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Real Men Go Green: Environmentalism, Threatened Masculinity, and Identity Recovery

Gabrielle H. Wilson
Western Washington University, wilso377@wwu.edu

Real Men Go Green: Environmentalism, Threatened Masculinity, and Identity Recovery

By

Gabby Wilson

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of the Requirements for the Degree
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ADVISORY COMMITTEE

Dr. Alex Czopp, Chair

Dr. Kristi Lemm

Dr. Christie Scollon

GRADUATE SCHOOL

Dr. David L. Patrick, Dean

Master's Thesis

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Gabby Wilson
May 24, 2023

Real Men Go Green: Environmentalism, Threatened Masculinity, and Identity Recovery

A Thesis
Presented to
The Faculty of
Western Washington University

In Partial Fulfillment
Of the Requirements for the Degree
Master of Science

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May 2023

Abstract

Masculinity is a precarious and highly valued social identity. Threatening masculinity leads to a range of compensatory responses to recover manhood, which may also impact men's engagement in sustainable behaviors. Men might embrace or avoid pro-environmentalism when a masculine or feminine gender identity is signaled. The current research applied processes of gender socialization and identity maintenance to the context of environmentalism across two studies. Overall findings showed that masculinity threats can have varied consequences in sustainable contexts, moderated by men's level of identification with their gender. Study 1 (N = 208) examined if pro-environmental behaviors acted as a threat to masculinity, leading to general compensatory strategies to reassert manhood through embracing masculine attributes and preferences and rejecting feminine attributes and preferences, moderated by masculine identification. Results showed that men with low masculine identification expressed less endorsement of masculine attributes when threatened, but higher identification overall was related to higher masculine attribute endorsement. Study 2 (N = 394) assessed if pro-environmental behaviors, specifically those aligned with masculine norms, would be embraced as recovery strategy in response to a general masculinity threat. Results showed an overall pattern of men with higher masculine identification distancing from all pro-environmental behaviors, demonstrating that even sustainable behaviors that align with masculine norms may have underlying feminine associations. This research provides insight into the environmentalism gender gap and highlights the importance of masculine identification in how men experience and recover from identity threats in sustainable contexts.

Keywords: masculinity, gender identity, environmentalism, sustainable behavior, masculinity threats, masculine identification

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Climate change threatens the future of every person on the planet, and our window of time to avert crisis is rapidly closing (IPCC, 2022). While many people are aware of the climate crisis and care that their behaviors have an impact, only a small percentage consistently engage in sustainable choices (Dong et al., 2020). An even smaller proportion of everyday environmentalists are men; women consistently engage in more sustainability (Hunter et al., 2004; McCright & Xiao, 2014). This gap may arise from gender socialization processes and masculinity ideals, as care for nature requires self-transcendence, compassion, and other orientation, while masculinity idealizes self-enhancement, aggression, power, and control. Nature and sustainability are also typically associated with feminine attributes and values and may present a threat to men's masculinity (Brough et al., 2016; Reynolds & Hasslam, 2011). Applying established methodology and processes of threatening masculinity to the novel context of sustainability may uncover important insight into men's relative lack of pro-environmental behavior. Across two studies, the current research investigated how gendered subcategories of pro-environmental behaviors might act as both a threat and recovery mechanism for masculinity, subsequently predicting change in men's sustainable engagement.

Nature and Gender

Nature and femininity are both implicitly and explicitly linked, and environmentalism aligns with traditional feminine roles and stereotypes (Brough et al., 2016; Reynolds & Haslam, 2011; Swim et al., 2020; Zelezny et al., 2000). The concept of "going green" is considered more feminine than masculine by a majority of surveyed US adults (Bennett and Williams, 2011). Across two Single Category Implicit Association Tests (SC-IAT) which examined gender associations with green consumerism, male and female participants were quicker to categorize

stimuli associated with “Female” (female names, such as Linda and Jessica) and “Environmentally Friendly” (green products, such as a reusable water bottle or compostable bags) together compared to “Male” (male names, such as David and Jacob) and “Environmentally Friendly” (Brough et al., 2016). Lui et al. (2019) found a similar implicit women-nature association, such that men and women responded faster when names of women and nature words (e.g., plants, birds, trees) were paired together, compared to names of men and nature. Additionally, a content analysis of sampled visual media images showed women are represented with nature more often than men (Reynolds & Haslam, 2011). Across two popular online stock photography libraries, the number of images representing women and nature was significantly higher than the number of images of men and nature.

In a follow up experiment, Reynolds and Haslam (2011) extended research assessing the implicit associations between women and nature to include explicit links, theorizing that the association should also be present at a conscious level. Participants reported their associations between nature and gender and whether they liked nature more when it was characterized as a man versus woman. Participants rated which gender (male or female) was more associated with nature, how gendered nature was perceived to be (on a scale of masculine to feminine), and preference for nature when characterized as male or female (e.g., “Do you like nature more when it is portrayed as male or female?”). Participants thought women were more associated with nature than men, viewed nature as more feminine than masculine, and perceived nature more positively when it was characterized as female instead of male. These studies reflect a woman-nature association that may tie into hegemonic systems of power that relegate both women and nature to stereotypically restrictive societal roles by defining them as special and in need of protection (Dahl et al., 2015). Relatedly, traditional gender frameworks reward women for

caretaking and nurturing roles. This may help explain the woman-nature association, as environmentalism and conservation behaviors reflect care, altruism, and empathy towards nature, which are traits typically associated with feminine norms and values (Brough et al., 2016).

The association between greenness and femininity also extends into social judgements of an individual's green behavior. For example, consumers who engage in green behavior are perceived as more feminine by others, and individuals rate themselves as more feminine after acting sustainably, showing judgement towards others and the self can both be consequences of environmentalism (Brough et al., 2016). After reading a scenario of a man or woman leaving a store with groceries in a plastic (non-green) or reusable (green) bag, participants judged both male and female targets who engaged in the green behavior as more feminine than targets who engaged in non-green behavior. Similarly, participants asked to write about a time when they engaged in an environmentally friendly action rated themselves as more feminine measured across two questions compared to participants who were asked to write about engaging in an action that harmed the environment.

Masculine Gender Identity

Gender identity, or how masculine or feminine an individual identifies, is an integral part of self-concept and is one of the foremost social categories (Fiske, 1991). As gender identity is integral to the self, it is consistently performed through choices, attitudes, and norm adherence to maintain ingroup membership status. Performing gender identity may present an especially strong strain for men. Unlike womanhood and femininity, which are perceived to be more biologically founded and developed, manhood is attributed to social processes and must be performed and earned (Vandello & Bosson, 2012). Masculinity is constructed as a reflection of power, most prominently over women and other groups, and relatedly over nature. A masculine

identity shapes cognition, affect, and behavior, and establishes norms that are appropriate for men to adhere to (Bosson & Michnieqicz, 2013). Men may even hold an antifemininity mandate as part of gender role development, such that rejecting feminine tendencies, traits, and behaviors is the strongest and most pervasive norm of masculinity (Bosson & Michnieqicz, 2013; Thompson, Grisanti, & Pleck, 1985).

In most contexts, men feel more intense pressure to be masculine than women do to be feminine as masculinity is hard to earn and easy to lose (Vandello & Bosson, 2013). Because of the precarious nature of masculinity, men who violate gender norms often experience greater negative consequences and punishment compared to female norm transgressors. For example, parents punish male children for gender non-congruent behavior more than female children, gay men are perceived more negatively than lesbian women, and men whose masculinity is questioned experience heightened anxiety, fear, and anger (Langlois & Downs, 1980; Lytton & Romney, 1991; Herek, 2000). Since a reduction of masculinity has high social repercussions, men have strong incentive to preserve their masculine identity and constantly reinforce it through actions, values, and everyday behaviors. These norms may subsequently shape the way men view environmental protection due to the woman-nature association.

Threats to Masculinity and Masculine Overcompensation

As there is an intense strain and precariousness associated with masculinity, it is also easily threatened. A threat to masculinity comprises the backlash, social judgement, and range of negative consequences a man may experience resulting from violating gendered expectations or failing to live up to the prototypical male image (Dahl et al., 2015; Glick et al., 2007). Threatened masculinity has two major consequences. First, men experience affective discomfort which stems from others' perception of the self, and concern that there is a public loss of

masculine status (Dahl et al., 2015). This leads to a second consequence aimed at re-establishing the lost identity: men are likely to overcompensate with extreme masculine behaviors and activities as a reparative strategy (Cheryan et al., 2015; Vandello & Bosson, 2013). For example, threatened men will overshoot group norms to signal stronger endorsement of their manhood, such as reporting a greater number of past sexual partners, exaggerating their height, and displaying higher levels of aggression (Cheryan & Monin, 2005; Cheryan et al., 2015; Gallup et al., 2007).

Another potential compensation strategy men use in response to a threat is to avoid stereotypic femininity. Distancing from feminine attitudes and behaviors is a core characteristic of masculinity, therefore exhibiting femininity is considered a failure of masculinity (Bosson, Prewitt-Freilino, & Taylor, 2005; Dahl et al., 2015). Men who received false feedback that they did poorly on an online masculinity test or a test of handgrip strength showed less interest in feminine products (e.g., "A free trial day at Health and Body Day Spa") than masculine products (e.g., "Two tickets to a Cardinal Basketball Game"; Cheryan et al., 2015). Rejecting feminine preferences may be a stronger assertation of masculinity than embracing masculine preferences, as claiming ingroup status by distancing from outgroup preferences is a more convincing identity indicator (Cheryan et al., 2015).

Masculine overcompensation is a well-established psychological process, and threatening masculinity under different contexts has a variety of compensatory responses that have both immediate behavioral and social consequences. Masculinity threats influence attitudes towards sexual coercion, such that threatened men are more likely to blame victims of sexual assault and exonerate perpetrators in date rape scenarios (Muncsh & Willer, 2012). In financial contexts, men who experience threats are motivated to take higher financial risks and favor immediate

fiscal rewards as they adopt an extreme risky and impulsive mindset to reestablish manhood (Weaver et al., 2013). Threatened men also oppose transgender rights more strongly compared to threatened women and unthreatened men, are more supportive of war, show increased homophobia, and show more positive attitudes towards patriarchal hierarchies and masculine superiority (Harrison & Michelson, 2018; Willer et al., 2013). These findings highlight masculinity as a formidable social force which can both harm others and maintain power over women, and, relatedly, nature.

Given that threatened men embrace masculinity and reject femininity, the same overcompensation process could impact environmental attitudes and behaviors. From one angle, valuing sustainability or engaging in sustainable behaviors might present a threat to masculinity due to environmentalism aligning more with traditional feminine roles and stereotypes (Brough et al., 2016; Reynolds & Haslam, 2011; Swim et al., 2020). As men are likely to reject feminine attitudes and behaviors in response to an identity threat, masculine norms may predict a decreased likelihood of engaging in sustainability (Bloodhart & Swim, 2020; Cheryan et al., 2015). For example, using eco-labeled cleaning products that appear "more girly" may threaten masculinity both due to feminine branding and the sustainable action itself aligning more with stereotypical household roles that women are relegated to. Given this threat, men might be more likely to reject subsequent sustainable actions and seek to redeem their masculinity through compensatory behaviors that may ultimately work against sustainable goals (e.g., eating more meat).

A second approach to the masculinity-environmentalism relationship is assessing if there are also instances where men could use pro-environmental behaviors as an identity signaling strategy to compensate for lost manhood. When under threat, men are likely to use the most

convincing overcompensation strategy available to redeem their identity, which could be a (masculine) sustainable choice in some contexts (Cheryan et al., 2015). For example, eco-friendly construction practices or engaging in environmental protests are sustainable actions that align with masculine norms of strength, bravery, and aggression. If men are both motivated to engage in compensatory actions to reassert their masculinity and given the option of sustainable behaviors that display more masculine characteristics at surface level, they may embrace instead of avoid environmentalism.

Gendered Environmentalism

Pro-environmental behaviors are actions intended to re-establish a sustainable balance with the natural world and protect the environment from future negative consequences. They can be measured via both an individual's intention to engage in pro-environmental actions (for example, signing a pledge to reduce energy usage) or via the action itself (directly reducing individual energy usage). While pro-environmental behaviors are associated with femininity in general, there are also gendered subcategories of specific sustainable actions that align with both feminine and masculine roles (Swim et al., 2020).

Patterns of gender socialization for men and women develop into differential levels of environmental concern. For women, feminine norms of caretaking may extend into a worldview that values maintaining life and relationships and developing higher levels of altruism (Hunter et al., 2004). Additionally, gendered expectations for women as homemakers and caretakers shape higher engagement in environmentalism associated with these roles. Consequentially, women are socialized to be more involved in private-sphere society, such as taking care of the home (Tindall et al., 2003). Therefore, private-sphere PEBs, especially those that focus on household behaviors such as recycling and sustainable food purchasing, are associated with women more than men as

they more closely align to feminine role stereotypes like nurturance (Hunter et al., 2004; Swim et al., 2020). Household environmental behaviors may have a low behavioral cost for women to engage in, as they are more familiar with private sphere gendered domains (Diekmann & Preisendorfer, 1998).

In contrast, men are socialized to be more involved in the public sphere of society, as traditional masculine roles value men as breadwinners and protectors (Tindall et al., 2003). This has consequences for environmentalism, as when PEBs are moved into the public sphere, men show higher engagement (Hunter et al., 2003). For example, men are equally engaged in PEBs such as membership in activist groups and joining environmental protests, as they fit with traditional masculine values of dominance and bravery, and are also public (Hunter et al., 2004). Additionally, men are more likely to engage in environmentalism (regardless of the public or private nature of the behavior) if the PEB signals something about their identity.

Environmental Consequences of Masculinity Threats

As performing gender is an especially intense strain for men, PEBs that signal masculinity may provide the necessary reparation following a threat to masculinity. The overcompensation response may have consequences for the likelihood to embrace or reject environmentalism. Feminine PEBs might be rejected in response to a masculinity threat or comprise a threat in themselves, while masculine PEBs might be embraced due to the male identity they signal. For example, men who received a floral pink gift card were more likely to choose nongreen over green products (Brough et al., 2016). As green consumerism is a PEB associated with femininity, men's rejection of green behaviors is consistent with the idea of avoiding femininity as a compensatory response to threat. However, an alternative and untested response to threat would also consider PEBs that align with masculine roles. When given the

option to respond to an identity threat with masculine instead of feminine PEBs, men may increase instead of decrease their engagement.

As men show engagement in PEBs that align with masculine values, masculine PEBs may be used as an identity maintenance strategy to signal and repair manhood. For example, masculine PEBs more strongly signal sexual identity (specifically, heterosexuality) compared to feminine PEBs (Swim et al., 2020). After reading a "day in the life" scenario about a male or female target engaging in masculine (e.g., "adhering to a vehicle maintenance plan"), feminine (e.g., "line drying clothes"), or neutral PEBs (e.g., "using energy efficient lightbulbs"), participants were asked to give their judgement of the target's sexual identity. Both male and female targets who engaged in gender conforming PEBs (women who engaged in feminine PEBs and men who engaged in masculine PEBs) were judged as more heterosexual compared to participants who engaged in gender bending behaviors. Gender nonconforming male targets (i.e., men who engaged in feminine PEBs) were rated as less likely to be heterosexual compared to gender conforming men, suggesting participants questioned men's heterosexual identity when the target engaged in gender nonconforming actions. Additionally, masculine PEBs helped affirm men's heterosexuality more compared to women. Overall, this study indicates that people may use gender role violations or conformity as indictors to make judgements about sexuality, especially for men. As heterosexuality is a core ideal of hegemonic masculinity, affirmations of heterosexual identity consequently affirm masculinity. Feminine sustainable actions present a threat to that identity, but masculine PEBs may help to signal the desired identity.

Additionally, men are more likely to donate to an environmental non-profit and express preference to buy a green versus non-green car if the green product is presented with masculine branding (Brough et al., 2016). In a study of car purchase preferences, a masculine depiction of

pro-environmental behaviors (e.g., an electric car) helped preserve men's macho image, and therefore they were more likely to embrace green choices. Therefore, if given the option of masculine PEBs in response to a threat, men may use engagement in masculine PEBs as a recovery strategy. Integrating gender role theory with pro-environmental behaviors could be key to understanding possible barriers for engaging in PEBs, as well as potential solutions to reduce the gender gap in environmentalism.

Current Research

The goal of the current work was to address men's engagement in environmentalism through the application of gender socialization and masculine identity signaling processes to the novel context of sustainable behavior. Across two studies, I aimed to show that 1) feminine PEBs can be threatening to masculinity, resulting in masculine overcompensation in the form of exaggerated masculine attributes and preferences, and 2) masculine PEBs can be an identity recovery strategy in response to a threat, and masculine overcompensation should motivate men to embrace sustainability more when given the option of PEBs that align with and signal male norms.

STUDY 1

Are Feminine Pro-Environmental Behaviors A Threat to Masculinity?

Study 1 assessed whether engagement in feminine pro-environmental behavior threatened masculinity. Since PEBs are globally considered more feminine, and femininity threatens manhood, sustainability might be threatening to masculinity. Male participants were asked to list sustainable behaviors they had recently engaged in, then given false data about "typical men's" sustainable choices, featuring only masculine PEBs. Men were then asked about their endorsement of attributes in the context of creating a dating profile, and preferences in the

context of prizes they would like to receive. In response to being threatened, men may overcompensate with extreme masculine behaviors, such as increased ratings of masculine attributes and preferences. Men's compensation might also lead to rejection of further sustainability due to the association between femininity and nature, providing evidence for why men may be less likely to embrace sustainable behavior.

Study 1 Hypotheses

Hypothesis 1: In response to their masculinity being threatened by their supposed feminine sustainability engagement, men will report higher ratings of masculine (compared to feminine) attributes (e.g., reported height, masculine traits) and choices as a compensatory strategy, compared to men who have not experienced a threat.

Exploratory analysis: I also explored if gender identification moderated men's threat response. Examining this effect was an exploratory analysis and I did not have a priori hypotheses for how low versus high levels of gender identification would predict ratings of masculine attributes and preferences between threat versus non-threat conditions.

Method

Participants

Using this design, a power analysis calculated through the statistical program G*Power with alpha equal to .05, power = .90, and a medium effect size of .25 indicated that 172 participants were needed for the study. An effect size of .25 is consistent with the range of medium to large effects found in related masculinity threat literature (Brough et al., 2016; Cheryan et al., 2015; Weaver et al., 2013). Given the potential of unusable data or attrition, the desired number of total participants was rounded up to 200 (100 per condition).

All participants were recruited online through Western Washington University's undergraduate student subject pool (SONA), In order to participate, all respondents indicated they were over 18 years of age and male-identifying. Original data collection via SONA resulted in 264 participants, however, upon reviewing the data it became apparent that 23 participants misinterpreted directions in filling out the form assessing their sustainable behaviors, listing hobbies or interests unrelated to environmental sustainability, and instead about general wellbeing. Although not included in original exclusion criteria, since understanding and responding to the sustainability form was imperative to the effectiveness of the threat manipulation, these participants were removed. An example response of a participant that qualified for removal based on their response to listing sustainable actions completed in the past six months was: *"Spending time with friends, Going to work, Being around family",* and when asked why these actions were important to them responded: *"Spending time with friends and family is something that is enjoyable for me. Life is very stressful but the people in my life remind me to keep pushing myself to be/do better. Going to work is not fun on the other hand, however, it's important for me to have enough money to do things on my bucket list and to enjoy the expensive side of life."* Some participants appeared to have misinterpreted "sustainable behaviors" as hobbies or actions that sustained their psychological health. This may have been due to lack of context in the sustainability form instructions, combined with the cover story that the study was assessing their interests and hobbies as college students.

