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Cultural Variability in the Link Between Environmental Concern and Support for Environmental Action

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Abstract

Research on sustainability behaviors has been based on the assumption that increasing personal concerns about the environment will increase proenvironmental action. We tested whether this assumption is more applicable to individualistic cultures than to collectivistic cultures. In Study 1, we compared 47 countries (N = 57,268) and found that they varied considerably in the degree to which environmental concern predicted support for proenvironmental action. National-level individualism explained the between-nation variability above and beyond the effects of other cultural values and independently of person-level individualism. In Study 2, we compared individualistic and collectivistic nations (United States vs. Japan; N = 251) and found culture-specific predictors of proenvironmental behavior. Environmental concern predicted environmentally friendly consumer choice among European Americans but not Japanese. For Japanese participants, perceived norms about environmental behavior predicted proenvironmental decision making. Facilitating sustainability across nations requires an understanding of how culture determines which psychological factors drive human action.

Keywords

culture, norms, individualism, sustainability, proenvironmental action, open materials

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> Climate change does not respect border, it does not respect who you are—rich and poor, small and big.
>
> Therefore this is what we call global challenges which require global solidarity. (Ban, 2011)

Threats to the environment have become one of the most important issues facing the world. Climate change, for instance, is driving increased risk for catastrophic natural disasters, such as the heat wave that caused the deaths of 70,000 people in European countries in 2003 and the more recent Typhoon Haiyan, which killed more than 6,300 people in the Philippines in 2013 (Emanuel, 2013; Stott, Stone, & Allen, 2004).

The urgency of environmental issues has spurred a call for scientific research on the psychological underpinning of support for proenvironmental action. A large volume of research has answered this call in recent years, generating theories and empirical evidence regarding psychological factors related to proenvironmental engagement (e.g., Feinberg & Willer, 2013; Gifford, 2014; Kashima, Paladino, & Margetts, 2014; Stern, 2000; Zaval, Markowitz, & Weber, 2015). Yet the databases are heavily biased toward Western populations, which raises questions about the generalizability of the findings (see Table S1-A in the Supplemental Material available online for summary statistics on the inclusion of non-Western samples in recent environmental-psychology studies in two representative journals; see also Milfont & Page, 2013). Much research demonstrates cultural divergence in how human actions are motivated

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(e.g., Henrich, Heine, & Norenzayan, 2010), and thus, this bias may be a critical barrier for addressing issues related to the global environmental crisis.

One psychological factor that has received great attention in the literature is *environmental concern*, the extent to which an individual acknowledges and is concerned about environmental problems (Dunlap, Van Liere, Mertig, & Jones, 2000; Fransson & Gärling, 1999). (See Table S1-B in the Supplemental Material for summary statistics on the focuses of recent studies in two representative journals.) Considerable efforts have been directed toward understanding the potential role of environmental concern as a key factor in increasing sustainability behaviors and proenvironmental engagement. Large surveys (e.g., the World Values Survey), public polls (e.g., Gallup polls), and environmental interventions have been used in attempts to measure, track, and ultimately change the environmental concern of individuals. The assumption behind this work is that once individuals have stronger concerns about sustainability, they will engage in more proenvironmental actions. Although previous studies support this assumption (e.g., Markowitz, Goldberg, Ashton, & Lee, 2012; O'Connor, Bord, & Fisher, 1999), little research has examined whether it is valid for non-Western populations.

Cultural values influence psychological processes, including processes underlying why and how people engage in social behaviors (Markus & Kitayama, 1991; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). The cultural value of particular interest here is individualism, the degree to which a culture places priority on personal goals over the goals of collectives (Triandis et al., 1988). It has been proposed that a stronger cultural value of individualism increases the relative importance of internal attributes, such as personally held attitudes and preferences, in driving individuals' actions (Heine & Lehman, 1997; Kashima, Siegal, Tanaka, & Kashima, 1992; Savani, Markus, & Conner, 2008; Savani, Markus, Naidu, Kumar, & Berlia, 2010). In individualistic cultures, there is a greater value on self-expression of internal attributes (Kim & Sherman, 2007) than there is in collectivistic cultures, where there is a greater value on fitting in (Kim & Markus, 1999). Thus, individuals' actions should follow more strongly from their beliefs and attitudes in individualistic cultures.

