmation manipulation differentially affected preferences for green and nongreen products among men. Together, these findings suggest that one avenue to increase male preference for green products is to affirm their masculinity.

Although women and men both perceived the green product as more feminine and less masculine than the nongreen product, unlike men, women's preferences for a green product were unaffected by our gender-identity manipulation. Thus this study provides converging evidence with our earlier studies that both men and women associate greenness and femininity. It also suggests that the green-feminine association may affect the environmental decisions of men more than women, consistent with prior research that women are less concerned than men with gender-identity maintenance (Bosson and Michniewicz 2013; Carter and McCloskey 1984; Gal and Wilkie 2010; Martin 1990; McCreary 1994; Moller et al. 1992).

STUDY 6

Study 6 aimed to highlight a boundary condition for the effect observed in earlier studies. Specifically, we hypothesized that presenting a green stimulus in a more masculine frame might attenuate its cognitive association with femininity and temper men's reluctance to embrace proenvironmental causes. Thus study 6 tests the effectiveness of masculine branding as a practical tool marketers can use to reduce men's inhibitions toward green behaviors in both a lab setting (study 6A) and in the real world (study 6B).

Study 6A

We expected that willingness to donate to a green nonprofit might be influenced by masculine branding via colors, fonts, words, and symbols. Research suggests that dark colors tend to be perceived as more masculine than light colors (Fugate and Phillips 2010), that traditional square, bold fonts tend to be perceived as more masculine than frilly, rounded, curlier fonts (Davies 2002; Gal and Wilkie 2010), and that words can carry masculine or feminine connotations (Corbett 1991; Tight 2006). For example, Coke Zero was designed to be perceived as more masculine than traditional diet colas through the use of more masculine colors, fonts, and words (zero vs. diet) (Stoeffel 2014). Analogously, we examined whether framing a green nonprofit as less feminine through the use of colors, fonts, and words could reduce men's tendency to avoid proenvironmental behaviors.
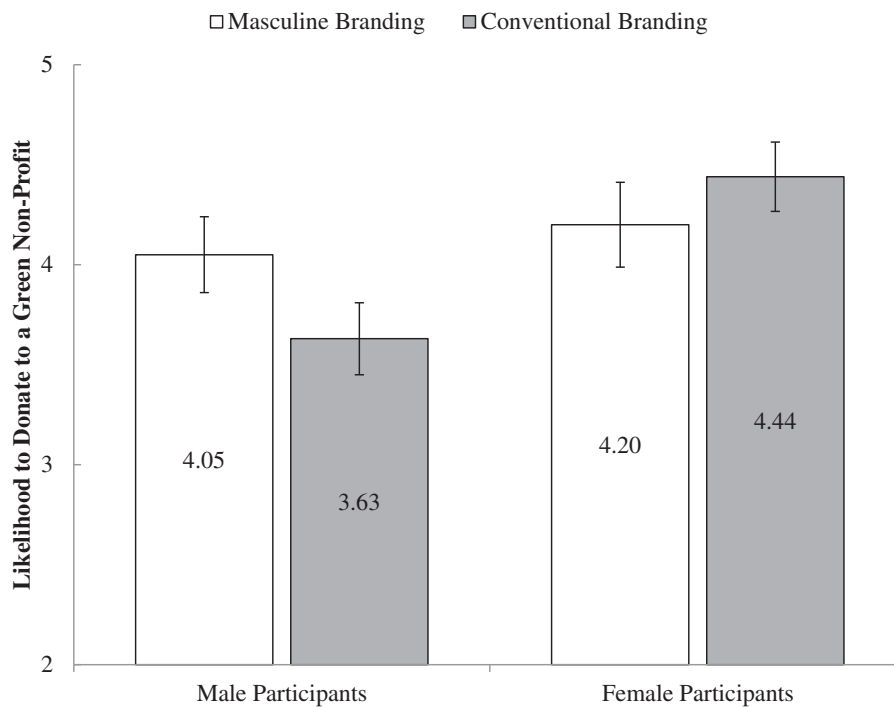
Method

Experiment 6A had a 2 (branding: conventional vs. masculine) × 2 (participant gender: male vs. female) design. Participants were 322 individuals recruited on MTurk (59.3% male; mean age = 32.43) who were randomly assigned to either the conventional or masculine branding condition. Participants in both branding conditions were asked how likely they would be to donate to a nonprofit on a 7 point scale from 1 = Not at all likely to 7 = Extremely likely based on viewing a logo of the nonprofit and reading a brief description of its mission.