The study was reopened to 30 additional participants with updated directions in the sustainability form, noting that sustainability in the context of their responses referred to environmental care and protection. In total, 294 participants completed the study. This was reduced to 208 after removal of participants who did not meet inclusion criteria (48 failed the

attention check, 15 had entirely missing data, and 23 misinterpreted the sustainability form). The final sample identified as mostly straight (71.2% straight or heterosexual, 13.5% bisexual, 7.2% gay, 2.4% pansexual, 1.4% asexual, 4.3% other) and white (76.9% White, 10.1% Asian, 6.2% Multiracial, 3.8% Latinx, 2.4% Black, and 0.5% other) with a mean age of 20.61. All participants received undergraduate course credit for completion of the study.

Procedure

Ethical approval was obtained from Western Washington University's IRB prior to starting the study. Informed consent was electronically collected from participants, and the study was delivered online through the survey platform Qualtrics.com. Participants first responded to a short survey assessing their masculine identification, disguised with additional demographics questions.

Once participants completed demographics, they received instructions that they would first be asked to fill out an online questionnaire concerning sustainable choices, and then answer survey items about their interests and hobbies as college students. After filling out the two sustainability form questions, participants were told that on the next survey screen they would be shown real data and information gathered about how men behave sustainability towards the environment, and to take at least one minute to review the infographic. In reality, all participants reviewed false infographic data, and were randomly assigned to receive information reflecting the masculine threat or control condition.

After reading the infographics, participants completed a manipulation check, then were directed to respond to two measures. The first measure was intended to assess masculine, feminine, and neutral attributes in response to a threat and was presented to participants in the form of creating an imaginary online dating profile listing the values they thought were most

important to display to others. The list of values and attributes was adapted from similar measures used in Cheryan et al., (2015) and attributes listed in the Bem Sex Role Inventory (Bem, 1974), and based on previously identified masculine attributes (including height, athleticism, aggression, and handiness with tools), (Cejka & Eagly, 1999; Gross & Blundo, 2005; Schmitt & Branscombe, 2001). The list included an equal number of masculine, feminine, and neutral items, randomized so the participant would not easily be able to discern their gendered nature. Participants were also asked to list their height and weight on the fake profile. They were then asked to complete a measure of masculine, feminine, and neutral preferences, adapted from a similar measure used in Cheryan et al., (2015). Preferences were framed as prize options for completing the study, and participants were asked to rate which they would most like to receive[1]. Participants were then debriefed and redirected back to SONA to receive their course credit for study completion.

Materials

Screening survey

Gender Identity. Participants were asked to confirm their gender identity in a prescreening survey on SONA. Only respondents who selected "Male" moved forward to scheduling an online time slot for the study.

Gender Identification

Participants rated five statements about their collective identity as a man (α = .81) on a scale from 1 *(strongly disagree)* to 5 *(strongly agree)*. The same scale has been used in similar research (Glick et al., 2015) and was adapted from questions assessing the centrality or

[1] One participant's name was randomly drawn once data collection was complete to receive a Western Washington University water bottle (which was one of the "prize" options).

importance of collective identity from Luhtanen and Crocker (1992). The scale included questions such as *"Being a man is an important part of who I am"* (see Appendix A for details).

Threat to Masculinity

Participants were asked to write down instances of engaging in sustainable behavior they could recall from the past 6 months, and why they chose to do them. Participants were expected to list mostly common, feminine PEBs (i.e., recycling, using eco-friendly products, eating less meat) as generally people are more aware of them than masculine PEBs, the actions are relatively non-demanding, and they are often the behaviors which marketing and climate change educational campaigns emphasize (Piscitelli & D'Uggento, 2022). Confirming my expectations, reviewing participant responses to sustainable actions they had engaged in after data collection was complete showed that almost all participants listed common feminine or neutral behaviors (i.e., recycling, taking public transportation). While there were a few participants who listed more masculine-seeming sustainable behaviors (i.e., activities related to hunting or fishing), no participants listed masculine behaviors that were shown on the threat infographic. After filling out both parts of the sustainability form, participants were then directed to read false infographic data about common sustainable behaviors that men engage in. See Appendix B for details of the sustainability form and infographics.

Masculine threat condition. The false infographic that participants were shown contained two components which comprised the threat to masculinity. Instructions presented before the infographic noted that the magazine that the data were collected from was an authority in men's interests and lifestyles, and that the "infographic showcases real data recently collected in an online poll of GQ male readers on their sustainable habits and why they find environmentalism important in their lives." GQ Magazine was selected as a well-known men's

magazine to present as the false data source. As GQ features general lifestyle, entertainment, and news content, it seemed more realistic that the magazine would share environmental information compared to other male-oriented magazines (e.g., Men's Health), and would be more believable to participants as "real data".

The first section of the infographic highlighted men's most common green behaviors, which were presented as "8 out of 10 survey participants reported recently doing at least one of the following behaviors." The sustainable behavior list was comprised of five masculine pro-environmental behaviors (e.g., "Donating to a hunting or sportsmen's organization"), adapted from Swim et al. (2020). The second part of the infographic described the top three reasons why men listed engagement in sustainable behaviors was important to them. The featured responses discussed how the PEBs were important to elements of poll respondents' masculinity (e.g., "Enjoy hunting or outdoor sports and want to conserve wilderness recreation areas"), implying what a "real man's" response should be. Given that I expected it was unlikely that participants would generate similar masculine PEBs to the infographic, and the likelihood that they would generate more common and feminine PEBs, receiving such information was intended to threaten their masculinity.

Control condition. The control condition was also a false infographic with magazine poll data about sustainable behaviors, but the source was Time Magazine instead of GQ to provide data from a magazine that didn't have a male-specific audience. Behaviors listed under the "most common green behaviors" section were neutral instead of masculine (e.g., changing to energy efficient lightbulbs), adapted from the list of neutral PEBs identified in Swim et al. (2020). Additionally, the section of the infographic that displayed why respondents believed their sustainable behaviors were important took a neutral perspective, highlighting environmental

preservation instead of anything related to masculinity (e.g., "Enjoy the outdoors and want to conserve wilderness areas").

Manipulation Check

The effectiveness of the threat manipulation was assessed via a one item question which asked how participants felt after reading sustainability infographic data. Participants were given the question *"How are you feeling? Go with your gut",* measured on a 0 – 10 slider scale from Negative to Positive.

Masculine and Feminine Attributes

Participants were asked to create a hypothetical dating profile and select which values were most important for them to include. They were presented with a list of six masculine, six feminine, and six neutral attributes in a list (randomized so the gendered categories were not easily recognizable) and asked to rate them from 1 *(not at all important to me)* to 5 *(very important to me)* (overall α = .78). Instructions noted that the highest rated attributes would appear on the fake dating profile to add in an element of imagined public visibility. Masculine items included *athletic/being active, being a handyman*, and *confidence.* Feminine items included *caring for the environment, kindness,* and *sensitivity to other's needs.* Neutral items included a *sense of humor*, *enjoys music*, and *honesty*. Attribute items were adapted from a similar threat response measure in Cheyran et al. (2015), which included ratings of handiness, athleticism, and attributes listed in the Bem Sex Role Inventory (Bem, 1974). The fake dating profile also asked participants to list their height, weight, and age. See Appendix C for details.

Masculine and Feminine Preferences

Participants were presented with list of twelve items and activities (four feminine, four masculine, and four neutral), with the instructions to rate the items based on which they preferred

to receive as prizes for participation in the study (overall α = .67). They were asked to rate their preference for each item from 1 *(not at all)* to 7 *(very much)*. Items were adapted from a similar preference measure used in Cheryan et al. (2015), updated to be more relevant to Western Washington University participants and include items related to environmentalism. Masculine preference items included a $25 gift card for axe throwing to de-stress during finals week and a $25 gift card to Home Depot. Feminine preference items included a $25 spa gift card to de-stress during finals week and a $25 gift card to Bath and Body Works. Neutral items included a free haircut and a $25 gift card to the Western bookstore. See Appendix D for details.

Supplementary Materials

Demographics and Covariates. Additional information about each participant and their interest in engaging in pro-environmental behaviors was collected including age, political orientation, sexual orientation, race, ethnicity, and class standing. See Appendix H for all demographic questions.

Study 1 Results

All analyses were conducted in RStudio. Composite scores for masculine, feminine, and neutral attributes and masculine, feminine, and neutral preferences were calculated. Scales were assessed for normality and outliers ahead of analyses. Both a boxplot and histogram for the height variable displayed one extreme low outlier in the non-threat condition, which upon further examination was a score that was not in the range of plausible height values and was likely a participant entry error (input as 6.1 inches instead of 61 inches). Due to this, the outlier was removed ahead of analyses. Given that no other variable was largely skewed, no transformations were applied. Table 1 displays all demographic characteristics of participants.

Manipulation Check

An independent samples *t* test was used to assess the difference in affect between groups after their masculine threat experience (measured with one continuous item: *"How do you feel? Go with your gut"* on a 0-10 scale from Negative to Positive), which served as the manipulation check. Mean ratings of mood differed significantly between groups, t (187) = 2.49, p = .014, d = 0.36. Participants in the threat group (M = 5.85, SD = 2.20) reported less positive affect than participants in the non-threat control group (M = 6.62, SD = 2.01). The 95% CI for the difference between sample means had a lower bound of 0.16 and an upper bound of 1.38. This shows that reading false infographic feedback in the threat condition led to greater negative feelings, therefore successfully threatened participants' masculinity.

To explore whether threat experience and masculine gender identification interacted in predicting participants' affect, the manipulation check question was included as the dependent measure in a multiple regression. While there was a significant main effect of threat experience on positive and negative affect (β = -0.18, p = .014), there was no main effect of masculine gender identification (β = - 0.05, p = .542), nor interaction between level of masculine gender identification and threat experience on affect (β = 0.01, p = .911), adj R^2 = 0.02, F (3, 185) = 2.18, p = .092.

Primary Analyses

To examine whether men who experienced a threat rated masculine attributes and preferences higher than feminine attributes and preferences and reported they were taller and weighed more compared to the control group, *t* test analyses were used to compare group means between threat and non-threat conditions on 8 dependent measures: Attributes (Masculine, Feminine, Neutral), Preferences (Masculine, Feminine, Neutral), self-reported weight and self-

reported height. Contrary to my hypotheses, *t* tests showed no statistically significant differences between groups on any measures (see Table 2 for details).

Exploratory Analyses

Masculine Gender Identification as a Moderator

As noted in the proposal and Open Science Framework registration, I was interested in exploratorily assessing the interaction between masculine gender identification and experiencing a masculinity threat on reported attributes and preferences. Using multiple regression, masculine gender identification and masculinity threat experience were included as predictors for each measure. Condition was dummy coded such that the non-threat control was the comparison group (non-threat control = 0, threat = 1), and masculine gender identification was centered. Interactions were probed with simple slope analyses at high (+1 SD) and low (-1 SD) levels of masculine gender identification.

Masculine Attributes. Participants rated masculine attributes which were presented as a list of values and interests with instructions to imagine they were creating an online dating profile, and their top five highest rated items would appear on their page. There was a statistically significant main effect of masculine gender identification on reported masculine attributes ($\beta = 0.16$, $p < .001$). There was no main effect of condition on masculine attributes ($\beta = -0.05$, $p = .727$). There was a statistically significant interaction between masculine gender identification and threat experience, such that the impact of experiencing a masculinity threat on reported masculine attributes depended on individual levels of masculine gender identification ($\beta = 0.24$, $p = .016$), adj $R^2 = 0.13$, F (3, 184) = 10.07, $p < .001$ (see Figure 1). Simple slope tests revealed that for men with low masculine identification, those who experienced a threat rated masculine attributes as less important than men who did not experience a threat, t (184) = -2.16,

SE = 0.18, *p* = .032. For men with high masculine identification, those who experienced a threat did not differ significantly on their rated importance of masculine attributes compared to those who did not experience a threat, *t* (184) = 1.29, *SE* = 0.18, *p* = .198. This is contrary to expectations that the significant difference would be seen in men with high masculine identification who experienced a threat, as they may experience more discomfort in response to being threatened, therefore want to compensate with higher masculine attribute endorsement. However, there was a statistically significant positive relationship between masculine identification and masculine attributes in the threat condition, *t* (184) = 5.25, *SE* = 0.12, *p* < .001, but not in the control condition, *t* (184) = 1.61, *SE* = 0.12, *p* = .110. This relationship is consistent with expectations that men with higher masculine identification have stronger threat reactivity, as it shows that increases in masculine gender identification overall led to increases in masculine attribute endorsement when a threat was experienced.

Feminine Attributes. There was no main effect of masculine gender identification on reported feminine attributes (β = -0.04, *p* = .429), and no main effect of condition on masculine attributes (β = -0.05, *p* = .586). There was also no interaction between level of masculine gender identification and threat experience on reported feminine attributes (β = 0.13, *p* = .213), adj R^2 = 0.13, *F* (3, 184) = 0.83, *p* = .479. This is contrary to the idea that men who experience a threat to their masculinity may distance from femininity as a recovery strategy (in addition to embracing extreme masculine behaviors or attitudes), especially for men high in masculine gender identification.

Neutral Attributes. In a similar pattern to feminine attributes, there were no main effects of masculine gender identification (β = -0.08, *p* = .478) or condition (β = -0.01, *p* = . 858) on neutral attributes. There was also no interaction between masculine identification and threat

condition on neutral attribute endorsement (β = 0.00, p = .999), adj R^2 = -0.01, F (3, 184) = 0.38, p = .771.

Masculine Preferences. The preference measure was presented as participant prize options for study completion and was unrelated to the attributes measure (in which participants were instructed to create a dating profile). There was a statistically significant main effect of masculine gender identification on reported masculine preferences, such that men who showed higher levels of identification also showed greater endorsement of masculine preferences (β = 0.12, p = .015). There was no main effect of condition on masculine attributes (β = -0.02, p = .892), nor interaction between level of masculine gender identification and threat experience on masculine preferences (β = 0.08, p = .440), adj R^2 = 0.02, F (3, 181) = 2.20, p = .090.

Feminine and Neutral Preferences. There were similar patterns of results for both feminine and neutral preferences. For reported feminine preferences, there was no main effect of masculine gender identification (β = 0.03, p = .856) or of threat experience (β = -0.04, p = .619), and no interaction between identification level and threat on preferences (β = 0.06, p = .611), adj R^2 = -0.01, F (3, 181) = 0.18, p = .910. Similarly, there were no main effects of masculine identification (β = -0.06, p = .499) or threat experience (β = -0.05, p = .473) on reported neutral preferences, and no interaction between identification and threat (β = 0.01, p = .896), adj R^2 = -0.01, F (3, 181) = 0.33, p = .803.

Height and Weight. Reported height and weight showed similar result patterns as feminine and neutral preferences. There were no main effects of masculine gender identification (β = 0.07, p = .633), or threat experience (β = 0.06, p = .419) on reported height, nor a significant interaction between identification level and threat (β = -0.04, p = .683), adj R^2 = -0.01, F (3, 182) = 0.35, p = .788. The same was true for reported weight; there were no main effects of

identification (β = 0.05, p = .846) or threat (β = 0.04, p = .586), and no interaction between the two (β = -0.09, p = .395), adj R^2 = -0.01, F (3, 184) = 0.35, p = .786.

Post Hoc Analyses

Although not accounted for in the original proposal or Open Science Framework registration, I wanted to explore whether removing non-straight participants impacted results given the relatively high number of participants who reported a sexual orientation that was not heterosexual (28.8%). As a core feature of masculinity is heteronormativity, and precarious masculinity is established by hegemonic systems of power which hold heterosexuality as the ideal, masculinity threats may be especially influential to heterosexual men (Bosson & Michnieqicz, 2013; Vandello & Bosson, 2013). Additionally, environmental activism appears to be higher among non-heterosexual men compared to heterosexual, as queer communities are often more accepting of behaviors and norms that do not conform to traditional gender roles (Bloodhart & Swim, 2021; Sbicca, 2012). I also wanted to explore whether accounting for political orientation as a covariate altered results, since political conservatism is associated with reduced environmentalism, and liberalism with potential increases in environmental care (McCright & Dunlap, 2011; Watkins et al., 2016). Conservative white men are also significantly more likely to deny climate change exists compared to the general U.S. population, therefore less likely to act in environmentally friendly ways (McCright & Dunlap, 2011).

Sexual Orientation

Participants who did not select "Straight or Heterosexual" as their sexual orientation were filtered out of the dataset and *t* test and regression analyses were rerun. Including only heterosexual students did not alter patterns of results for any analyses compared to running them with all participants, so these results will not be discussed further.

Political Attitudes

Political orientation was included as a covariate at Step 1 of the regression and was a statistically significant covariate for masculine and neutral attributes and masculine and feminine preferences[2]. It was not a significant covariate for feminine attributes, neutral preferences, height, or weight. At Step 2 of the model, threat condition and masculine gender identification were added as predictors. At Step 2, political orientation as covariate did not change the pattern of results from original analyses that it was not included in, so these results will not be discussed further here but can be viewed in Table 5.

Study 1 Discussion

Contrary to predictions, results of Study 1 showed that there were no statistically significant differences between groups on gendered attributes and preferences in response to a masculinity threat, however, there were some differences when masculine gender identification was considered. Masculine gender identification moderated the relationship between threat and masculine attributes, however, this effect was only statistically significant for men with low masculine identification, when I expected the difference to occur at high levels. Men who had lower levels of masculine identification rated masculine attributes as less important after experiencing a threat compared to men who had not been threatened. This could potentially be driven by men with lower masculine identification rejecting ingroup status with masculinity in general, therefore not responding to masculinity threats in typical ways. As the masculine identification measure was adapted from a measure of the centrality or importance of collective identity, low masculine identification may equate to low ingroup identification with other men (Luhtanen & Crocker, 1992; Glick et al., 2015). Instead of embracing masculinity, men with

[2] The political orientation variable was measured on a 0-10 continuous slider scale from "Extremely Liberal" to "Extremely Conservative" and was centered before inclusion in multiple regression analyses.

lower identification seem to reject masculine status even further after a threat by showing significantly decreased masculine attribute endorsement.

Despite this, masculine identification overall related to greater masculine attribute endorsement, with a stronger relationship in the threat condition compared to non-threat (which was not statistically significant). This relationship is in line with expectations that higher levels of masculine identification can lead to stronger ingroup favoritism and reactivity to threats, which motivates more exaggerated reparative strategies (compared to low masculine identification), as there is more status to lose (Dahl et al., 2013). It seems that a masculine threat in the context of PEBs motivates general overcompensation behavior, and the most useful option available to participants with high masculine identification was strengthening their masculine attribute endorsement. This fits with findings that men who experience specific threats to their masculinity (i.e., focused on a specific element of their manhood, such as their sustainable behavior) engage in general reparative strategies and overshoot group norms in order to signal their group allegiance (Cheryan et al., 2015, Cheryan & Monin, 2005; Willer et al., 2013). Challenging men's sustainable behavior as not measuring up to what the "typical" PEBs are for their ingroup led them to make up for lost masculinity by boosting indirect aspects of themselves, but this relationship depended on the strength of their masculine identification.