However, studies have not yet investigated whether culturally shared individualism actually explains the observed cultural differences in the link between attitudes and behavior. First, the studies conducted thus far have compared two cultures to document different behavioral patterns. Although this approach allows for in-depth understanding of psychological processes, it also has a drawback in that the cultures compared differ not only in individualism, but also in other cultural values, such as power distance or uncertainty avoidance (Hofstede, Hofstede, & Minkov, 2010). Consequently, the specific role of individualism has not been tested. Second, although it is recognized that one of the central questions for cultural psychology is how different levels of social influence (i.e., through participation in a cultural context vs. personally held values) shape psychological tendencies (Oyserman, Coon, & Kemmelmeier, 2002), little research has directly and simultaneously examined both culture- and individual-level influences on how the link between attitudes and behavior is formed.

Thus, the first goal of the research reported here was to directly test the role of individualism as the key moderating factor that explains national variation in the extent to which personal concerns about sustainability predict support for proenvironmental action. The second goal was to identify the independent contributions of culture-level individualism and person-level individualistic-collectivistic orientation (i.e., idiocentrism-allocentrism) in influencing the relation between internal attributes and action. Using a multilevel approach with a large international database in Study 1, we aimed to understand the role of cultural individualistic orientation, above other cultural value orientations and above personal individualistic orientation, in influencing this link. The third goal was to test how an alternative psychological factor that drives behaviors, social norms (as identified by the theory of planned behavior; Ajzen, 1991), predicts individuals' behaviors in cultures that differ in their national-level individualism. We addressed this question in Study 2 using focused cultural comparisons (i.e., contrasting Japan and the United States). To pursue our three goals, we focused on the critical domain of proenvironmental actions. We hypothesized that individuals' environmental concern would be a stronger predictor of their support for proenvironmental action (here, support for proenvironmental policies and environmentally friendly personal behavior) in more individualistic nations than in less individualistic nations and that proenvironmental action would be motivated to a greater extent by a more social factor—perception of social norms—in a more collectivistic country than in a more individualistic country (Cialdini, Wosinska, Barrett, Butner, & Gornik-Durose, 1999; Savani, Morris, & Naidu, 2012).

Study 1: National Variation in the Association Between Environmental Concern and Proenvironmental Behavioral Intentions

Method

The data for this study were taken from Wave 5 (2005–2008) of the World Values Survey (World Values Survey Association, 2014; 48 nations, N = 67,268), the most

recent data set that included the variables of interest.[1] Environmental concern was measured by respondents' ratings of the seriousness of environmental issues, such as (a) global warming (the greenhouse effect), (b) loss of plant or animal species (loss of biodiversity), and (c) pollution of rivers, lakes, and oceans (scale from 1, *very serious*, to 4, *not serious at all*). The scores were reverse-coded and averaged to create a composite measure of environmental concern (M = 3.48, SD = 0.63, α = .81).

Support for environmental action was operationalized as respondents' willingness to give part of their income to prevent environmental pollution (i.e., *environmental-behavior intentions*; Inglehart, 1995). It was measured by the following two items: "I would give part of my income if I were certain that the money would be used to prevent environmental pollution" and "I would agree to an increase in taxes if the extra money were used to prevent environmental pollution" (scale from 1, *strongly agree*, to 4, *strongly disagree*; reverse-coded so that higher numbers indicate stronger environmental-behavior intentions). Responses to these items were strongly correlated, $r(62{,}584) = .65$, $p < .001$, and thus were averaged to form a composite (M = 2.65, SD = 0.80).

For national-level cultural values, Hofstede's index was used (Hofstede et al., 2010). This index consists of national ratings of the following cultural values: individualism (the extent to which the society places priority on personal goals over the goals of collectives), power distance (the extent to which the society accepts unequally distributed power), masculinity (the extent to which the society emphasizes achievement, assertiveness, and material successes, particularly for men), uncertainty avoidance (the extent to which members of the society feel uncomfortable with uncertainty and ambiguity), long-term orientation (the extent to which the society focuses on future-oriented values), and indulgence (the extent to which the society allows gratification of natural human needs). Countries with higher ratings on a cultural value emphasize that value more strongly.

Person-level individualistic and collectivistic tendencies, termed *idiocentrism* and *allocentrism*, respectively (Triandis et al., 1988), were measured using items available in the World Values Survey (Li & Hamamura, 2010). Idiocentrism was measured by the following two items: "I seek to be myself rather than to follow others" and "I decide my goals in life by myself" (scale from 1, *strongly agree*, to 4, *strongly disagree*), $r(63{,}733) = .38$, $p < .001$. Allocentrism was measured by the following two items: "One of my main goals in life has been to make my parents proud" and "I make a lot of effort to live up to what my friends expect" (scale from 1, *strongly agree*, to 4, *strongly disagree*), $r(63{,}131) = .32$, $p < .001$. The scores were reverse-coded before being averaged into separate composites for idiocentrism and allocentrism; higher scores indicate stronger endorsement of the indicated value (M = 3.34, SD = 0.55, for idiocentrism; M = 2.88, SD = 0.69, for allocentrism).