In the conventional branding condition, the organization was named Friends of Nature, the logo was green and light tan with a tree symbol, the font was frilly, and the mission of the organization was described in terms of preserving nature areas. Conversely, in the masculine branding condition, the organization was named Wilderness Rangers, the logo was black and dark blue with a howling wolf symbol, the font was bold and lacked frills, and the mission of the organization was described in terms of preserving wilderness areas (online appendix F describes the stimuli). We reasoned that both branding conditions would similarly affect perceptions of the organizations' proenvironmental

FIGURE 2

MASCULINE BRANDING REDUCES MEN'S INHIBITIONS TO DONATE TO A GREEN NONPROFIT ORGANIZATION (STUDY 6A)

NOTE.—Following exposure to conventional green branding, men were less likely than women to donate to a green nonprofit. However, following exposure to masculine green branding, men and women were similarly likely to donate.

missions, but that the masculine-branded green organization would be perceived as more masculine and less feminine than the conventional-branded green organization. The perception of masculinity could be attributed to a combination of the more masculine color scheme, font, symbols (wild animal vs. tree), and word choice (wilderness vs. nature). Although both symbols reflect the natural environment and use the term "wilderness" or "nature" to refer to the unspoiled natural environment, we surmised that the former, being tied to the stereotypical male traits of adventure seeking and nonconformity (Zuckerman and Kuhlman 2000), would have a more masculine connotation. To assess the impact of the difference in logos on participants' perceptions of the masculinity and femininity of the different organizations, after indicating their likelihood of donating to the organization, participants were also asked to indicate how masculine and how feminine they would feel wearing a T-shirt featuring the logo of the organization, both on 7 point scales ranging from 1 = Not at all to 7 = Extremely.

Results

Pretesting among 151 participants confirmed that the masculine- and conventional-branded organizations were perceived as similarly proenvironmental ($M = 6.29$, SD = .92 vs. $M = 6.46$, SD = .76); $t(149) = 1.27$, $p = .21$ (rated on 7 point scales from 1 = Not at all to 7 = Very much). There were no significant differences in these perceptions by gender. In the main study, participants reported they would feel more masculine wearing a T-shirt featuring the masculine-branded logo than a T-shirt featuring the conventional-branded logo ($M = 3.83$, SD = 1.62, $N = 163$ vs. $M = 3.43$, SD = 1.55, $N = 159$); $t(320) = 2.27$, $p = .02$; likewise, participants reported they would feel less feminine wearing a T-shirt featuring the masculine-branded logo than a T-shirt featuring the conventional-branded logo ($M = 3.03$, SD = 1.50, $N = 163$ vs. $M = 3.49$, SD = 1.58, $N = 159$); $t(320) = 2.69$, $p < .01$. Thus consistent with the intent of our manipulations, the conventional-branded logo was perceived as similarly proenvironmental, but more feminine than the masculine-branded logo.

Our analysis revealed a main effect of participant gender on donation likelihood, such that women ($M = 4.33$, SD = 1.72, $N = 131$) were more likely to donate than men ($M = 3.85$, SD = 1.67, $N = 191$); $F(1, 318) = 6.27$, $p = .01$, $\eta_p^2 = .02$. There was no main effect of branding, with a similar likelihood of donating to the conventional-branded ($M = 3.99$, SD = 1.63, $N = 159$) and masculine-branded

nonprofit ($M = 4.10$, SD $= 1.78$, $N = 163$); $F(1, 318) = .21$, $p = .65$. Consistent with the notion that men tend to be less eco-friendly than women, men in our study were less likely to donate to the conventional-branded green nonprofit than women ($M = 3.63$, SD $= 1.61$, $N = 89$ vs. $M = 4.44$, SD $= 1.55$, $N = 70$); $F(1, 318) = 9.10$, $p = .003$, $\eta_p^2 = .03$. Moreover, consistent with our prediction for this experiment, men and women were similarly likely to donate to the masculine-branded green nonprofit ($M = 4.05$, SD $= 1.71$, $N = 102$ vs. $M = 4.20$, SD $= 1.91$; $N = 61$); $F(1, 318) = .29$, $\eta_p^2 < .01$. This difference in the effect of the framing manipulation was reflected in a marginal gender by branding interaction; $F(1, 318) = 3.01$, $p = .08$, $\eta_p^2 = .01$. These results are illustrated in figure 2.