Additionally, participants showed no significant difference on preference measures, which were presented to them as prizes they could win for their study completion (they were asked to rate each item based on which they would most like to receive). Although the scales were adapted from prior research which also used a student population and had a similar masculine threat (Cheryan et al., 2015), the poor reliability scores of all subscales suggests that participants may not have interpreted them based on the gender norms they signaled. An

exploratory factor analysis of the preference items revealed three factors with eigenvalues greater than 1, and a minimum residuals extraction with an oblimin rotation was used. Based on this analysis, the first factor was labeled *Education* ("$25 gift card to the Western bookstore"), the second factor was labeled *Luxury* ("$25 gift card to a spa during finals week to de-stress"), and the third factor was labeled *Utility* ("A free haircut at Supercuts"). These patterns suggest that considering the student population, gift cards or free items may have been rated based off their relative value (i.e., fulfilling a basic need, such as food, or a recreational need) instead of by gendered identity they were intended to signal. However, even analyses based on these new factors did not change the pattern of any results for preferences subscales. It could be that either the current economic climate or Western Washington cultural ideals motivated students towards specific utility-based preferences which were stronger than their gender identity motivations.

Finally, as the study was entirely online, both attribute and preference measures were rated privately. Men may have felt stronger pressure to perform or recover their masculinity and responded differently if the measures had some public element, as public perceptions (especially from other men) exert more normative pressure to recover lost masculinity than men may feel privately. Public discomfort is a core component of threatened masculinity, as it motivates an initial affective response which stems from concern about how others perceive the self (Bosson et al., 2005; Dahl et al., 2015). Discomfort from perceived social rejection impacts self-esteem and motivates actions to recover status through whatever means are available (Leary & Baumeister, 2000; Rudman & Fairchild, 2005). Affective discomfort is still present when masculinity is threatened privately (as shown in participants' significantly less positive affect scores after experiencing a threat in both Study 1 and 2). However, public perceptions exert a strong normative influence to recover lost masculinity which might not be as strong privately,

and pressure to embrace masculine and reject feminine attributes and preferences may have been more powerful if a public element were involved in this study.

STUDY 2

Can Masculine Pro-Environmental Behaviors Aid Identity Recovery?

Study 2 was aimed at assessing the opposite process of Study 1: If men's masculinity is threatened, will their engagement in masculine PEBs increase and feminine PEBs decrease as a recovery strategy? Men experienced a threat through receiving a false score on a masculine knowledge test and were then asked about their willingness to engage in masculine, feminine, and neutral pro-environmental behaviors. As masculine PEBs signal a masculine identity, in the face of a global masculinity threat, men may be more likely to embrace instead of avoid environmentalism to reassert their manhood. The goal of this study was to provide evidence for a context under which threatening masculinity might lead to men increasing their engagement in sustainable behaviors.

Study 2 Hypotheses

Hypothesis 1: Participants who experience a masculinity threat will show higher preference for masculine pro-environmental behaviors (e.g., donating to a waterfowl sportsmen's group, adhering to a car maintenance plan to reduce gas emissions) and lower preference for feminine pro-environmental behaviors (e.g., using reusable bags, line drying clothes) compared to the non-threatened (control) condition.

Exploratory analysis: I also explored the possibility that masculine gender identification would interact with masculine threat versus non-threat conditions in predicting the likelihood to engage in masculine (compared to feminine) PEBS. As these were exploratory analyses, I did not

have a priori hypotheses for how (or if) low versus high gender identification would moderate the effect of masculine threat.

Method

Participants

Using this design, a power analysis calculated through the statistical program G*Power with alpha equal to .05, power = .90, and a medium effect size of .25 indicated that 172 participants were needed for the study, based on similar effect size estimates as Study 1. Given additional factors such as potential attrition, unusable data, and enhancing the ability to generalize study findings to the broader population, my aim was to run 400 total participants.

All participants were recruited online through Prolific, and funding was received from Western Washington University's Graduate Office of Research and Sponsored Programs to compensate participants. Prolific's online sampling pool has been shown to produce higher quality data than Amazon's MTurk platform (Peer et al., 2017). Additionally, due to the constructs of masculinity and identity threats that this study tested, Prolific's sample pool provided better external validity and generalizability of results outside of college student populations. A geographically diverse United States sample was selected through the platform tools, and 400 total participants were collected. In order to participate, respondents indicated on a Prolific pre-screener that they were male identifying, over 18 years of age, and had English language proficiency. Due to an error with Qualtrics, attention check responses were only collected for the first 20 participants (there were no errors in data collection for any other items). Participants for whom attention check data were recorded[3] were assessed for accurate responses, and 6 were removed. All other participants were included in final analyses as I was unable to

[3] The attention check was a one-item fill in question which asked participants to list the score they received on their masculine knowledge test.

assess their attention check responses, leaving a total of 394. The final sample identified as mostly straight (89.3% straight or heterosexual, 4.6% bisexual, 4.3% gay, 0.8% pansexual, 0.8% asexual, 0.3% other) and white (69.3% White, 12.4% Asian, 2.5% Multiracial, 6.6% Latinx, 7.6% Black, and 1% other) with a mean age of 37.47.

Participants were compensated $10.00 per hour for their time, calculated based on an estimated 15 minutes of total time required for completion of the survey. Prolific recommends a minimum compensation of $8 per hour, and $10.00 offered a higher incentive to participate while allowing collection of an adequate sample size based on the funding received for this project. Upon completion of the study, all participants were paid $2.50.

Procedure

Ethical approval was obtained from Western Washington University's IRB before participant recruitment began. Informed consent was electronically collected from participants along with a short screening survey assessing their gender identity. Participants who selected a masculine gender identity and met other screening criteria were selected to move forward into the main survey, until there were 200 participants in each condition (masculine threat and non-threat). Screening and survey questions were delivered online through the survey platform Qualtrics.com. Once participants completed their informed consent, they received electronic instructions to continue onto the main survey.

Participants first completed a survey measuring their masculine gender identification, displayed with other demographic questions so as not to appear suspicious. They were then directed to take an online masculinity test with the stated purpose "to measure the level of [their] masculinity compared to other men" (see Cheryan et al., 2015 and Rudman & Fairchild, 2004 for a related procedure). The test included 30 multiple choice questions that were designed so there

is no obviously masculine answer and participants were not easily able to discern their score. After taking the test, participants were told that the median score is 72 out of 100, with 100 indicating complete masculinity. Participants were randomly assigned to either receive a score of 26 (threat condition) or 73 (non-threat condition), alongside a "masculine knowledge thermometer" showing a visual depiction of their score (see Appendix G).

After receiving their test feedback, participants first answered one question assessing how they were feeling (on a Negative to Positive scale), which served as a manipulation check. They were then presented with a list of 15 gendered pro-environmental behaviors (5 neutral, 5 feminine, 5 masculine) and asked to rate their preference for which they would like to engage in from 1 *(not at all)* to 7 *(very much)*. Mean responses were calculated. Afterwards, participants were debriefed and redirected back to Prolific to collect their payment for the study.

Materials

Screening Survey

Gender Identity. Participants were asked to confirm their gender identity in a screening survey on Prolific. Only respondents who selected "Male" moved forward to the study.

Gender Identification

The same masculine identification scale from Study 1 was also used in Study 2, adapted from Glick et al. (2015) (α = .92). Participants were presented with this scale prior to experiencing a threat, disguised with other demographic questions to reduce suspicion. See Appendix A for details.

Threat to Masculinity

Masculinity was threatened via an online masculinity test with false feedback, which has been used as a global threat to masculinity in prior related research (Cheryan et al., 2015;

Rudman & Fairchild, 2004). The online test included 30 multiple choice questions featuring obscure stereotypically masculine knowledge, designed so that participants would not be able to accurately predict their score and false feedback was believable. Sample items include "Karate originated in martial arts developed in..." with response items *Japan* or *China* and "The groove inside the barrel of a revolver is..." with response items *spiraled* or *smooth*. Each question was presented with two response options. After taking the test, participants were told that the median score for men was 72 out of 100, with 100 being "completely masculine". Participants then received feedback specific to their test performance and were randomly assigned to either receive a score of 26 (masculine threat condition), or 73 (control condition). See Appendix F for the full knowledge test.

Manipulation Check

The effectiveness of the threat manipulation was assessed via one item which asked how participants felt after receiving their masculine knowledge score. Participants were presented with the question *"How are you feeling? Go with your gut"*, measured on a 0 – 10 slider scale from Negative to Positive.

Gendered Pro-Environmental Behaviors

Participants were given a list of 15 gendered pro-environmental behaviors (5 feminine, 5 masculine, and 5 neutral) with the instructions *"Please rate the likelihood you will engage in these behaviors, now or at some point in the future"* and measured on a 7-point scale from 1 *(not at all likely)* to 7 *(very likely)*. Gendered PEBs were selected and adapted from a pretested list in Swim et al. (2020), where 45 participants rated 72 behaviors based on whether they expected women to do them more than men, women and men to be equally likely to do them, or men to do them more than women. The top five behaviors in each category (masculine, feminine, and

neutral) were selected from Swim et al.'s pilot test to use in this study. Masculine behaviors included *donating to a waterfowl sportsman's group, adhering to a vehicle maintenance plan, keeping tires at the proper pressure, caulking windows and doors,* and *using online video games rather than purchasing video game disks* (α = .73). Feminine behaviors included l*ine drying washed clothes, decorating a room with light colors that reflect daylight, recycling, buying new clothes from a sustainable designer brand,* and *using reusable shopping bags* (α = .74). Neutral behaviors included *buying energy efficient CFL and LED bulbs, unplugging chargers which draw current when the devices battery is full, opening windows rather than using air-conditioning, using safety razors instead of disposable ones,* and *paying bills online* (α = .66). See Appendix G for the full pro-environmental behavior scale.

Supplementary Materials

Demographics and Covariates. Additional information about each participant and their interest in engaging in pro-environmental behaviors was collected including age, political orientation, sexual orientation, race, ethnicity, income, and education level. See Appendix H for details.

Study 2 Results

All analyses were conducted in RStudio. Composite scores for masculine, feminine, and neutral pro-environmental behaviors were calculated, in addition to a composite full pro-environmental behavior measure including all three subscales. Scales were assessed for normality and outliers ahead of analyses, but given that none were largely skewed, no transformations were applied. Table 1 displays all demographic characteristics of participants.

Manipulation Check

The same manipulation check question was used in Study 2 as Study 1 and was also analyzed with an independent samples *t* test to assess the difference in affect ratings between groups after their masculine threat experience. Mean ratings of mood differed significantly between groups, t (392) = 12.2, $p < .001$, two tailed. Mean ratings of mood in the threat group (M = 4.47, SD = 2.52) were about 2.5 points lower (less positive) than the non-threat control group (M = 7.11, SD = 1.71). The effect size, indicated by Cohen's *d*, was 1.23, showing this was a large effect. The 95% CI for the difference between sample means had a lower bound of 2.22 and an upper bound of 3.07. This shows that those in threat condition who received a false low score after completing the masculine knowledge test had greater negative feelings compared to the non-threatened condition, therefore the false score successfully threatened participants' masculinity.

The manipulation check measure was included in an exploratory multiple regression (similar to Study 1) to test whether threat experience and masculine gender identification interacted in predicting participants' affect. There was a statistically significant main effect of experiencing a threat on affect ($\beta = -0.52$, $p < .001$), in addition to a main effect of masculine gender identification on affect ($\beta = -0.23$, $p < .001$). There was also an interaction between masculine gender identification and threat experience on affect ($\beta = -0.38$, $p < .001$), adj R^2 = 0.34, F (3, 390) = 69.18, $p < .001$ (see Figure 3). Simple slopes revealed that men with low masculine identification reported more negative affect in the threat condition compared to the non-threat (t (390) = -4.46, SE = 0.29, $p < .001$). The effect size, as measured by Cohen's *d*, was 0.45, indicating a small effect. The same was true for men with high masculine identification, who also reported more negative affect after experiencing a threat compared to no threat (t (390)

= -13.65, *SE* = 0.29, $p < .001$). The effect size, as indicated by Cohen's *d*, was 1.38, indicating a large effect. There were also statistically significant relationships between masculine identification and affect in the threat condition (t (390) = -5.27, *SE* = 0.16, $p < .001$) and control condition (t (390) = 3.93, *SE* = 0.16, $p < .001$), but there was a greater difference between conditions in rated affect at high masculine identification (i.e., men with higher identification rated less positive affect after a threat). In essence, this interaction shows that the threat manipulation was effective, and had a stronger effect for men with high masculine identification.

Primary Analyses

Using *t* test analyses, group means were compared between threat and non-threat conditions on 4 dependent measures: full pro-environmental behaviors, and masculine, feminine, and neutral subscales. Contrary to my hypotheses, *t* tests showed no significant differences between groups on any measures (see Table 3 for details).

Exploratory Analyses

Masculine Gender Identification as a Moderator

As noted in the proposal and Open Science Framework registration and similar to Study 1, I was interested in exploratorily assessing the interaction between masculine gender identification and experiencing a masculinity threat on pro-environmental behaviors. Using the same procedure as Study 1, masculine gender identification and masculinity threat experience were included as predictors for each measure in multiple regression analyses. Condition was dummy coded such that the non-threat control was the comparison group (non-threat control = 0, threat = 1), and masculine gender identification was centered. Interactions were again probed with simple slope analyses at high (+1 SD) and low (-1 SD) levels of masculine gender identification.

Masculine Pro-Environmental Behaviors. There was a statistically significant main effect of masculine gender identification on willingness to engage in masculine PEBs such that men who identified more strongly with masculinity were more likely to report less willingness to engage in masculine PEBs (β = 0.17, *p* = .020). There was no main effect of threat experience (β = -0.08, *p* = .126), nor interaction between condition and masculine identification (β = -0.13, *p* = .056). However, because the interaction was within conventions of "marginal" statistical significance, simple slopes tests were conducted (see Figures 5 and 6). Simple slopes revealed that for men with high masculine identification, experiencing a threat led to significantly less willingness to engage in masculine PEBs compared to the non-threat condition, *t* (390) = -2.44, *SE* = 0.15, *p* = .015. Men with low masculine identification who experienced a threat did not differ significantly in their willingness to engage in masculine PEBs compared to the non-threat group, *t* (390) = 0.04, *SE* = 0.15, *p* = .786. Additionally, there was a statistically significant relationship between masculine identification and masculine PEBs in the control condition, such that men with higher masculine identification expressed more willingness to engage in masculine PEBs, *t* (390) = 2.34, *SE* = 0.08, *p* = .020. There was no significant relationship between masculine identification and masculine PEBs in the threat condition, *t* (390) = -0.36, *SE* = 0.08, *p* = .722. This is inconsistent with my expectations that men in the threat condition would express more willingness to engage in masculine PEBs, and that the relationship would be stronger for men with high masculine identification. These results perhaps provide some evidence for the control condition affirming masculinity instead of being a truly neutral control, and for threatened men distancing from masculine PEBs as they still view them as associated with femininity.

Feminine Pro-Environmental Behaviors. Somewhat different than results for masculine PEBs, there were no main effects of masculine gender identification (β = 0.11, *p* = .126) or threat experience (β = -0.06, *p* = .278) on feminine PEBs, but there was a statistically significant interaction between the two, such that willingness to engage in PEBs depended on an individual's level of gender identification (β = -0.17, *p* = .021) (see Figure 7). Simple slope tests revealed that for men with high masculine gender identification, experiencing a threat led to less willingness to engage in feminine PEBs compared to the control condition, *t* (390) = -2.41, *SE* = 0.17, *p* = .017. Men with low masculine identification who experienced a threat did not differ significantly in their willingness to engage in feminine PEBs compared to the non-threat group, *t* (390) = 0.87, *SE* = 0.17, *p* = .385. There was not a significant relationship between masculine identification and feminine PEBs in the control (*t* (390) = 1.53, *SE* = 0.09 *p* = .126) or threat (*t* (390) = -0.16, *SE* = 0.09, *p* = .082) conditions. See Figure 8 for simple slopes. These findings fit with the idea that distancing from feminine behaviors is an important recovery strategy after experiencing a masculinity threat, however this effect is only seen in participants with high masculine gender identification.

Neutral Pro-Environmental Behaviors. A similar pattern as feminine PEBs was seen for the neutral PEB measure, which showed no main effects of masculine identification (β = 0.13, *p* = .064) or threat (β = -0.03, *p* = .510), but again showed a significant interaction (β = -0.17, *p* = .021) (see Figure 9). Simple slope tests showed that for men with high masculine gender identification, a threat to masculinity led to lower willingness to engage in neutral PEBs compared to men who were not threatened, *t* (390) = -2.10, *SE* = 0.17, *p* = .036 (see Figure 10). Men with low masculine identification who experienced a threat again did not differ significantly in their willingness to engage in neutral PEBs compared to the non-threat group, *t* (390) = 1.17,

SE = 0.17, *p* = .242. There was no significant relationship between masculine identification and neutral PEBs in the threat (*t* (390) = -0.13, *SE* = 0.09 *p* = .158) or control (*t* (390) = 0.17, *SE* = 0.09, *p* = .063) conditions. These findings may fit with the same reasoning behind men distancing from feminine PEBs in response to a threat: neutral PEBs may not necessarily be completely neutral in the context of gender signaling, therefore rejecting these behaviors after a masculinity threat might be the most useful recovery strategy.

Full Pro-Environmental Behavior Scale. Patterns of results across all three pro-environmental behavior subscales (masculine, feminine, neutral) were very similar. Additionally, masculine PEBs were strongly correlated with feminine PEBs (*r* = .71, *p* < .001, 95% CI [.65, .75]) and neutral PEBs (*r* = .70, *p* < .001, 95% CI [.65, .75]), and feminine and neutral PEBs also showed a strong correlation with each other (*r* = .78, *p* < .001, 95% CI [.74, .82]). Due to this, a composite full PEB measure including all three PEB subscales was created, which showed higher reliability than any of the individual measures (α = .88). The composite measure was included as a dependent variable and analyzed in the same multiple regression analysis as the three subscales to show the overall pattern of results for pro-environmental behaviors.

There was a statistically significant main effect of masculine gender identification on willingness to engage in PEBs (β = 0.14, *p* = .046), but no main effect of condition on PEBs (β = -0.06, *p* = .240). There was also a statistically significant interaction between level of masculine identification and experiencing a masculinity threat, such that the impact experiencing a threat had on willingness to engage in PEBs depended on an individual's level of masculine gender identification (β = -0.18, *p* = .013) (see Figure 11). Simple slope analyses revealed that for men with high masculine identification, experiencing a threat led to significantly less willingness to engage in all types of PEBs compared to men with who did not experience a threat, *t* (390) = -

2.56, *SE* = .12, *p* = .010), see Figure 12. Men with low masculine gender identification who experienced a threat did not differ significantly on their willingness to engage in PEBs compared to those who did not experience a threat, *t* (390) = 0.93, *SE* = 0.12, *p* = .354). There was a statistically significant relationship between masculine identification and PEBs in the control condition, *t* (390) = 0.13, *SE* = 0.07, *p* = .046. This follows a similar pattern of results seen in masculine PEBs, such that men with higher masculine identification expressed more willingness to engage in any PEBs in the control condition. There was no significant relationship between masculine identification and neutral PEBs in the threat condition, *t* (390) = -0.10, *SE* = 0.07 *p* = .131. These results are generally aligned with the idea that men respond to masculinity threats by rejecting or distancing themselves from perceived feminine behaviors or attitudes, however this effect is seen even for PEBs that align more with masculine roles.