Because the World Values Survey data were hierarchical, with individuals nested within countries, we used hierarchical-linear-modeling techniques (detailed descriptions of the models are available in the Supplemental Material) to examine the variation in the association between environmental concern and environmental-behavior intentions and whether individualism as an underlying cultural orientation moderates the strength of this relationship.

Results

First, we examined the zero-order correlations between the key variables of the model at the national level. That is, we considered how national-level individualism was associated with national averages of environmental concern and environmental-behavior intentions. Individualism did not correlate significantly with average environmental concern, $r(38) = .13$, $p = .440$, but there was a significant negative correlation between individualism and average environmental-behavior intentions, $r(39) = -.38$, $p = .014$. Respondents in more individualistic countries had lower willingness to make financial sacrifices for the environment.

We then calculated within-country correlations between individuals' environmental concern and environmental-behavior intentions (Table S2 in the Supplemental Material lists the means and standard deviations for these variables and their correlation for each country). The countries differed considerably in how much environmental concern was associated with environmental-behavior intentions. The correlations ranged from .05 to .40, and the overall mean of the within-country correlations (using Fisher's r-to-z transformation) was .16. The United States, a country with exceptionally high individualism (Henrich et al., 2010), was at the top of the distribution of the 47 countries, with the strongest correlation between the two key variables, $r(1{,}212) = .40$, $p < .001$. This finding is consistent with the high value that American culture places on expressing internal values and ideas (Kim & Sherman, 2007). The observed cross-national variation was not due to between-nation differences in the range of either environmental concern or support for environmental action. The magnitude of the correlation between environmental concern and environmental-behavior intentions was not correlated with the standard deviation of either environmental concern, $r(45) = -.05$, $p > .250$, or support for environmental action, $r(45) = .04$, $p > .250$.