To test the possibility that perceptions of femininity/masculinity mediated the effect of masculine versus conventional branding on men's and women's likelihood of donating to a green nonprofit, we used model 14 of Hayes's (2013) PROCESS macro. We predicted that men's greater likelihood of donating to the masculine-branded nonprofit (over the conventional-branded nonprofit) would be mediated by greater perceived masculinity (or lower perceived femininity), whereas this mediating effect would be absent (or perhaps opposite) for women.

We ran the model twice, once using perceived masculinity and once using perceived femininity as the mediating variable. Perceived masculinity and perceived femininity were operationalized as the degree to which participants' reported feeling masculine or feminine wearing a T-shirt branded with the logo of the nonprofit. The independent variable (branding), the mediating variables (perceived femininity/masculinity), and the moderating variable (gender) were entered in predicting donation likelihood. In the model where perceived femininity was entered as the mediator, evidence for moderated mediation was not significant. Conversely, in the model where perceived masculinity was entered as the mediator, the indirect effect of branding on donation likelihood through perceived masculinity was contingent on gender (Index of Moderated Mediation $= .17$, 95% CI, .02–39), in that it was significant for men (B $= .13$, SE $= .07$, 95% CI, .02–28), but not for women (B $= -.04$, SE $= .05$, 95% CI, $-.17$ to .03). Thus the moderated mediation suggests that men's increased donation likelihood was due to the greater perceived masculinity of the masculine-branded (vs. conventional-branded) green nonprofit.

Study 6B

The purpose of this field study was to extend the findings in study 6A to a more realistic setting by showing that masculine branding can reduce men's resistance to an eco-friendly car.

Method

This field study was conducted with 73 customers (58.9% male) who visited one of three different BMW car dealerships in Northern China during the same one-month period. The sales teams at these dealerships and most customers in China refer to the BMW i3 as an eco-friendly car (环保型车). This conventional green branding could discourage male shoppers from being interested in the car. However, we predicted that branding this environmentally friendly model with a masculine name could mitigate men's inhibitions. Consequently, we designed two types of print ads (conventional branding vs. masculine branding) for the BMW i3 (online appendix G describes the stimuli). For the conventional branding ad, we used the original car ad without changing any information. For the masculine branding ad, we changed only the name of the car; instead of the "2015 BMW i3 Eco-friendly Model (环保型)," it was branded as the "2015 BMW i3 Protection Model (捍卫型)," with the latter being a masculine word in Chinese. All other information remained the same (as requested by the dealers). Customers who visited these dealerships and agreed to participate were randomly assigned to view one of these two ads and asked how much they liked the car (1 $=$ Dislike a lot, 5 $=$ Like a lot) and their overall feeling about driving this car to work (1 $=$ Very bad, 5 $=$ Very good).

Results

Because the two dependent measures were highly correlated ($\alpha = .87$), we averaged them to form a composite evaluation measure. A general linear model, with gender and two types of branding (conventional vs. masculine) as two independent variables and consumers' evaluation of the car as the dependent variable, showed that the two-way interaction of branding and gender was significant; $F(1, 69) = 17.15$, $p < .001$, $\eta_p^2 = .20$. Specifically, two contrasts showed that relative to conventional green branding, masculine branding significantly increased male customers' evaluation ($M = 3.95$, SD $= .87$ vs. $M = 3.05$, SD $= 1.14$); $F(1, 69) = 9.69$, $p < .005$, $\eta_p^2 = .12$, but decreased female customers' evaluation ($M = 2.93$, SD $= .96$ vs. $M = 3.91$, SD $= .78$); $F(1, 69) = 7.82$, $p < .01$, $\eta_p^2 = .10$. This finding that masculine branding can increase men's (but not women's) preference for a green car is consistent with our prediction that masculine branding is one way to decrease gender-identity threat among male consumers. Neither the main effect of branding ($M = 3.56$, SD $= 1.03$ vs. $M = 3.42$, SD $= 1.08$); $F(1, 69) = .36$, $p = .55$, $\eta_p^2 = .005$ nor the main effect of gender was significant ($M = 3.51$, SD $= 1.10$ vs. $M = 3.45$, SD $= .99$); $F(1, 69) = .07$, $p = .79$, $\eta_p^2 = .001$.