Post Hoc Analyses

Although not accounted for in the original proposal or Open Science Framework registration, I wanted to explore whether accounting for political orientation as a covariate altered results, since political conservatism is associated with reduced environmentalism (McCright & Dunlap, 2011).

Political Attitudes

Similar to Study 1, political orientation was included as a covariate at Step 1 of the regression and was a statistically significant covariate for the full pro-environmental behavior scale. At Step 2 of the model, threat condition and masculine gender identification were added as predictors. At Step 2, political orientation as covariate did not change the pattern of results from original analyses, so these results will not be discussed further here but can be viewed in Table 8.

Study 2 Discussion

Inconsistent with my hypotheses, men did not seem to embrace masculine pro-environmental behaviors or distance from feminine behaviors more after experiencing a threat. However, when masculine gender identification was taken into consideration, this relationship changed, and men with higher levels of identification were less willing to engage in any type of pro-environmental behavior after a threat. It is possible that any PEB might be associated with femininity, which would explain patterns of findings in Study 2. As an antifemininity mandate is a core feature of masculinity, and nature and femininity are both implicitly and explicitly linked, if masculine PEBs are perceived as aligned with more feminine values of nurturance and care then distancing from them is an effective identity recovery strategy (Bosson & Michniewicz, 2013; Brough et al., 2016). Men with higher levels of masculine identification reject femininity more strongly (Glick et al., 2015). Therefore, after experiencing a threat to their masculinity, men with high masculine identification may be likely to respond with more extreme compensation strategies (i.e., display a greater rejection of femininity, stronger assertion of masculine behaviors, etc.) than men with low identification. This process would explain the pattern of results seen in this study, specifically that higher identification overall leads to less willingness to engage in PEBs.

It seems that distancing from all PEBs was a more effective masculinity recovery strategy in this context, instead of increasing willingness to engage in masculine specific PEBs and rejecting only feminine PEBs. Prior research shows that when men experience a threat to their masculinity, they will reassert their manhood via the most effective signaling strategy that is available to them. This can take the form of embracing masculine behaviors or preferences, or distancing from feminine products and preferences (Cheryan et al., 2015). Participants may have

viewed even masculine specific PEBs under the umbrella of environmentalism as being associated with feminine norms and values, therefore distancing from all PEBs instead of embracing a subset of them was the most effective masculinity recovery strategy. Since higher masculine gender identification is correlated with more positive views of traditional masculine norms, men who identify more strongly with their masculinity may be especially sensitive to perceiving any environmentalism as feminine (Glick et al., 2015).

Additionally, the gender-signaling aspects of masculine PEBs might have been confounded by their relative inconvenience to engage in compared to feminine and neutral PEBs. The list of masculine PEBs was behaviors that require more energy and are completed less often than feminine PEBs. For example, caulking windows and doors to increase insulation and energy efficiency (masculine PEB) is a far less convenient and regular behavior than using reusable bags at the grocery store (feminine PEB). Given this, it is possible that participants' lower ratings of willingness for masculine PEBs were also based on their perceived ease compared to feminine and neutral PEBs, instead of based on only their gendered properties. Since masculine PEBs required more time or energy, they may have been overall less appealing to invest in than other PEBs.

While experiencing a threat seemed to impact participants' willingness to engage in pro-environmental behaviors when they had high levels of masculine identification, it is possible that some of the interaction was also driven by the non-threat condition showing higher willingness to engage in PEBs. As the false masculine knowledge score in the non-threat condition was presented as "above the median for most men" alongside a visual "masculine knowledge thermometer" (see Appendix G), participants in this condition possibly experienced an affirmation of their masculinity instead of a neutral control. Affirmation is especially important

to consider in the context of men's environmental behavior, as it has been shown to increase sustainable engagement in some contexts (Brough et al., 2016). In this study, affirmation may have increased willingness to engage in all PEBs (masculine, feminine, and neutral). Men with higher masculine identification in the control condition overall showed more willingness to engage in all PEBs compared to the threat condition. Even though all PEBs may have been viewed with underlying feminine associations, men who were told they scored above the median on masculine knowledge in the control condition may have felt more comfortable expressing sustainable willingness as they were first given a boost of confidence in their masculinity. This boost may have been especially strong for men with higher masculine identification, as they received confirmation of their ingroup allegiance, therefore sustainability engagement may not have presented a threat.

General Discussion

The central aim for this research was to assess the gender gap in environmentalism through the lens of gender identity processes, and how threats to masculinity might be both created and recovered by sustainable engagement. In Study 1, I intended to examine whether participants' receiving feedback about their sustainable behaviors not being masculine enough would threaten their masculinity, and lead to compensating through over-exaggerated masculine attributes and preferences, and distancing from feminine attributes and preferences. In Study 2, participants experienced a more general threat to their masculinity (via feedback about their degree of masculine knowledge), with the intention to assess if this would increase their likelihood to engage in masculine PEBs and decrease willingness to engage in feminine PEBs.

Across both studies, when looking at compensation strategies post-threat, it was important to consider participants' level of masculine gender identification. Masculine

identification is defined as how central gender identification is to the self, and leads to both ingroup favoritism (i.e., embracing masculinity) and rejecting femininity as part of the self (Glick et al., 2015). In the context of threatening masculinity, higher masculine identification should motivate more exaggerated compensation strategies. That is to say, if a man with average masculine identification already reacts to threatened masculinity with exaggerated masculine behaviors and rejection of feminine behaviors, then men with high masculine identification should respond to a threat with even more extreme compensation strategies on both ends of the spectrum.

This fits with previous research on masculine gender identification, showing that high identification enhances the exclusion of femininity from the self, in addition to strengthening ingroup masculine traits (Bosson & Michniewicz, 2013; Glick et al., 2015). High masculine gender identification leading to an increased threat response also fits with precarious masculinity, which holds masculinity as an insecure identity which is easily lost and requires constant proof (Vandello et al., 2008). As men with high masculine identification have more to lose compared to low identified men, this strain likely contributes to greater reactivity in the face of a threat. In hindsight, masculine gender identification should have been included in my original hypotheses, although considering the limited evidence that currently exists about how masculine identification plays a role in men's environmentalism, it seemed appropriate to consider it as an exploratory analysis. When masculine gender identification was considered, men who experienced a threat to their masculinity engaged in specific yet varied identity signaling strategies to recover their manhood in both studies.

In Study 1, participants who read false data that men commonly engage in masculine green behaviors (i.e., the threat group) felt more negative than those who read data that the most

common green behaviors were gender-neutral, showing that some sustainable behaviors can be threatening to masculinity. Additionally, while there were no statistically significant differences between groups in attribute and preference ratings or for reported height and weight when only threat experience was considered, these patterns changed slightly when masculine gender identification was included in analyses. Specifically, participants with low masculine identification rated masculine attributes as less important after experiencing a threat than those who were not threatened. Previous research has shown that men exaggerate masculine attributes, including their aggressiveness, athleticism, number of sexual partners, and height after a threat (Cheryan et al., 2015). All of these attributes (apart from number of sexual partners) were included in the masculine attribute measure for Study 1[4], however results displayed a different pattern than found in prior research. There was also an overall trend in the data showing men with high masculine identification rated masculine attributes as more important in the threat condition compared to non-threat condition. This would fit with prior findings that men embrace masculine attributes more after a threat (Cheryan et al., 2015).

It could be that asking men to rate the importance of masculine feminine attributes based on how they would like them to appear on their dating profile provided a different motivation than asking them to respond with the degree to which the attribute described them, as has been done in previous research which the attribute measures were adapted from (Cheryan et al., 2015). As public perceptions and avoiding social judgement are a key motivator in threat recovery, men may have assumed the public audience of their dating profile would be women, and adjusted their strategies based on this. While expressing traits of dominance and decisiveness may be

[4] Height and weight measures were analyzed separately from the masculine attribute subscale, but still were included as part of creating a hypothetical dating profile during the study. Previous research has included height (but not weight) in similar masculine attribute measures used in Study 1, and height has previously been noted as an important masculine attribute (Cejka & Eagly, 1999; Cheryan et al., 2015).

important in recovering masculine status around other men, in romantic relationship contexts women often prefer men who display qualities of interpersonal warmth and vulnerability (Burger & Cosby, 1999)[5]. The same qualities of dominance which men over-exaggerate in recovering threatened masculinity may not be perceived as attractive or relevant in dating contexts. Men can enact a form of romantic masculinity in dating, which de-emphasizes masculine traits and may emphasize more feminine traits compared to hegemonic masculinity. Romantic masculinity implies possession of attributes such as care and sensitivity, which are typically associated with femininity, but valued within dating (Allen, 2007). This may have impacted the effect of a threat on masculine trait endorsement when presented in the context of a dating profile, such that men downplayed certain aspects of their masculinity that they believed would be less attractive to potential romantic partners (e.g., decision-making, natural leader).

In Study 2, the masculinity threat was intended to be more global (compared to the specific aspect of sustainable behavior threatened in Study 1). Men whose masculinity was threatened attempted to restore it by distancing from all PEBs, including masculine, however this pattern only occurred for men with high masculine gender identification. This result, although unexpected, is consistent with findings that femininity associated with PEBs may be present even for behaviors which are considered more neutral (equally feminine and masculine) as well as behaviors which are considered more masculine. Prior research shows that even when sustainable behaviors are rated as more likely to be enacted by men than women, they may still hold underlying feminine associations (Swim et al., 2020). Although it seems that engaging in masculine PEBs might be an effective signal of heterosexuality, which is an important component of hegemonic masculinity, perhaps neither neutral nor masculine PEBs can fully

[5] I specifically focused on perceived women dating profile viewers here due to the predominantly heterosexual participant pool in Study 1, although the same argument may apply to non-heterosexual dating as well.

overcome green-feminine associations. Findings in Study 2 also fit with the idea that men with high masculine identification exclude femininity from the self to an even greater degree than those with low masculine identification (Glick et al, 2015). If it is true that even masculine PEBs are perceived as associated with femininity, then it was a more effective threat recovery strategy for men with high masculine identification to reject environmentalism entirely instead of embrace only masculine PEBs. Therefore, it appears that in response to experiencing a threat to masculinity, even PEBs which align with masculine norms may not be enough to recover manhood.

Additionally, men distancing from all PEBs in Study 2 aligns with two out of three core characteristics of masculinity, which are that 1) men should repudiate and distance from feminine behaviors, norms, and roles, 2) men should enact behaviors which demonstrate power and social dominance, and 3) men should display physical toughness and mental strength (Brannon, 1976; Fischer & Good, 1998; Fischer et al., 1998; Thompson & Pleck, 1986). If all PEBs have underlying associations with femininity, then men with high masculine identification who distanced from them after experiencing a threat would fulfill both the first and second core characteristics described above as reparative strategies. First, expressing less willingness to engage in PEBs is a rejection of feminine roles and values. Second, distancing from PEBs may be a way to recover masculinity through reinforcement of masculine dominance ideologies. Through expressing less willingness to care for the environment, men keep nature subordinate to patriarchal systems of power.

Limitations and Future Directions

There were some technical and instrumentation limitations in both studies. In Study 1, the proportion of participants who failed the attention check and had missing data was close to 30%.

This reduced power and may have impacted the effectiveness of the threat manipulation, as well as contributed to poor reliability for prize preference measures. The instructions may also have been slightly unclear at the start of the study, especially when asking participants to list sustainable actions they had engaged in over the past six months. The original instructions for the question did not make it clear that sustainability was defined in the context of care for the environment, leaving room for participant misinterpretation and responses unrelated to environmentalism. In Study 2, a technical survey error with Qualtrics meant that attention check responses were only recorded for 20 out of 400 participants. There were likely additional participants included in analyses who failed the attention check and should have been excluded based on pre-registered exclusion criteria, however it was not possible to assess this due to missing data.

Furthermore, the manipulation check measure, which was the same in both studies, may have only been a general measure of participant mood instead of their threat response. The manipulation check item asked participants how they felt on a scale from negative to positive after experiencing the manipulation in both studies, and it is not possible to say that an emotional reaction (i.e., reported mood) after exposure to threatening feedback was a direct assessment of how threatened participants felt in both Study 1 and Study 2. Overall, it was a challenge to assess the degree to which men felt threatened. However, results on the manipulation check measure for both studies were consistent with expectations, such that participants in the threat group reported significantly less positive affect than the control group, and in Study 2 this effect was stronger for men with higher masculine identification. Future research might test alternative manipulation check measures or different ways to assess the degree of threat men experience.

For both Study 1 and Study 2, there were limited, if any, public elements to both the threat manipulation and identity recovery measures. The only semi-public element appeared in Study 1, when participants were asked to create a hypothetical online dating profile for themselves, which they may have perceived from the perspective of an imaginary profile viewer. A core component of precarious masculinity is that it is primarily confirmed by others, therefore requires public demonstrations to both prove and maintain masculine status (Vandello & Bosson, 2013). As public perceptions and normative influences (especially from other men) are an important part of enforcing precarious masculinity and motivating men to compensate when they are threatened to regain lost status, the lack of public perceptions may have altered participant responses (Dahl et al., 2015).

Future research building on findings from Study 1 might incorporate a public element to the threat manipulation or preference and attribute measures (or both). This would likely increase the discomfort a participant experiences from a masculinity threat due to their perceived public loss of masculine status, and motivate reparative strategies aimed at reducing social judgement (Dahl et al., 2015). A public element could potentially be enacted by participants being asked to swap sustainability forms with someone they believe is another participant, but is in fact a confederate providing false threatening feedback. It may also be possible to show a recorded video of another man on the screen while participants respond to online survey items, which they are made to believe is a livestream of a participant in another room. These designs were originally explored for Study 1, but ultimately decided against in favor of a fully online study due to difficulties with in-person data collection and to help increase power through recruitment of more participants.

Future research extending from the results of Study 2 might look at whether embracing masculine sustainable behaviors might occur if distancing from feminine sustainable behaviors is not an option. For example, presenting the masculine PEB subscale as the only measure instead of combined with feminine and neutral subscales. Another direction of research could look at presenting the masculine PEB subscale alongside a list of non-sustainable masculine behaviors (i.e., eating meat, driving a sports car which uses lots of gas), to assess if this would lead to masculine PEBs to be viewed as the "more feminine" option. This might lead men to again distance from masculine PEBs as the most effective masculine signaling strategy available to them, while embracing non-sustainable masculine behaviors. This research would reinforce findings from Study 2 showing that while there are sub-types of environmental behavior which align with masculine norms, there is still an underlying association with masculine PEBs and femininity (compared to non-sustainable masculine behaviors), and perhaps provide additional context into the environmentalism gender gap. However, if masculine PEBs are presented as the only option, then it may be the most useful signal of masculinity to embrace instead of distance from them (Cheryan et al., 2015).

Additionally, future studies could test different masculine PEBs, as there are perhaps behaviors which could more clearly align with masculine attributes or values (e.g., leading an environmental protest). As Swim et al. (2020) note in their discussion after testing the same gendered PEBs used in Study 2, the framing of masculine behaviors may also impact responses. For example, framing a masculine PEB for environmental reasons (i.e., caulk windows and doors to increase insulation and energy efficiency) versus non-environmental (i.e., caulk windows and doors to save money, or because being handy is a fun hobby) would help confirm if environmental framing is the reason behind underlying feminine associations and men rejecting

these behaviors after a threat. Previous research shows that more masculine depictions of pro-environmental behaviors can help preserve men's macho image, leading to higher likelihood to embrace green choices (Brough et al., 2016).

Finally, while this research provides a foundation of evidence for how masculinity threats interact with sustainability, the green intention-behavior gap is well documented. Sustainable intent does not always translate into the same degree of sustainable action (Dong et al., 2020). Future studies could look at masculinity threats in a more applied environmental context (i.e., given participants "real" sustainable behaviors to engage in) to see if the results found for environmental intent hold for environmental action as well.

Conclusion

Climate change is one of the most pressing issues of our time. If the planet warms another 0.4°C, there will be catastrophic effects for society and wildlife worldwide (IPCC, 2014). With only a short window to avert the climate crisis, it is vital to maximize psychology's contribution to conservation and apply research to motivating global environmentalism. Climate change will impact the life of every person on the planet and disproportionately influence the lives of minority individuals and vulnerable populations. Given this, it is particularly pressing to study why some groups are less likely to engage in environmentalism compared to others, such as men compared to women.

This research offers the contribution of showing that gender identity and masculine threat processes exist within the novel context of sustainability. Men can experience a masculinity threat when their sustainable behaviors are compared to those of other men. They also respond to a more general threat by renouncing willingness to engage in environmentalism, even when the behaviors align with masculine norms and roles. This contributes to understanding why the

gender gap in environmentalism exists and builds on literature showing that men are not passive recipients of threats to their identities. Especially for high-status identities such as masculinity, men often employ creative strategies to signal gender and regain lost status, and this is also true in the context of sustainability.

A practical implication of these findings is thinking about how masculinity and sustainability coexist in a world that requires environmental engagement to safeguard the future. Choosing sustainability can be risky for men and their precarious masculinity, and it seems that in a decision between the two, the higher status social identity of masculinity is prioritized due to higher social consequences that come from non-conformity. As masculinity must constantly be proven, distancing from behaviors which have underlying associations with nurturance, care, and altruism maintains the antifemininity mandate that hegemonic masculinity requires. Viewing men's environmentalism in the context of the social consequences and potential backlash they may endure helps provide insight into why they may choose to engage in less pro-environmental behaviors than women.

Despite the challenges that gender norms and socialization processes present to men's sustainable engagement, almost all men in Study 1 could think of at least one sustainable action they had done in the past 6 months, or actions they engage in daily to help conserve the environment. As green choices become routine, or as sustainability becomes increasingly socially valued in younger generations, men may also gain social benefits from acting pro-environmentally instead of losing masculine status. Many participants noted the influence of parents and peers as a large reason behind their sustainable choices, showing that social acceptance is an important step in closing the environmentalism gender gap. Perhaps as sustainability develops into a more valued social identity, environmental men are less at risk of

social judgement and loss of masculine status. Newer, hybrid forms of masculinity may provide alternatives to the hegemonic standard by emphasizing greater sensitivity and compassion, including towards the environment. Addressing the environmental gender gap is a priority, as men's sustainable engagement is integral to contributing to a climate solution, and individual-level choices can make a difference. As one participant noted, "*Though it may seem small, the beginning of change begins from a single person, and thus I am doing my part to help protect the planet."*

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Tables and Figures

Table 1

Demographic Characteristics of All Participants

	Study 1				Study 2			
Variable	*n*	%	M	*SD*	*n*	*%*	M	*SD*
Race								
Asian	21	10.1			49	12.4		
Black	5	2.4			30	7.6		
Latinx	8	3.8			26	6.6		
Mulitracial	13	6.2			10	2.5		
Native American	0	0			2	0.5		
White	160	76.9			273	69.3		
Not listed here	1	0.5			4	1		
Ethnicity - Hispanic/x, Latino/a/x, or Spanish Origin								
Yes	20	9.6			43	10.9		
No	188	90.4			351	89.1		
Class								
Freshman	79	38						
Sophomore	53	25.5						
Junior	53	25.5						
Senior	17	8.2						
Other	6	2.9						
Sexual Orientation								
Straight or Heterosexual	148	71.2			352	89.3		
Gay	15	7.2			17	4.3		
Bisexual	28	13.5			18	4.6		
Pansexual	5	2.4			3	0.8		
Asexual	3	1.4			3	0.8		
Prefer not to say	5	2.4			1	0.3		
Other	4	1.9			0	0		
Annual Income								
Less than $25,000					53	13.5		
$25,000 - $50,000					105	26.6		

$50,000 - $100,000			150	38.1		
$100,000 - $200,000+			77	19.5		
Prefer not to say			9	2.3		
Employment Status						
Employed full-time			258	65.5		
Employed part-time			44	11.2		
Unemployed			69	17.5		
Retired			13	3.3		
Prefer not to say			10	2.5		
Education Level						
Some high school			6	1.5		
High school or GED			144	36.5		
Associates degree			44	11.2		
Bachelor’s degree			148	37.6		
Master’s degree			34	8.6		
PhD or higher			10	2.5		
Trade school			8	2		
Age	20.61	3.90			37.47	11.75

Table 2

Results of Study 1 t Test Analyses (Two Tailed)

	Threat		No Threat (Control)		*t*(186)	*p*	Cohen's *d*
Measure	*M*	*SD*	*M*	*SD*			
Masculine Attributes	4.78	0.98	4.82	0. 82	-0.33	.745	0.05
Feminine Attributes	5.51	0.75	5.57	0.73	-0.55	.586	0.08
Neutral Attributes	5.55	0.69	5.57	0.69	-0.24	.812	0.04
					t(183)		
Masculine Preferences	3.38	1.47	3.40	1.31	-0.14	.893	0.02
Feminine Preferences	3.32	1.29	3.41	1.27	0.50	.617	0.07
Neutral Preferences	3.75	1.23	3.89	1.36	-0.72	.471	0.11
					t(185)		
Height (inches)	70.80	2.99	70.40	3.09	0.81	.417	0.12
Weight (pounds)	168.05	37.50	165.30	28.90	0.55	.585	0.08

Table 3

Results of Study 2 t Tests Analyses (Two Tailed)

	Threat		No Threat (Control)		*t*(392)	*p*	Cohen's *d*
Measure	*M*	*SD*	*M*	*SD*			
Masculine PEBs	4.83	1.07	5.00	1.09	-1.52	.130	0.15
Feminine PEBs	4.55	1.19	4.69	1.24	-1.08	.279	0.11
Neutral PEBs	4.79	1.12	4.86	1.21	-0.65	.513	0.07
Full PEBs	3.81	0.84	3.91	0.87	-1.68	.244	0.12

Table 4

Study 1: Regression for Attribute and Preference Subscales

Measure	Variable	B	SE B	β	*t*	*p*
Masculine Attributes	Condition	-0.09	-0.12	-0.05	-0.70	.485
	Masculine ID	0.20	0.12	0.16	1.61	.110
	Condition*Masc ID	0.41	0.12	0.24	2.44	.016*
Feminine Attributes	Condition	-0.07	-0.11	-0.05	-0.63	.530
	Masculine ID	-0.04	0.11	-0.04	-0.36	.716
	Condition*Masc ID	0.19	0.15	1.13	1.25	.213
Neutral Attributes	Condition	0.00	0.00	-0.01	-0.18	.858
	Masculine ID	0.00	0.00	-0.08	-0.71	.478
	Condition*Masc ID	0.00	0.00	0.00	0.00	1.00
Masculine Preferences	Condition	-0.06	0.20	-0.02	-0.28	.780
	Masculine ID	0.23	0.20	0.12	1.13	.262
	Condition*Masc ID	0.22	0.28	0.08	0.77	.440
Feminine Preferences	Condition	-0.10	0.19	-0.04	-0.53	.601
	Masculine ID	-0.05	0.19	-0.03	-0.25	.807
	Condition*Masc ID	0.13	0.26	0.06	0.51	.611
Neutral Preferences	Condition	-0.13	0.19	-0.05	-0.69	.495
	Masculine ID	-0.11	0.19	-0.06	-0.56	.576
	Condition*Masc ID	0.03	0.26	0.01	0.13	.896
Height	Condition	0.36	0.45	0.06	0.80	.426
	Masculine ID	0.28	0.45	0.07	0.63	.532
	Condition*Masc ID	-0.25	0.61	-0.04	-0.41	.683
Weight	Condition	2.90	4.98	0.04	0.58	.561
	Masculine ID	2.41	4.97	0.05	0.49	.682
	Condition*Masc ID	-5.83	6.84	-0.09	-0.85	.395

Note: $p < .001$***, $p < .01$**, $p < 0.05$

Table 5

Study 1: Regression with Political Attitudes as a Covariate

Measure	Variable	B	SE B	β	*t*	*p*
Masculine Attributes	Step 1					
	Political Attitudes	0.08*	0.03	0.17	2.39	.018
	Step 2					
	Condition	-0.04	0.12	-0.02	-0.30	.770
	Masculine ID	0.13	0.13	0.11	1.03	.300
	Condition*Masc ID	0.44*	0.17	0.26	2.59	.010
Feminine Attributes	Step 1					
	Political Attitudes	-0.01	0.03	-0.06	-0.53	.598
	Step 2					
	Condition	-0.08	0.11	-0.05	-0.68	.499
	Masculine ID	-0.02	0.11	-0.02	-0.19	.853
	Condition*Masc ID	0.17	0.15	0.13	1.16	.247
Neutral Attributes	Step 1					
	Political Attitudes	-0.07**	0.03	-0.19	-2.64	.009
	Step 2					
	Condition	-0.05	0.10	-0.03	-0.46	.644
	Masculine ID	-0.01	0.10	-0.01	-0.13	.898
	Condition*Masc ID	-0.03	0.14	-0.02	-0.22	.823
Masculine Preferences	Step 1					
	Political Attitudes	0.12*	0.05	0.14	2.35	.020
	Step 2					
	Condition	0.01	0.20	0.00	0.05	.963
	Masculine ID	0.14	0.21	0.07	0.66	.508
	Condition*Masc ID	0.24	0.28	0.09	0.88	.380
Feminine Preferences	Step 1					
	Political Attitudes	-0.09*	0.05	-0.16	-1.98	.049
	Step 2					
	Condition	-0.14	0.19	-0.05	-0.72	.471
	Masculine ID	0.05	0.19	0.03	0.25	.801
	Condition*Masc ID	0.08	0.26	0.03	0.30	.763

Neutral Preferences	Step 1					
	Political Attitudes	0.04	0.05	0.07	0.77	.444
	Step 2					
	Condition	-0.08	0.19	-0.03	-0.41	.686
	Masculine ID	-0.15	0.19	-0.09	-0.77	.442
	Condition*Masc ID	0.03	0.26	0.01	0.10	.917
Height	Step 1					
	Political Attitudes	0.10	0.11	0.06	0.87	.387
	Step 2					
	Condition	0.40	0.46	0.07	0.87	.368
	Masculine ID	0.19	0.46	0.04	0.40	.688
	Condition*Masc ID	-0.20	0.62	-0.04	-0.33	.745
Weight	Step 1					
	Political Attitudes	-0.68	1.20	-0.05	-0.57	.573
	Step 2					
	Condition	1.12	4.85	0.02	0.23	.818
	Masculine ID	3.09	4.91	0.07	0.63	.530
	Condition*Masc ID	-4.92	6.61	-0.08	-0.75	.457

Note: $p < .001$***, $p < .01$**, $p < 0.05$*

Table 6

Study 1 Prize Preference Factor Loadings

	Factor			
Item	**Education**	**Luxury**	**Utility**	**Uniqueness**
Education (α = .51)				
An eco-friendly reusable tote bag	**0.544**	-0.020	0.042	0.564
A free Western water bottle	**0.346**	0.062	0.138	0.836
2 tickets to a Western theater performance	**0.283**	0.172	0.204	0.793
$25 gift card to the Western bookstore	**0.361**	-0.025	0.351	0.690
Luxury (α = .53)				
$25 gift card for axe throwing during finals week to de-stress	-0.209	**0.339**	0.336	0.719
$25 gift card to a spa during finals week to de-stress	-0.083	**0.683**	-0.028	0.685
$25 gift card to Bath & Body Works	0.319	**0.513**	-0.062	0.545
$25 gift card to Home Depot	0.117	**0.284**	0.099	0.625
Utility (α = .50)				
A free haircut at Supercuts	0.084	-0.095	**0.653**	0.867
2 free meals at Jimmy Johns	-0.237	0.077	**0.366**	0.693
A free car maintenance check at a local garage	-0.096	0.216	**0.363**	0.826
2 tickets to a Western men's sports game	0.213	0.284	**0.313**	0.793

Note: Minimum Residual extraction was used with oblimin rotation. Bolded factor loadings indicate factor membership.

Table 7

Comparison of Masculine Identification and Political Attitudes Between Both Studies

	Threat		No Threat (Control)		Full Sample		*t*(505.08)	*p*	Cohen's *d*
Masculine ID	*M*	*SD*	*M*	*SD*	*M*	*SD*			
Study 1	3.46	0.77	3.35	0.73	3.41	0.75	-2.83	.005	0.23
Study 2	3.61	0.94	3.60	0.92	3.61	0.93			
Political Attitudes							*t*(543.89)		
Study 1	2.94	1.90	3.30	2.01	3.11	1.96	-4.48	< .001	0.35
Study 2	3.89	2.62	4.05	2.83	3.97	2.72			

Table 8

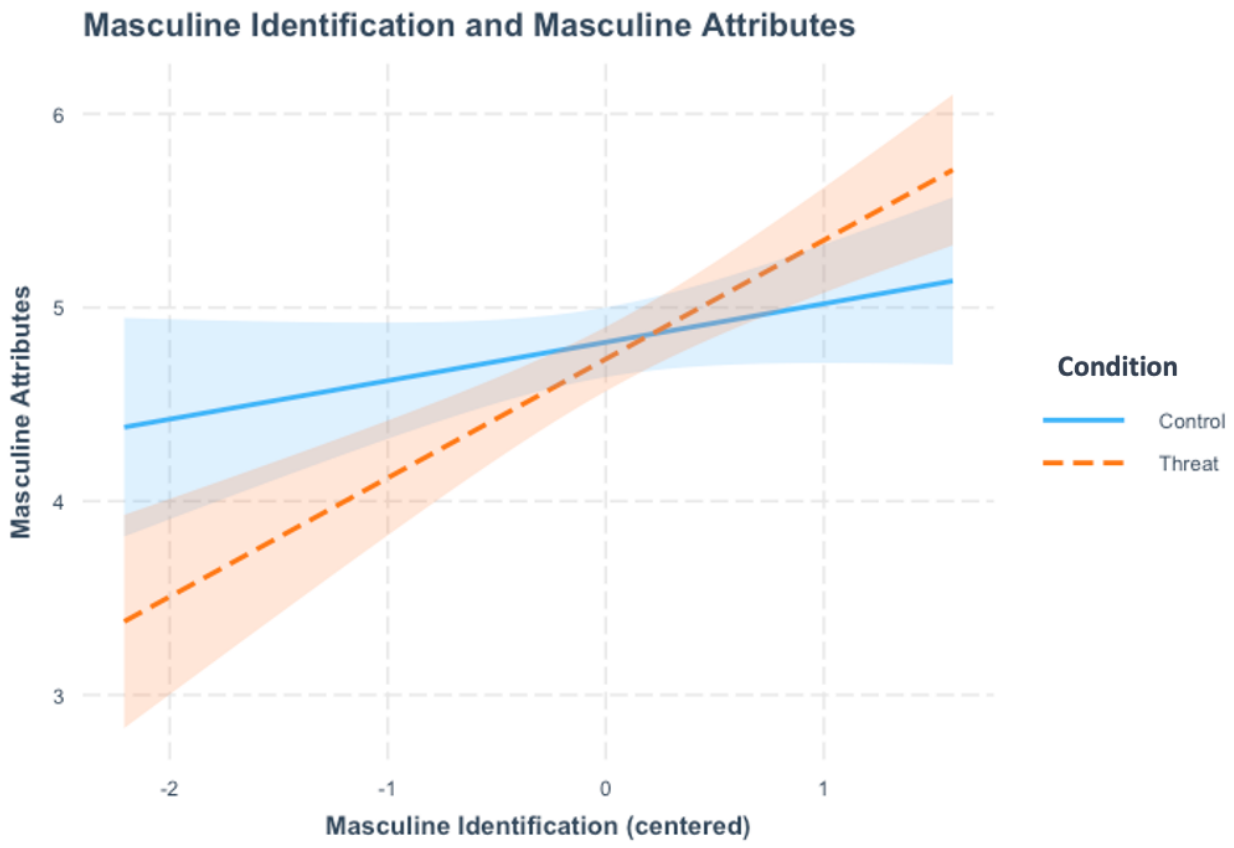
Study 2: Regression for Pro-Environmental Behavior Subscales

Measure	Variable	B	SE B	β	*t*	*p*
Masculine PEBs	Condition	-0.17	0.11	-0.77	-1.53	.126
	Masculine ID	0.19*	0.08	0.17	2.34	.020*
	Condition*Masc ID	-0.22	0.12	-0.13	-1.91	.056
Feminine PEBs	Condition	-0.13	0.12	-0.06	-1.09	.278
	Masculine ID	0.14	0.09	0.11	1.53	.126
	Condition*Masc ID	-0.31	0.13	-0.17	-2.32	.021*
Neutral PEBs	Condition	-0.08	0.12	-0.03	-0.66	.510
	Masculine ID	0.17	0.09	0.13	1.86	.064
	Condition*Masc ID	-0.29	0.13	-0.17	-2.32	.021*
Full PEBs	Condition	-0.10	0.09	-0.06	-1.18	.240
	Masculine ID	0.13	0.07	0.14	2.00	.046*
	Condition*Masc ID	-0.23	0.09	-0.18	-2.49	.013*
Full PEBs with Political Attitudes as a Covariate	Step 1					
	Political Attitudes	-0.09	0.02	-0.29	-5.69	<.001***
	Step 2					
	Condition	-0.12	0.08	-0.06	-1.41	.160
	Masculine ID	0.23	0.07	-0.19	3.45	<.001***
	Condition*Masc ID	-0.25	0.09	0.25	-2.80	.005**

Note: $p < .001$***, $p < .01$**, $p < 0.05$

Figure 1

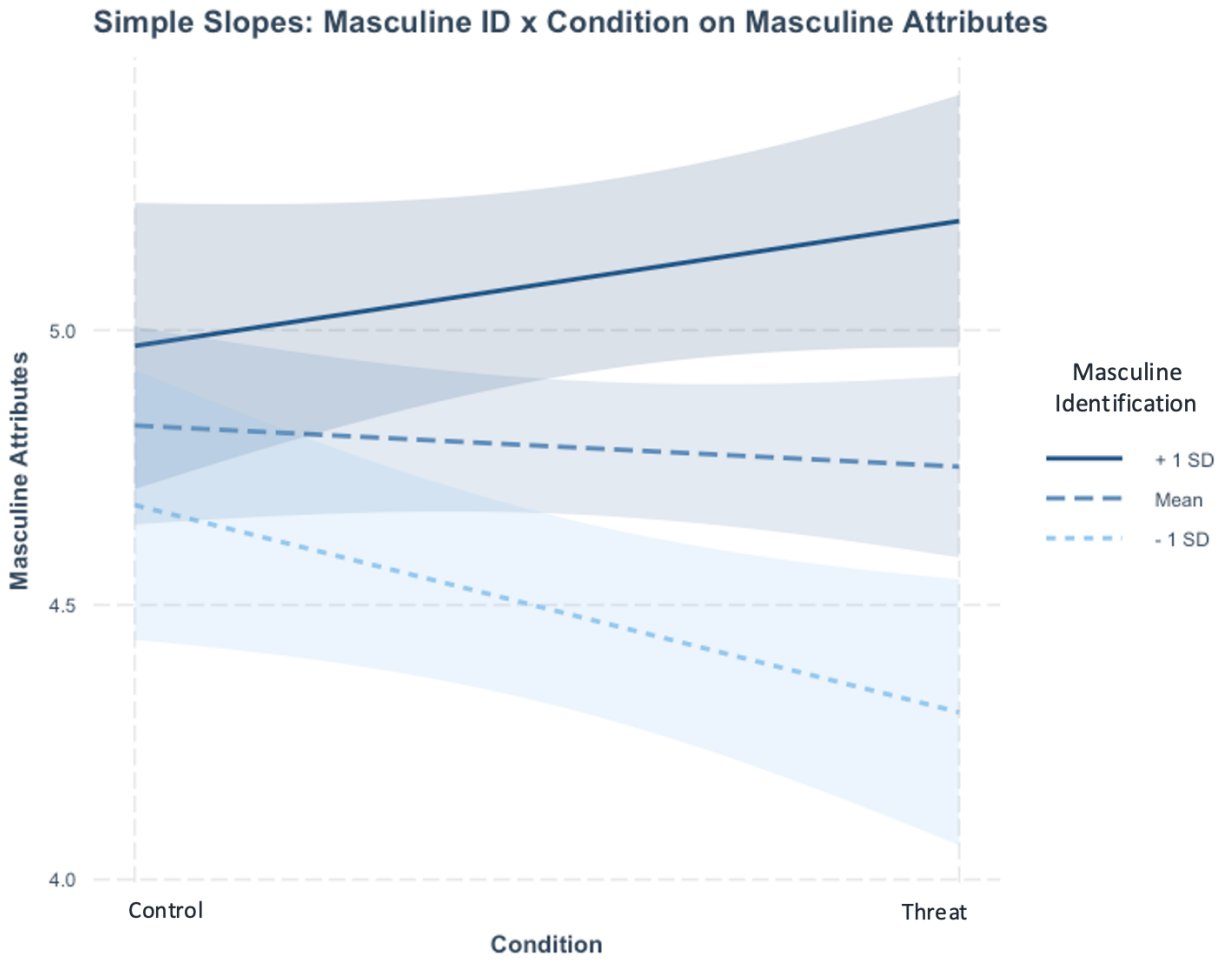
Study 1: Interaction of Masculine Gender Identification and Masculinity Threat on Masculine Attributes



Note: Shading reflects 95% CI.