Discussion

The results from study 6 were consistent with our proposition that men avoid green behaviors at least in part to maintain a macho image, and that masculine (vs. conventional) branding can increase men's likelihood to donate to green organizations (study 6A) and their evaluation of green products (study 6B). These findings identify masculine branding as a managerially relevant boundary condition and complement prior research (Stafford and Hartman 2012) in suggesting that perhaps men would be more willing to make environmentally friendly choices if the feminine association attached to green products and actions was altered.

Of interest is that masculine branding resulted in less favorable evaluations among female customers in study 6B. Although we did not find evidence that women's preferences were impacted by product gender associations in our other studies (e.g., studies 5 and 6A), the finding of study 6B is consistent with the idea that women, like men, tend to prefer products that match their gender identity. This suggests that a strategy to weaken the association between greenness and femininity through branding may be most effective when the majority of customers are men.

GENERAL DISCUSSION

The central focus of this research was to examine why a gender gap exists in sustainable behavior. We argued that women's likelihood to embrace sustainable behaviors more readily than men may be partially explained by an association between green behavior and femininity that threatens the gender identity of men. Consistent with this theorizing, we provide the first experimental evidence of the implicit cognitive association between the concepts of *greenness* and *femininity* (study 1), and show that this association can affect both social judgments (study 2) and self-perception (study 3) among both men and women. Focusing on the downstream consequences of this green-feminine stereotype, studies 4, 5, and 6 suggest that as a result of gender-identity maintenance, gender cues (e.g., those that threaten or affirm a consumer's gender identity or that influence a brand's gender associations) are more likely to affect men's (vs. women's) preferences for green products and willingness to engage in green behaviors.

At a conceptual level, these results help to bridge literatures on gender-identity maintenance and environmental sustainability and introduce the notion that gender-identity maintenance can influence men's likelihood of adopting green behaviors. Our findings complement prior work in transformative consumer research that has investigated means to facilitate the adoption of green behaviors and the consumption of green products (Goldstein, Cialdini, and Griskevicius 2008; Griskevicius et al. 2010; Kidwell, Farmer, and Hardesty 2013). While prior research has tended to focus on facilitating sustainable consumption through enhancing the appeal of green products or behaviors, our research differs conceptually in its focus on facilitating sustainable consumption through attenuating men's inhibitions.

Our findings that this inhibition can be mitigated through masculine affirmation or masculine branding suggest that similar interventions may be effective in other domains where gender stereotypes have been shown to affect consumer behavior. For example, prior research shows that men actively avoided a product named the "ladies' cut steak" due to its feminine connotations, particularly when the product was to be consumed in public (White and Dahl 2006) and that the extent to which individuals would prepare for a hurricane was affected by whether its name is masculine or feminine (Jung et al. 2014). Moreover, prior work has identified conditions under which women engage in gender-identity maintenance by avoiding masculine products such as meat (Rozin et al. 2012). Although our studies did not provide strong evidence that women were as motivated as men to maintain their gender identity, we did find that the green-feminine stereotype was as prevalent among women as men. These findings illuminate our understanding of how products with strong associative links to a particular gender can influence the way consumers behave.