Figure 2

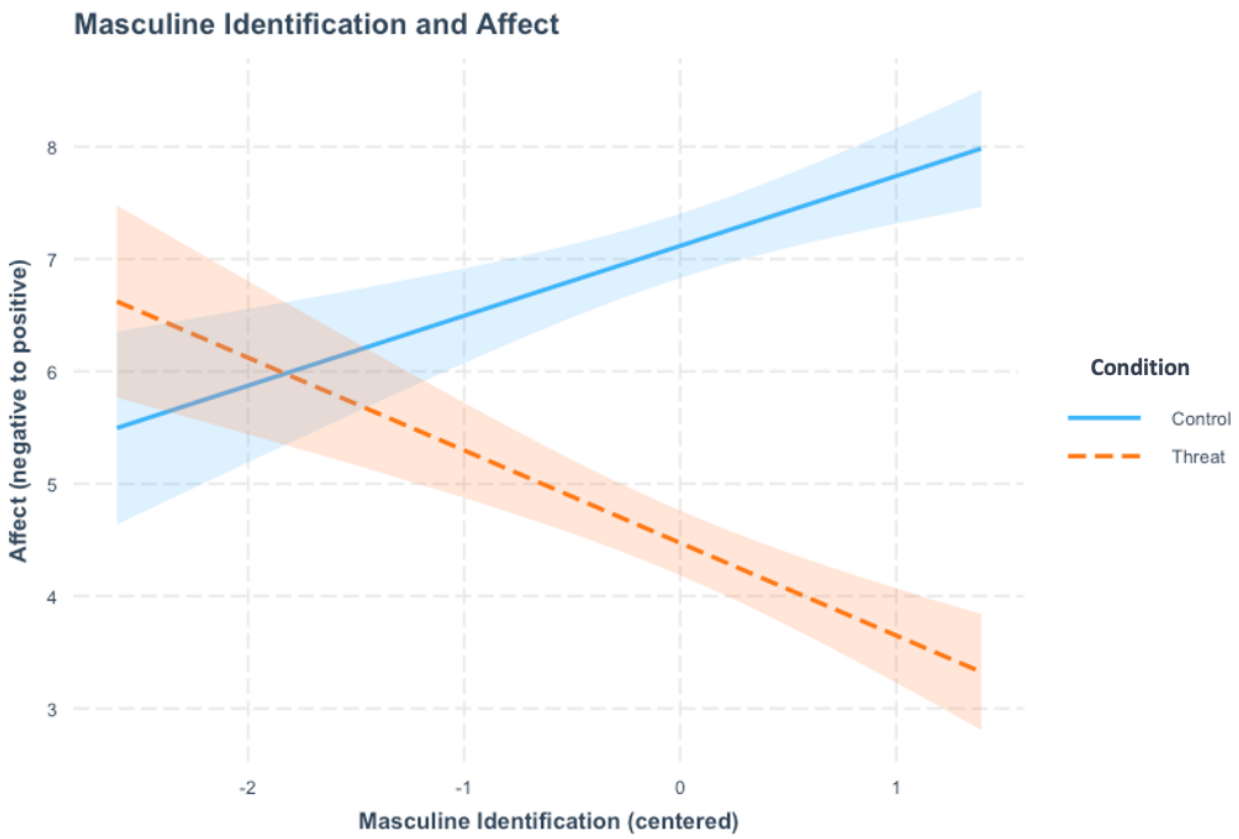
Study 1: Simple Slopes of Masculine Gender Identification Moderating the Relationship Between Masculinity Threat and Masculine Attributes



Note: The solid blue line represents the regression line predicting masculine attributes from threat condition for individuals one standard deviation above the mean on masculine gender identification. The long-dashed line represented the regression line for individuals with mean level masculine identification and the short-dashed line represents the regression line for individuals one standard deviation below the mean on masculine identification. Shading reflects 95% CI.

Figure 3

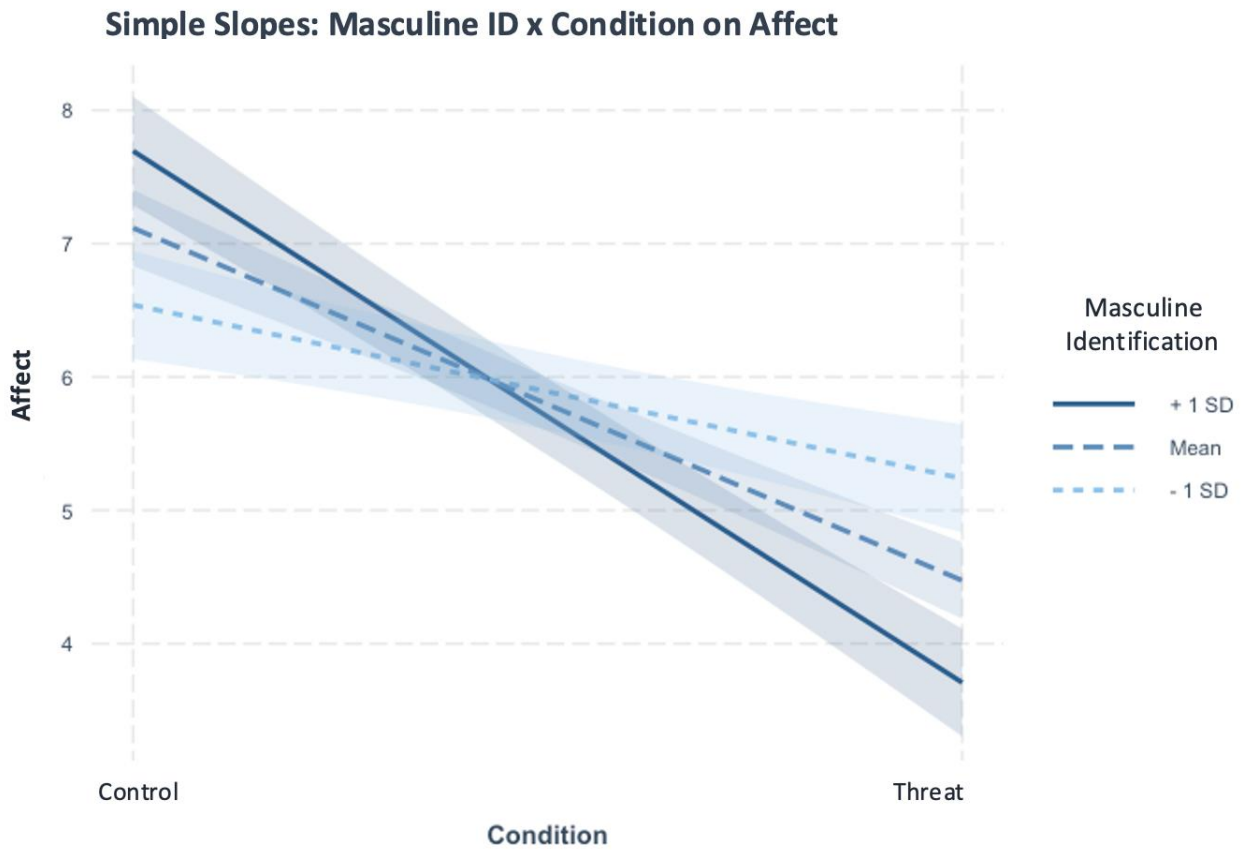
Study 2: Interaction of Masculine Gender Identification and Masculinity Threat on Affect (Manipulation Check)



Note: Shading reflects 95% CI.

Figure 4

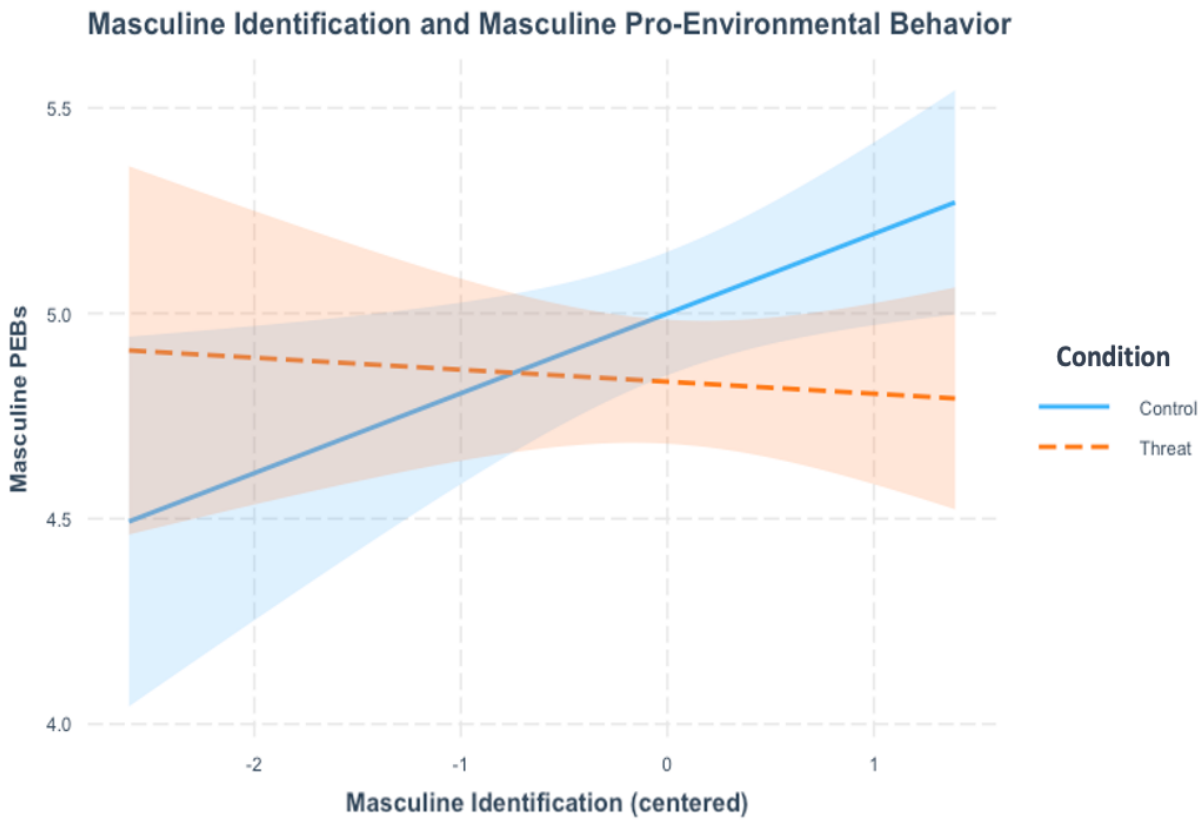
Study 2: Simple Slopes of Masculine Gender Identification Moderating the Relationship Between Masculinity Threat and Affect



Note: The solid blue line represents the regression line predicting affect from threat condition for individuals one standard deviation above the mean on masculine gender identification. The long-dashed line represented the regression line for individuals with mean level masculine identification and the short-dashed line represents the regression line for individuals one standard deviation below the mean on masculine identification. Shading reflects 95% CI.

Figure 5

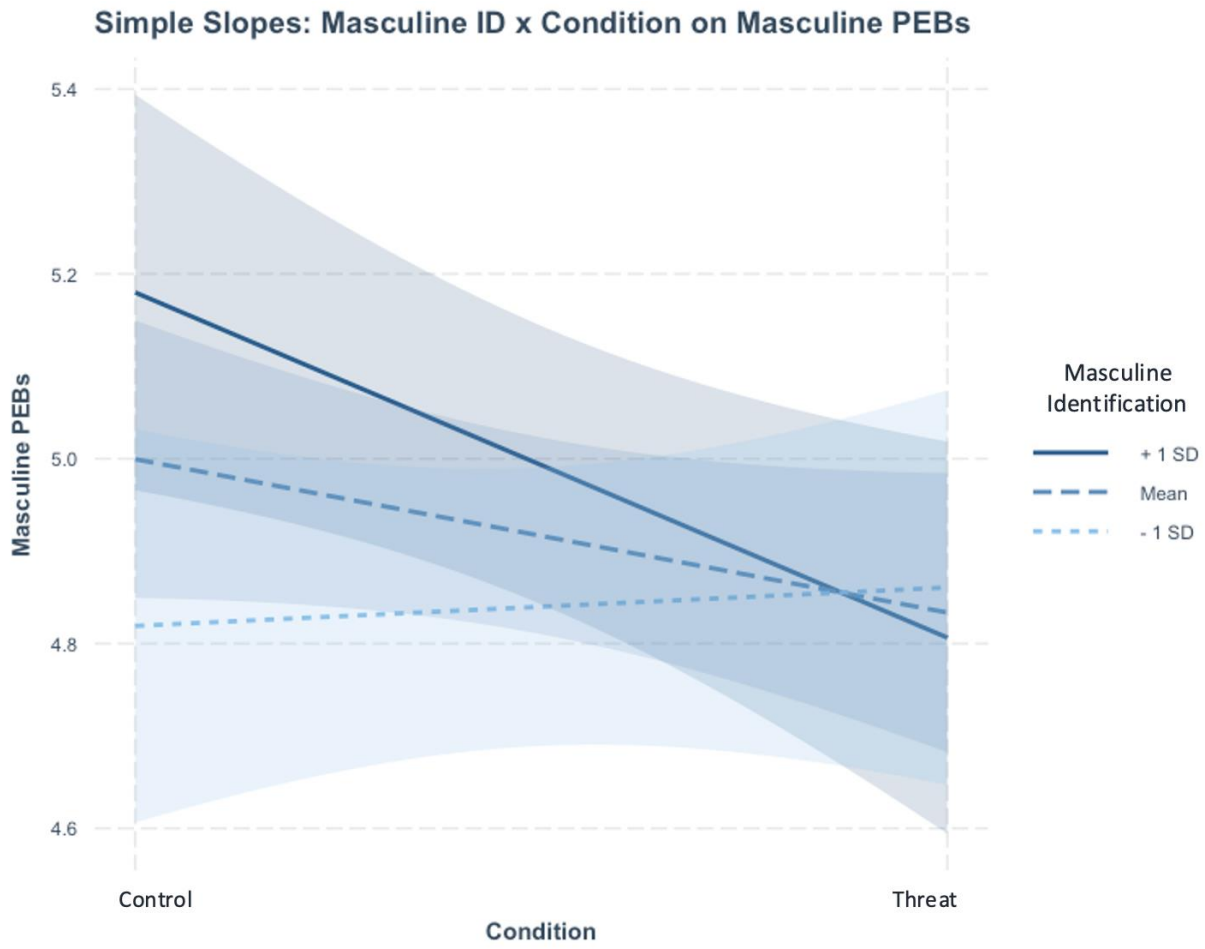
Study 2: Interaction of Masculine Gender Identification and Masculinity Threat on Masculine Pro-Environmental Behaviors



Note: Shading reflects 95% CI.

Figure 6

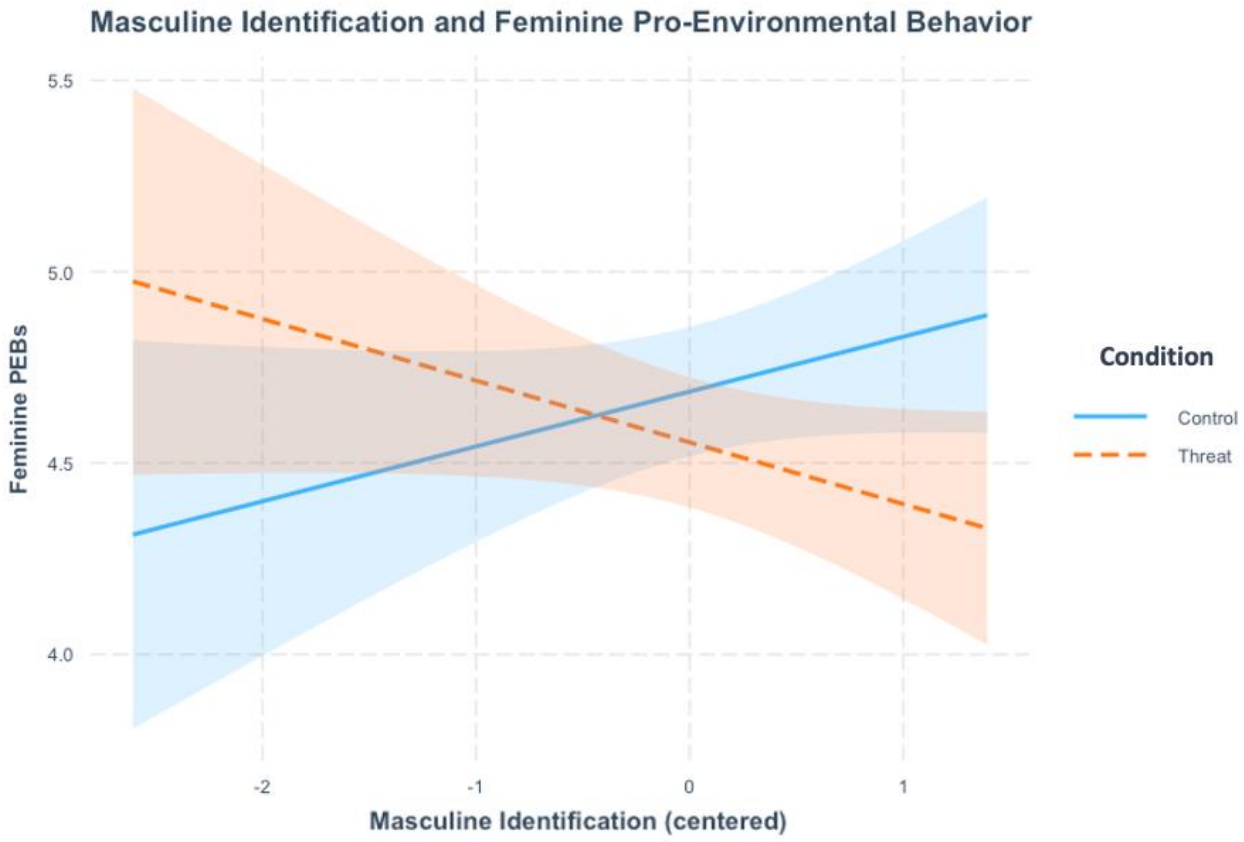
Study 2: Simple Slopes of Masculine Gender Identification Moderating the Relationship Between Masculinity Threat and Masculine Pro-Environmental Behaviors



Note: The solid blue line represents the regression line predicting masculine pro-environmental behaviors from threat condition for individuals one standard deviation above the mean on masculine gender identification. The long-dashed line represented the regression line for individuals with mean level masculine identification and the short-dashed line represents the regression line for individuals one standard deviation below the mean on masculine identification. Shading reflects 95% CI.

Figure 7

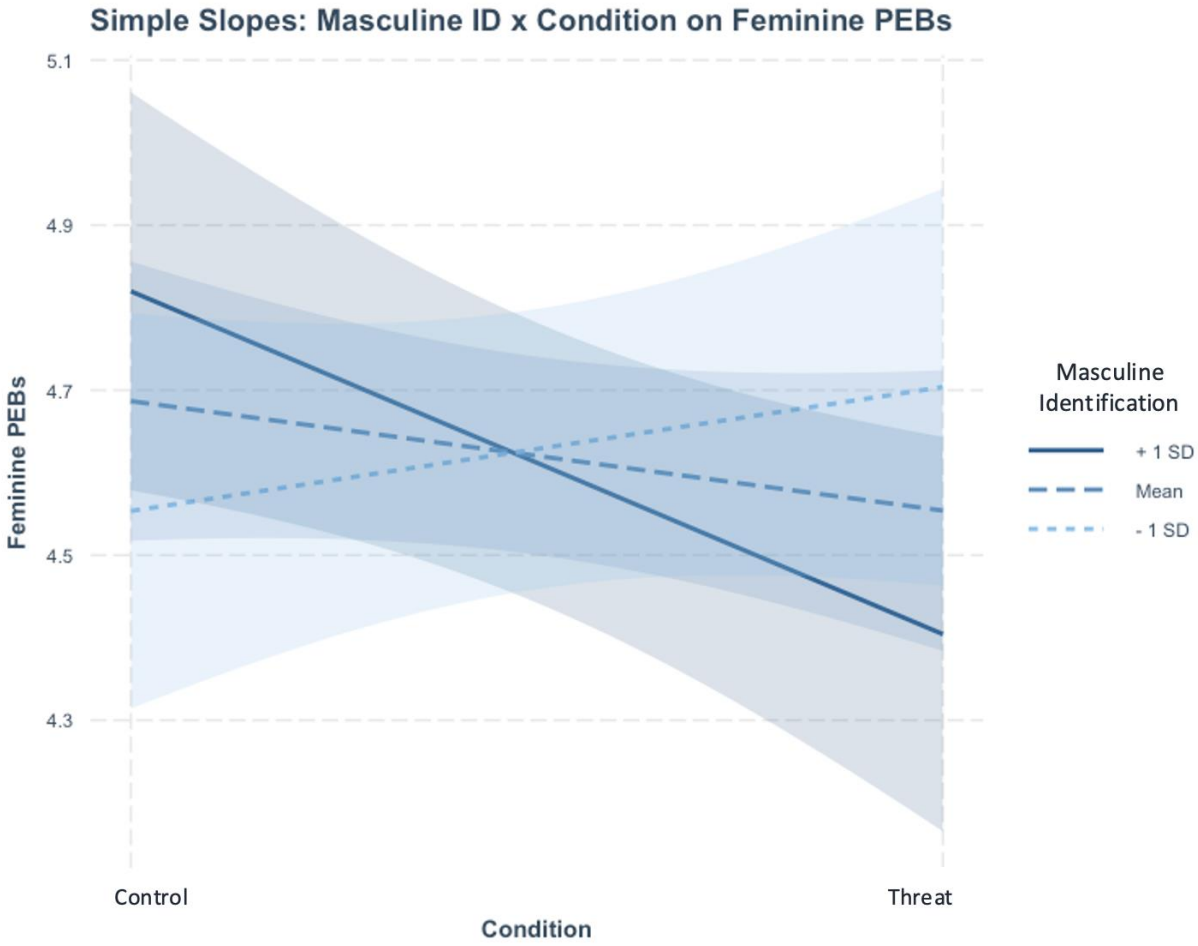
Study 2: Interaction of Masculine Gender Identification and Masculinity Threat on Feminine Pro-Environmental Behaviors



Note: Shading reflects 95% CI.

Figure 8

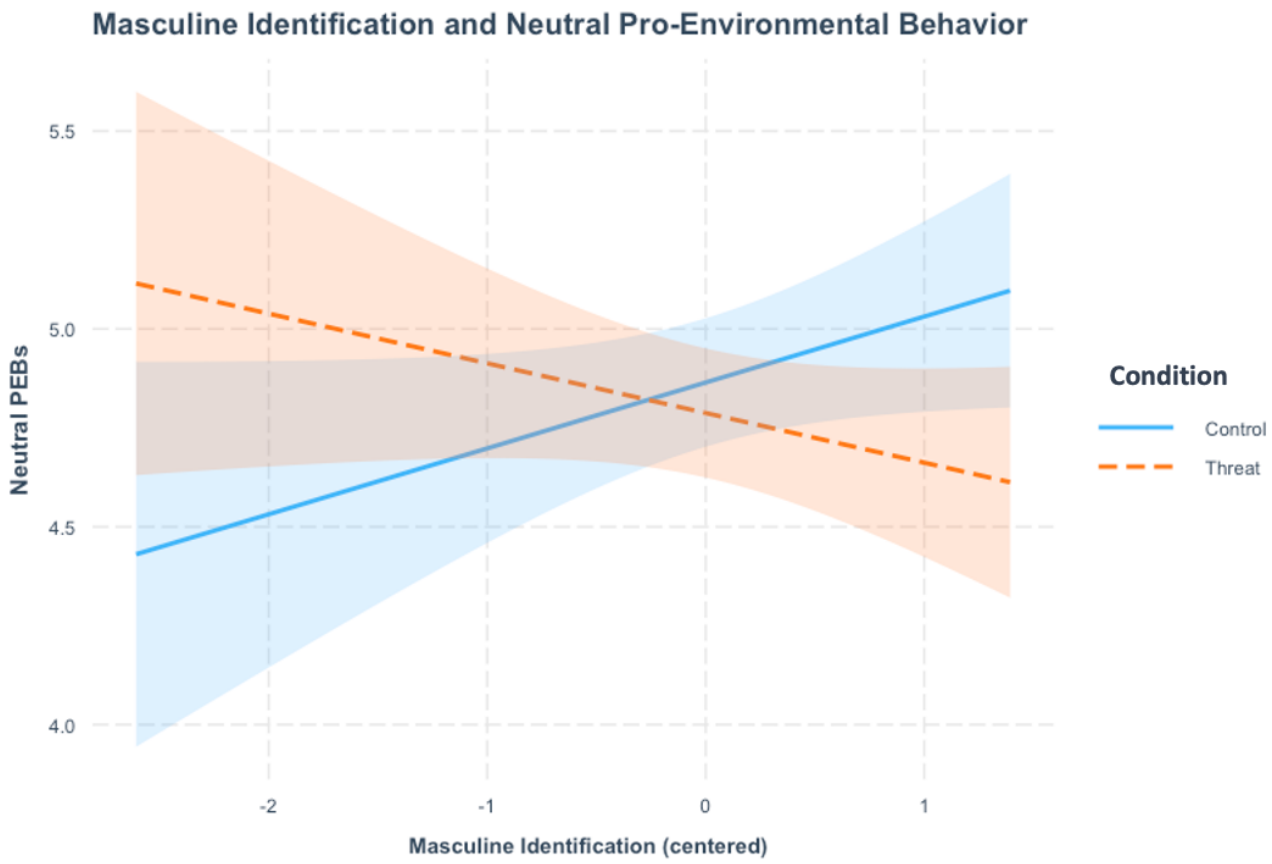
Study 2: Simple Slopes of Masculine Gender Identification Moderating the Relationship Between Masculinity Threat and Feminine Pro-Environmental Behaviors



Note: The solid blue line represents the regression line predicting feminine pro-environmental behaviors from threat condition for individuals one standard deviation above the mean on masculine gender identification. The long-dashed line represented the regression line for individuals with mean level masculine identification and the short-dashed line represents the regression line for individuals one standard deviation below the mean on masculine identification. Shading reflects 95% CI.

Figure 9

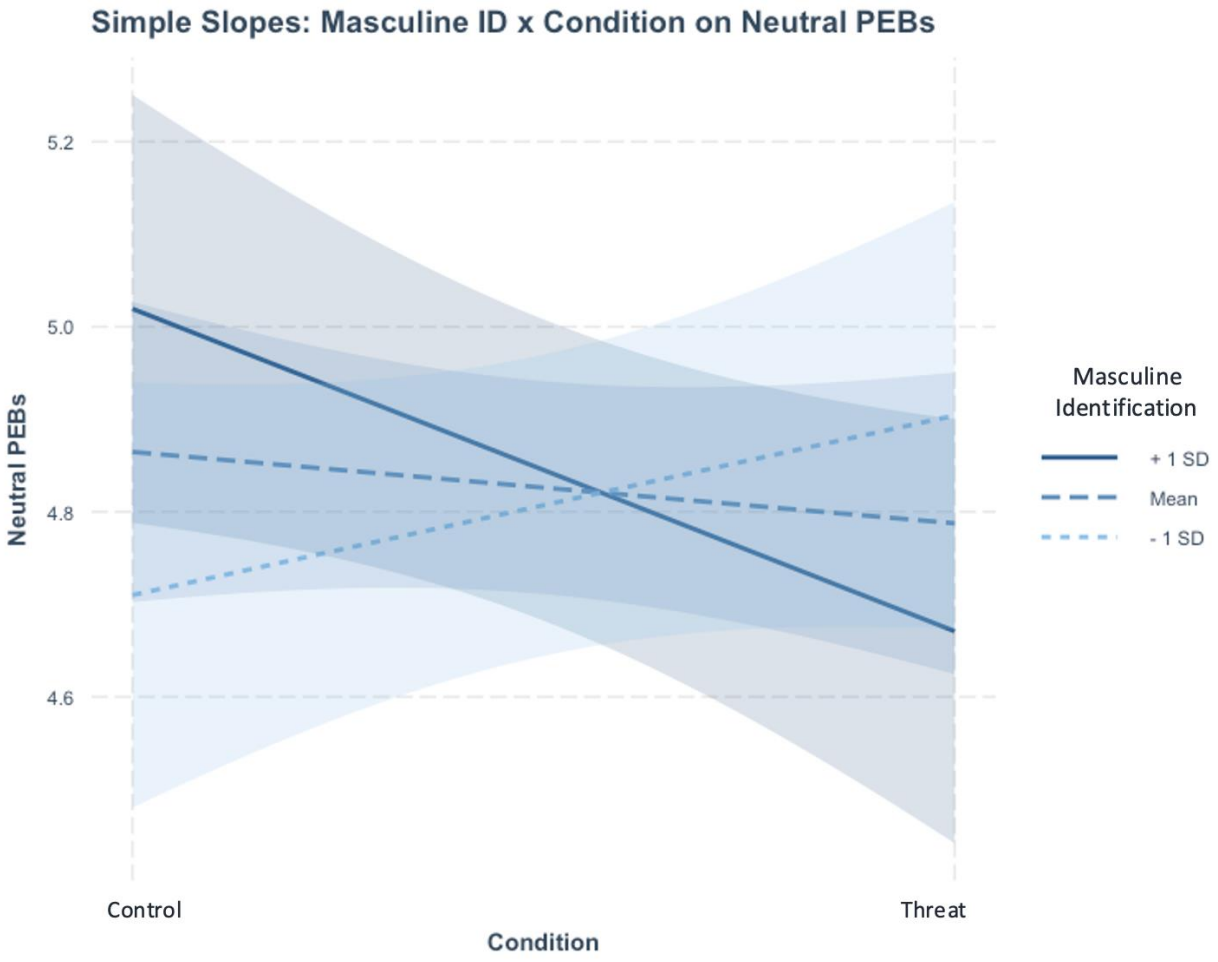
Study 2: Interaction of Masculine Gender Identification and Masculinity Threat on Neutral Pro-Environmental Behaviors



Note: Shading reflects 95% CI.

Figure 10

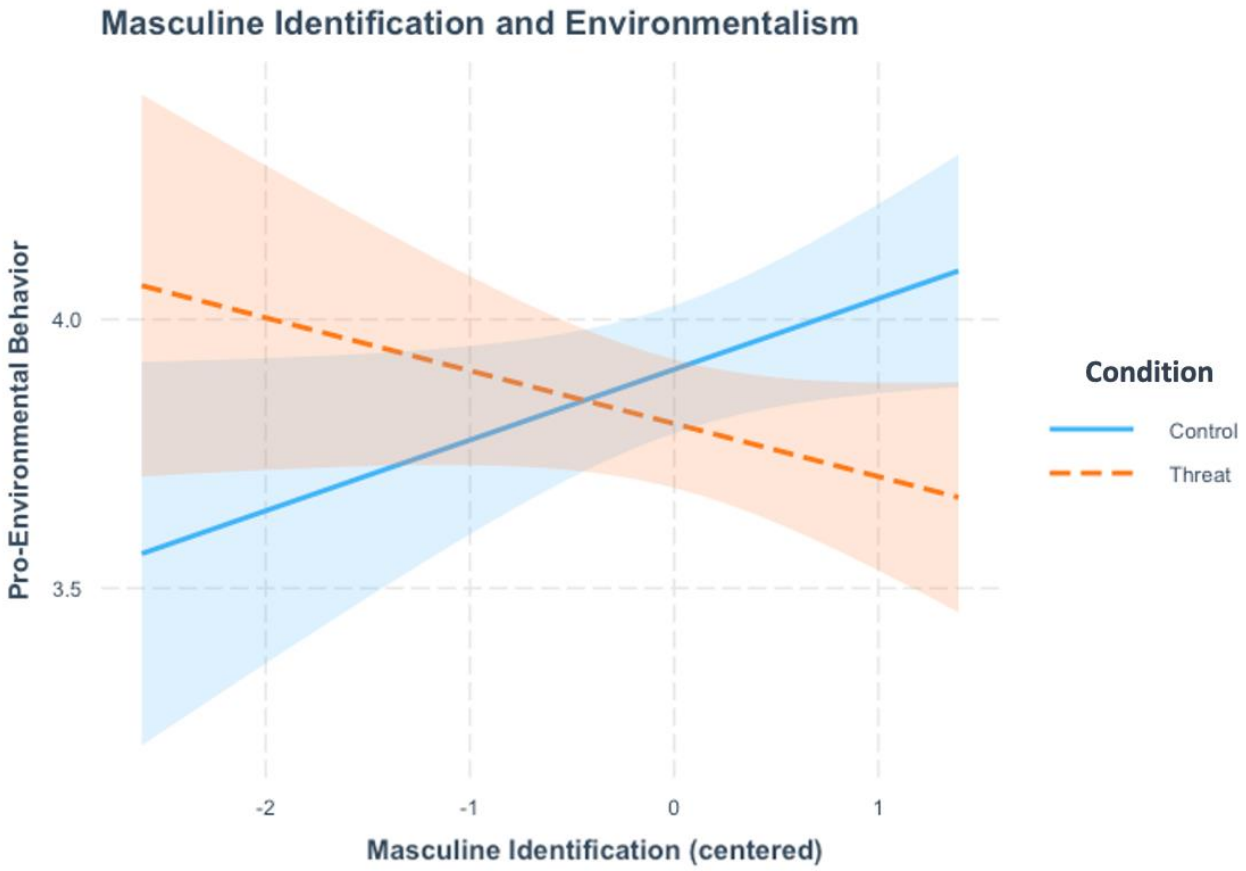
Study 2: Simple Slopes of Masculine Gender Identification Moderating the Relationship Between Masculinity Threat and Neutral Pro-Environmental Behaviors



Note: The solid blue line represents the regression line predicting neutral pro-environmental behaviors from threat condition for individuals one standard deviation above the mean on masculine gender identification. The long-dashed line represented the regression line for individuals with mean level masculine identification and the short-dashed line represents the regression line for individuals one standard deviation below the mean on masculine identification. Shading reflects 95% CI.

Figure 11

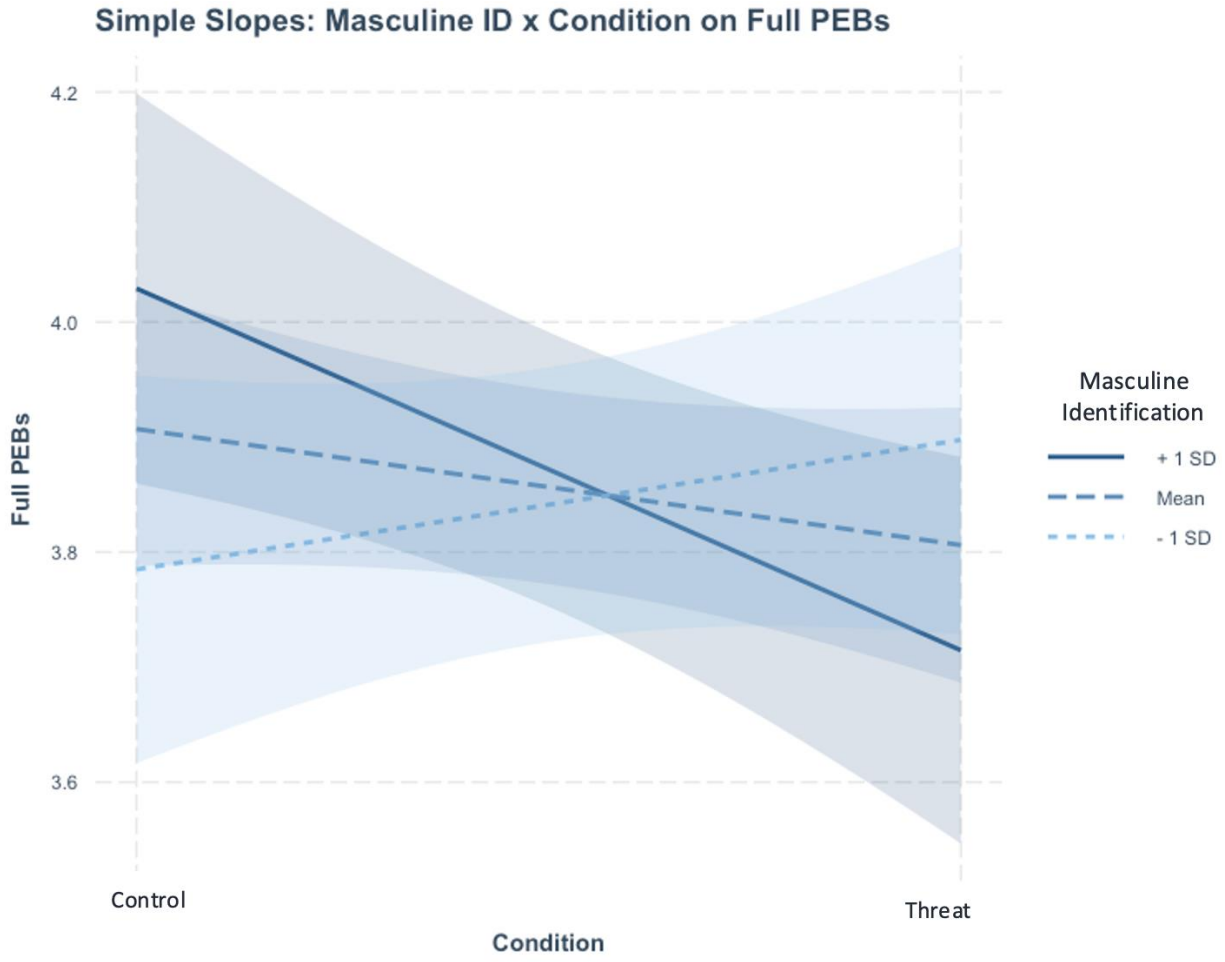
Study 2: Interaction of Masculine Gender Identification and Masculinity Threat on Full Pro-Environmental Behaviors Scale



Note: Shading reflects 95% CI.

Figure 12

Study 2: Simple Slopes of Masculine Gender Identification Moderating the Relationship Between Masculinity Threat and Pro-Environmental Behaviors



Note: The solid blue line represents the regression line predicting pro-environmental behaviors from threat condition for individuals one standard deviation above the mean on masculine gender identification. The long-dashed line represented the regression line for individuals with mean level masculine identification and the short-dashed line represents the regression line for individuals one standard deviation below the mean on masculine identification. Shading reflects 95% CI.

Appendix A

Gender Identification (Glick et al., 2015)

Instructions: Please answer the following questions based on the below scale:

1	2	3	4	5
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

1. I identify strongly with other men.
2. Being a man is an important part of who I am.
3. I feel strong ties with other men.
4. I feel a sense of solidarity with other men.
5. Being masculine is an important part of who I am.