More generally, our findings also add to a growing body of research pointing to a link between identity and consumers' tendency to engage in sustainable behavior. For example, recent work shows that identity-linked products are more likely to be recycled rather than trashed (Trudel, Argo, and Meng 2016). Similarly, prior research suggests that adherence to social norms about environmental behavior may depend on the extent to which individuals identify with a particular reference group (Goldstein et al. 2008). Other work suggests a link in the opposite direction of causality—that mere exposure to green products can alter a general sense of moral self that guides consumer behavior (Mazar and Zhong 2010). Our findings that gender identity can influence consumers' likelihood to engage in green behaviors provide additional evidence in support of the link between identity and sustainability.

This work also contributes to an understanding of the similarities and differences between genders in environmental attitudes and behaviors. While we found strong evidence that a green-feminine association is prevalent among both genders, our findings also suggest that the extent to which this association affects green attitudes and behaviors is influenced by gender-identity maintenance. Specifically, our finding that women's (vs. men's) behaviors and choices are less influenced by the green-feminine stereotype is consistent with prior research showing that women tend to be less preoccupied than men with gender-identity maintenance (Bosson and Michniewicz 2013; Carter and McCloskey 1984; Gal and Wilkie 2010; Martin 1990; McCreary 1994; Moller et al. 1992). However, our results do not necessarily preclude the possibility that women's

willingness to engage in green (vs. nongreen) behaviors may be influenced by an associative motive to undertake actions consistent with a feminine gender identity. More broadly, our findings raise the question of whether gender-identity maintenance tends to be more associative or dissociative (e.g., whether men engage in gender-identity maintenance primarily to avoid feminine associations or to protect masculine associations). Although our measures of masculinity and femininity showed a strong inverse correlation, the differences we observed are consistent with prior research (Hoffman and Borders 2001) in suggesting that masculinity and femininity may be unique constructs rather than a single bipolar construct. Future research may further explore gender differences in gender-identity maintenance motives, as well as whether these motives tend to be more associative or dissociative.

In terms of managerial and policy implications, our findings suggest masculine branding as a strategy that marketers and policymakers may consider when promoting green products and behaviors to men. Marketers have used gender as a branding segmentation strategy for a wide array of products (Wolin 2003), and masculine branding of stereotypically feminine products has already been attempted by marketers in a number of product categories. For instance, diet soda is a category traditionally considered more feminine, but several brands of diet soda have recently framed their products to be masculine using slogans such as "Dr. Pepper 10—it's not for women" and "Pepsi Max—the first diet cola for men." Similarly, Powerful Yogurt is a yogurt brand designed specifically for men, and Broga is a yoga studio for men. In another example, although masculinity is often conceptualized as being in opposition to home and domesticity, home improvement products have nevertheless become associated with masculine identities such as suburban-craftsman and family-handyman (Moisio, Arnould, and Gentry 2013). These examples are consistent with prior research suggesting that the identity signaled by a particular product or behavior can change when a new social group identifies with it (Berger and Rand 2008) and highlight the possibility that masculine branding could be an effective strategy for altering the feminine association attached to green products and actions.

In conclusion, this research enhances our understanding of the role gender-identity maintenance plays in men's greater likelihood than women to avoid environmentally friendly behavior. Despite a prevalent stereotype that green consumers are more feminine than nongreen consumers, we show that men's inhibitions about engaging in green behavior can be mitigated through masculine affirmation and masculine branding. Given the serious threat to the environment posed by failure to adopt green behaviors, we hope that the actionable solutions identified by this research will attract the interest of researchers, marketers, and policymakers and prompt additional research in this important domain.

DATA COLLECTION INFORMATION

Data for study 1 were collected from students at Notre Dame in October 2015 and analyzed by the second author. Data for study 2 were simultaneously collected from students at both Notre Dame and Seattle University in September 2015 and jointly analyzed by the first and fourth authors. Data for study 3 were collected from MTurk in October 2015 and analyzed by the second author. Data for study 4 were collected from MTurk in March 2016 and jointly analyzed by the second and third authors. Data for study 5 were collected from MTurk in January 2016 and jointly analyzed by the first and second authors. Data for study 6A were collected from MTurk in October 2015 and analyzed by the fifth author. Data for study 6B were collected from visitors to BMW dealerships in Beijing in December 2015 and analyzed by the third author. For all studies, data were discussed and results reviewed on multiple occasions by each author.

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