Appendix B

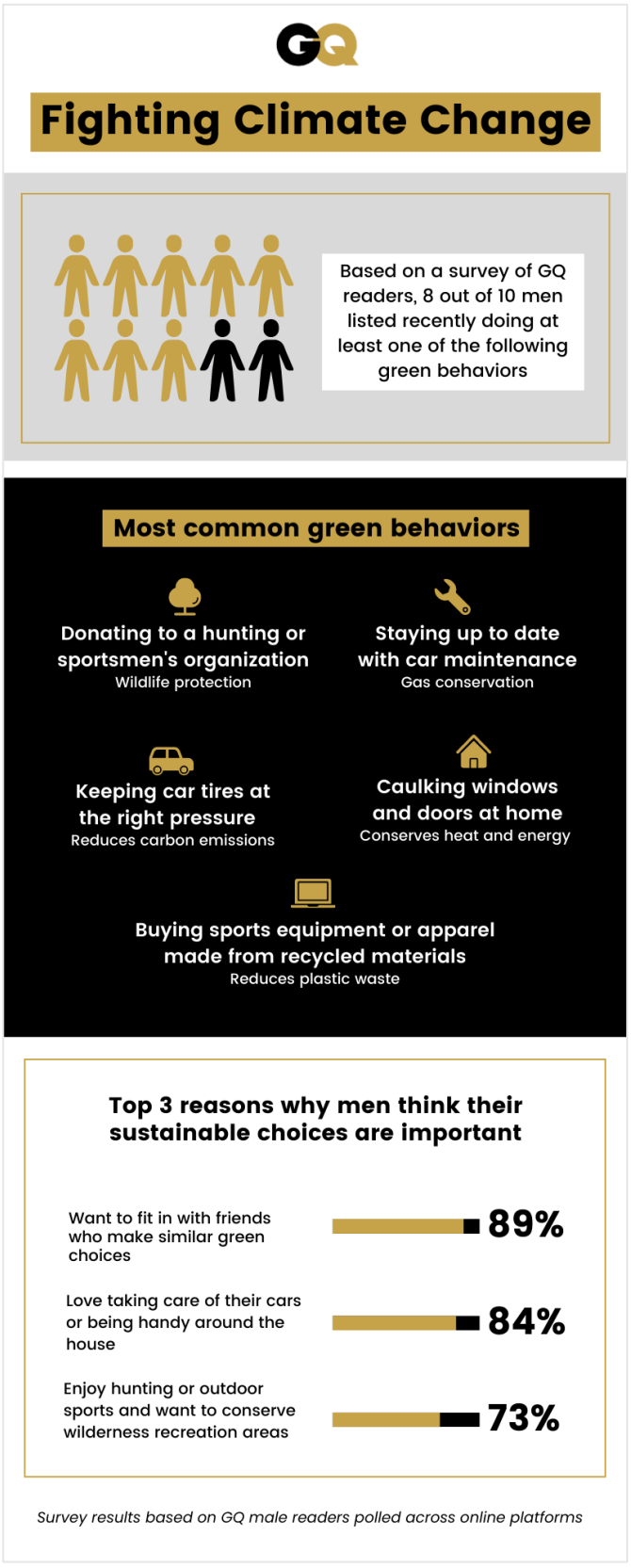
Study 1 Masculinity Threat

Instructions: Please take 5 minutes to respond to the two following prompts. There are no right or wrong answers. Note: sustainable actions in this question are defined as activities or behaviors that help conserve the environment, or protect instead of harm nature. Sustainable actions are also known as environmentally friendly behaviors or green behaviors.

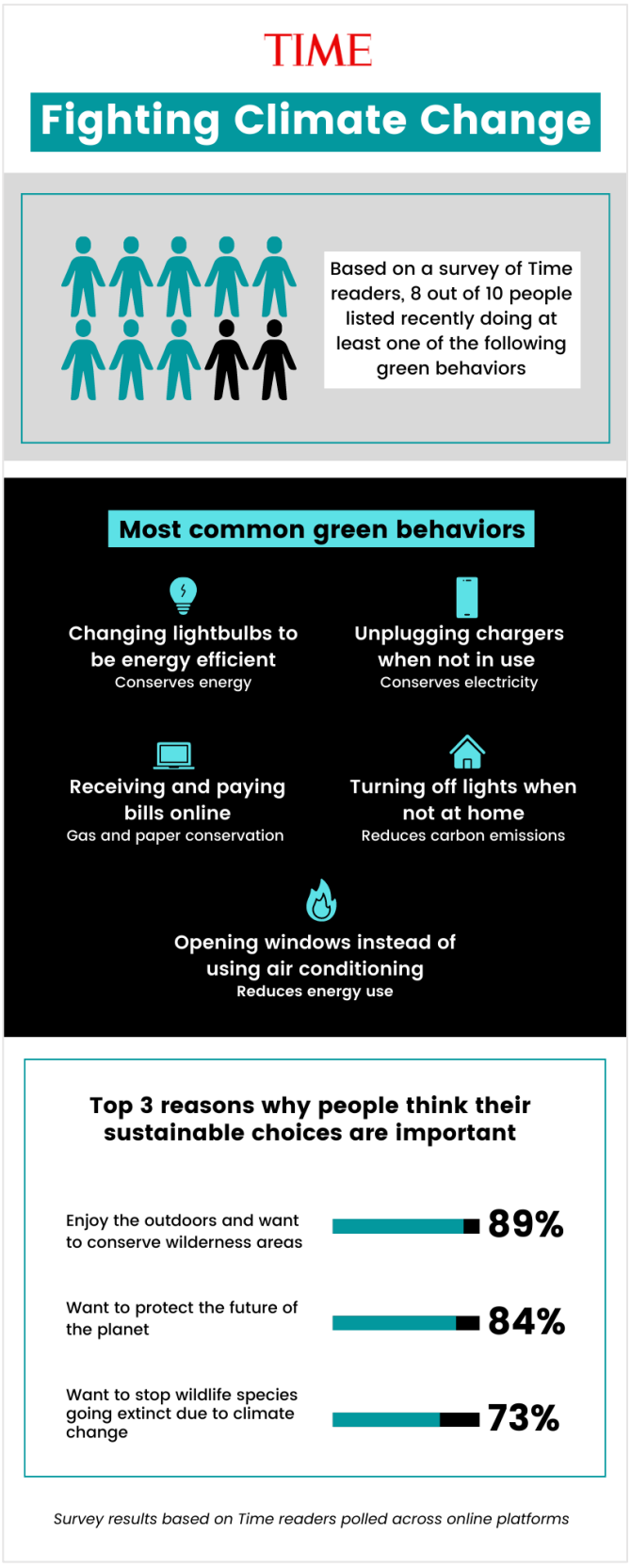
Participant response form	
List some sustainable actions you can think of that you've engaged in in the past 6 months (bullet points are fine)	
Why were these actions important to you or why did you choose to do them?	

Infographic Instructions: On the next screen, you will be shown real data and information gathered about how men tend to behave sustainably towards the environment in an infographic. Please take at least 1 minute to review this data closely.

Threat Infographic (GQ Magazine)



Control Infographic (Time Magazine)

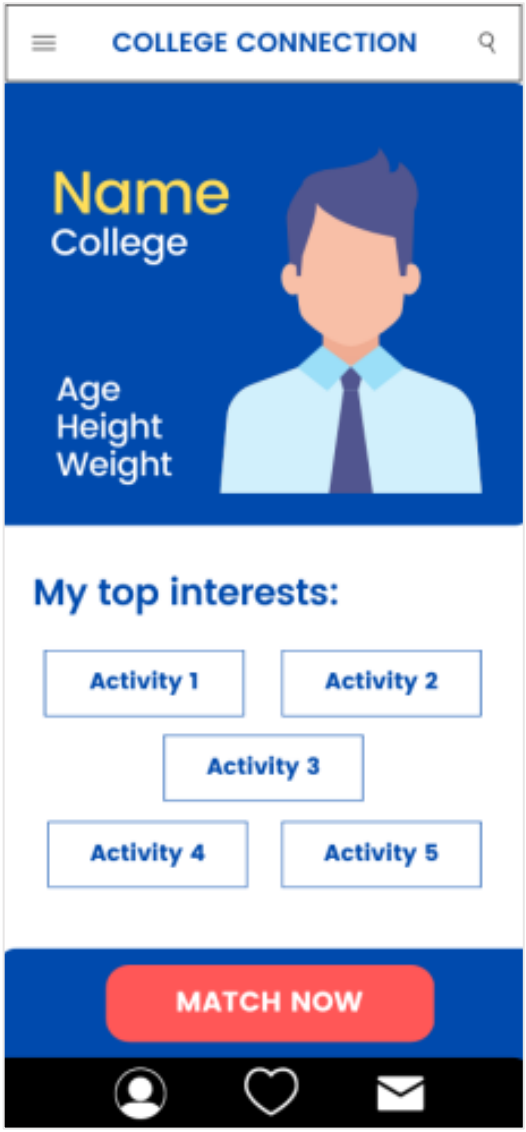


Appendix C

Masculine, Feminine, and Neutral Attributes

Instructions: We're interested in assessing college student dating choices. Imagine that a company is testing a new college campus dating app called College Connection, which matches people based on their values and interests (such as being an LQBTQ+ ally, engaging in sports or being active, etc.). Based on your interests and values (such as the ones you just wrote about), please create a fake online dating profile for yourself with the following questions. Your responses will not be used in a real dating app or be shared with anyone - these questions are only intended to inform the type of responses that men at WWU might provide.

Here is an example profile:



Name	*First only*
Height	*Inches*
Weight	*Pounds*
Age	
Please rate these hobbies, interests, and values based on which are most important to you. Imagine that the top 5 interests that have the highest ratings are the ones that would appear on your hypothetical public dating profile. *1 (not at all important to me) to 7 (very important to me)*	**Masculine** Athletic/being active Being a handyman Makes decisions easily Natural leader Ambition Confidence **Feminine** Sensitive to other's needs Being family-oriented Sympathetic Cares about the environment Being romantic Kindness **Neutral** LGBTQ+ ally Sense of humor Honesty Traveling Trying new food Enjoys music

Appendix D

Masculine, Feminine, and Neutral Preferences (adapted from Cheryan et al., 2015)

Instructions: Please rate the following items based on which you would prefer to receive as compensation for participating in this study (in addition to course credit). We will randomly be selecting a participant to receive one of these items as a prize.

Gendered Subtype	Items	Response Options
Feminine	1. $25 gift card to a spa during finals week to de-stress	1 = Not at all, 7 = Very much
	2. $25 gift card to Bath & Body Works	
	3. 2 tickets to a Western theater performance	
	4. An eco-friendly reusable tote bag	
Masculine	1. $25 gift card for axe throwing during finals week to de-stress	1 = Not at all, 7 = Very much
	2. $25 gift card to Home Depot	
	3. 2 tickets to a Western men's sports game	
	4. A free car maintenance check at a local garage	
Neutral	1. $25 gift card to the Western bookstore	1 = Not at all, 7 = Very much
	2. A free haircut at Supercuts	
	3. 2 free meals at Jimmy Johns	
	4. A free Western water bottle	

Appendix E

Study 2 Screening Survey (Gender Identity)

Gender Identity

1. What is your gender identity?
   a. Woman
   b. Man
   c. Nonbinary or Genderqueer
   d. Other/not listed here [fill in text box]

Appendix F

Study 2 Male Knowledge Test (Rudman & Fairchild, 2004)

1. Anfernee Hardaway's nickname is (Penny vs. Doc).

2. A dime is what kind of play in football? (defensive vs. offensive)

3. The name of the Carolina NHL team is? (Thrashers vs. Hurricanes)

4. What team did Bob Gibson pitch for as a Cy Young winner in 1970? (Cardinals vs. Yankees)

5. In 1982, who won the Super Bowl's MVP award? (Joe Namath vs. Joe Montana)

6–8. The next trials will show pictures of cars or motorcycles that you must identify. (Lamborghini vs. Ferrari) (Porsche vs. Mazda) (Honda vs. Suzuki)

9. A motorcycle engine turning at 8000 rpms generates an exhaust sound at (4000 rpms vs. 8000 rpms).

10. To help an engine produce more power you should (inject the fuel vs. reduce displacement).

11. In nature, the best analogy for a spark plug is (solar fire vs. lightning).

12. Karate originated in martial arts developed in (Japan vs. China).

13. Soldiers in WWII often used what type of guns? (Gatling vs. Tommy)

14. The groove inside the barrel of a revolver is (spiraled vs. smooth).

15. What is the compressed force behind BB guns? (gas vs. air)

16. The first people to use primitive flamethrowers in battle were (Greeks vs. Turks).

17. Identify the machine gun depicted on the next screen. (M240G vs. M16A2)

18. The material used between bathroom tiles is called (spackling vs. grout).

19. If you need to replace the tank ball in a toilet, ask for a (flapper vs. ball cock).

20. The paste used for soldering joints is called (gel vs. flux).

21. When choosing insulation, the R-value should be (high vs. low).

22. Hugh Hefner first published Playboy magazine in (1963 vs. 1953).

23. Arnold Schwarzenegger killed more people in which film? (True Lies vs. Total Recall)

24. After shooting a deer, bear, elk, or turkey, you must attach a (kill tag vs. ID tag).

25. When hunting, the legal amount of Hunter's Orange on your clothes is (25% vs. 50%).

26. By Olympic rules, boxing gloves for all weight classes weigh (12 ounces vs. 10 ounces).

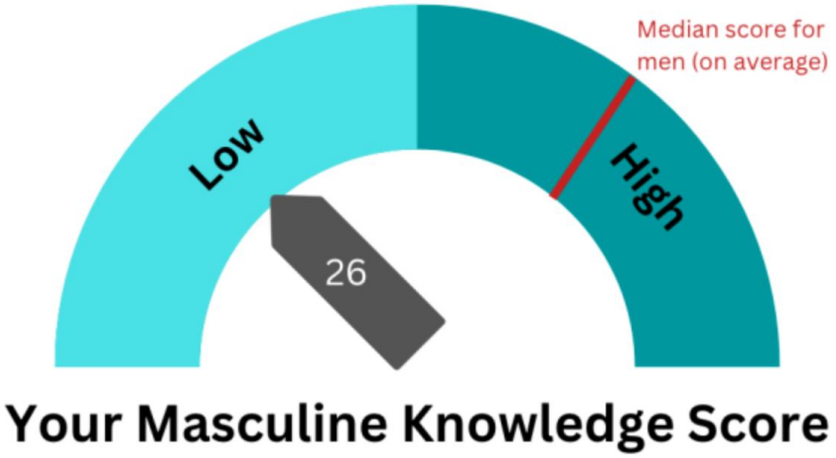
27. When punching someone, you should aim your fist (a foot beyond optimal target vs. directly at target).

28. When punching someone, the majority of the force comes from (the speed of your fist vs. your upper arm and shoulder).
29. What's the best way to deflect a punch? (use the forearm to block it vs. use hand to catch it).
30. When ramming a car to disable it, you should aim for the (rear passenger's tire vs. front driver's tire).

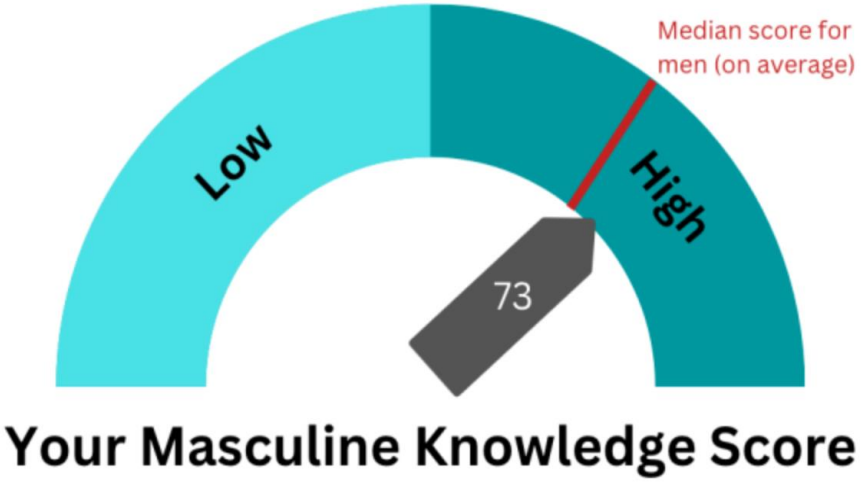
Masculine Knowledge Thermometer

Note: The thermometer was presented alongside written test score feedback in the survey.

Threat



Control:



Appendix G

Gendered Pro-Environmental Behaviors (adapted from Swim et al., 2020)

Instructions: How likely is it you would engage in the following behaviors, now or at some point in the future?

Gendered Subtype	Items	Response Options
Feminine	1. Use reusable bags instead of plastic bags for grocery shopping 2. Hang up clothes on a drying line instead of using a dryer 3. Paint the rooms in your house white to reflect light and reduce the need for electric lighting 4. Buy clothes from sustainable brands 5. Recycle food and household items	1 = Not at all likely, 7 = Very likely
Masculine	1. Caulk windows and doors to increase insulation and energy efficiency 2. Download electronic video games instead of purchasing the physical disk versions to reduce waste 3. Donate to a sportsmen's group which protects waterfowl habitats 4. Adhere to a car maintenance plan to save gas 5. Keep car tires at the right tire pressure to reduce gas waste	1 = Not at all likely, 7 = Very likely
Neutral	1. Buying energy efficient CFL and LED bulbs. 2. Unplugging chargers when not in use as they draw electrical currents when a device's battery is full. 3. Opening windows instead of using air conditioning.	1 = Not at all likely, 7 = Very likely

4. Using reusable safety razors instead of disposable razors.

5. Paying bills online instead of on paper.

Appendix H

Demographics and Covariates

Demographic	Item
Age	1. How old are you? ___
Race	2. What is your race? (Select all that apply) a. Black b. White c. Native American d. Asian e. Latinx f. Multiracial g. Not listed here [Fill in]
Ethnicity	3. Are you of Hispanic/x, Latino/a/x, or Spanish Origin? a. Yes b. No c. Prefer not to say
Sexual Orientation	4. Do you consider yourself to be: a. Straight or Heterosexual b. Lesbian c. Gay d. Bisexual e. Pansexual f. Asexual g. Prefer not to say h. Other [Fill in]
Political Orientation	5. How would you describe your political attitudes? [0 = Extremely liberal to 10 = Extremely conservative]
Education *Only for Study 2*	7. What is the highest level of education you completed? a. Some high school b. High school or GED c. Associates degree d. Bachelor's degree f. Master's degree g. Ph.D. or higher h. Trade school

Income
Only for Study 2

What is your annual household income?
a. Less than $25,000
b. $25,000 - $50,000
c. $50,000 - $100,000
d. $100,000 - $200,000 or higher
e. Prefer not to say

Employment
Only for Study 2

What is your current employment status?
a. Employed full-time
b. Employed part-time
c. Unemployed
d. Retired
e. Prefer not to say

Class standing
Only for Study 1

What year of school are you in?
a. Freshman
b. Sophomore
c. Junior
d. Senior
e. Other [Fill in]