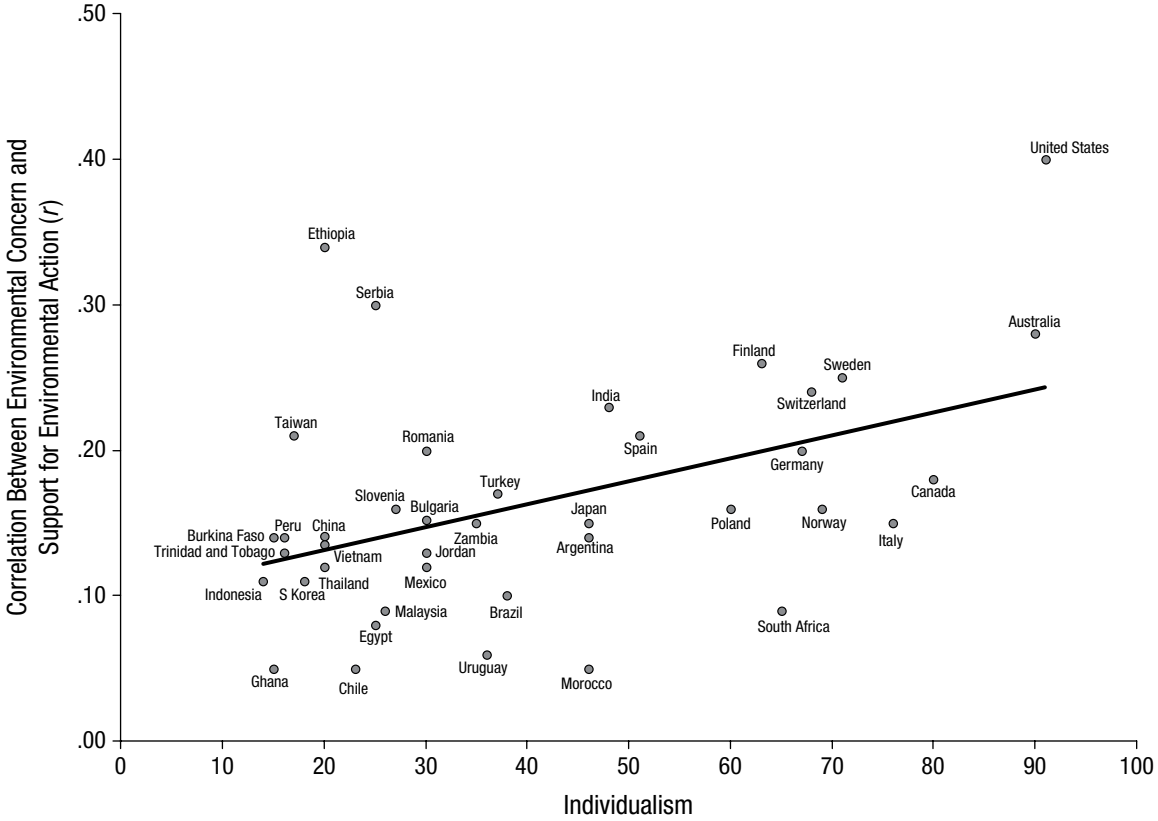

Fig. 1. Results from Study 1: scatterplot (with best-fitting regression line) showing the association between Hofstede's individualism index and the within-country correlation between environmental concern and willingness to pay to protect the environment.

To formally test whether this variation in the link between environmental concern and environmental-behavior intentions was significant, we used a random-coefficients multilevel model. There was significant variation in the association between environmental concern and support for environmental action across nations: The random effect for the slope between environmental concern and environmental-behavior intentions was significant, controlling for person-level income, education, gender, and age, $\chi^2(44, N = 45) = 488.94$, $p < .001$, 95% plausible range of values for the slope = [–0.011, 0.437] (see Table S3 in the Supplemental Material).

To address the first goal of our research (i.e., to directly test whether national-level individualism explains the between-nations variability in the relation between environmental concern and support for environmental action), we applied an intercepts and slopes-as-outcomes multilevel model and used the Hofstede individualism score as the predictor (Hofstede et al., 2010). We controlled for two possible confounds that are associated with proenvironmental tendencies: national-level Environmental Performance Index (EPI) in 2006 (Esty et al., 2016;[2] i.e., national performance in protecting people's health from being harmed by the environment and in protecting ecosystems) and post-materialist-value score (Inglehart, 1995; i.e., how much a nation values self-expression and quality of life rather than economic and physical security). We also controlled for basic national-level and person-level demographic factors: national-level gross domestic product per capita and person-level income, education, gender, and age. The main findings remained consistent whether or not we included these covariates. As expected, as national-level individualism increased, the association between environmental concern and environmental-behavior intentions became stronger, $b = 0.051$, $SE = 0.019$, 95% confidence interval (CI) = [0.014, 0.088], $t(30) = 2.70$, $p = .012$ (see Fig. 1 and Table S4 in the Supplemental Material).

We also examined the unique contribution of national-level individualism, above and beyond other national-level value orientations, in explaining the cross-national variation in the link between environmental concern and environmental-behavior intentions. The national value of individualism remained the only significant predictor of the relation between environmental concern and behavioral intentions even after power distance, masculinity, uncertainty avoidance, long-term orientation, and

indulgence were included in the model, $b = 0.056$, $SE = 0.024$, 95% CI = [0.009, 0.103], $t(24) = 2.34$, $p = .028$ (see Table S5 in the Supplemental Material).

Next, we simultaneously examined the influence of idiocentrism, allocentrism, and national-level individualism on the association between environmental concern and environmental-behavior intentions, in order to test the independent effects of cultural value orientation at different levels. To do this, we added idiocentrism, allocentrism, and their interactions with environmental concern as person-level predictors in the intercepts and slopes-as-outcomes multilevel model (see Table S6 in the Supplemental Material). Results showed that national-level individualism still significantly predicted the association between environmental concern and environmental-behavior intentions, $b = 0.023$, $SE = 0.011$, 95% CI = [0.001, 0.045], $t(30) = 2.12$, $p = .042$. In addition, idiocentrism was a marginally significant moderator of this association, $b = 0.012$, $SE = 0.007$, 95% CI = [−0.002, 0.026], $t(34) = 1.83$, $p = .075$. The extent to which environmental concern predicted environmental-behavior intentions was somewhat stronger for respondents with higher individualistic values. Allocentrism did not moderate the association between environmental concern and behavioral intentions, $b = -0.006$, $SE = 0.007$, 95% CI = [−0.020, 0.008], $t(34) = -0.86$, $p = .398$. However, it was positively associated with environmental-behavior intentions, $b = 0.094$, $SE = 0.012$, 95% CI = [0.071, 0.118], $t(34) = 8.00$, $p < .001$, a result consistent with the research connecting more collectivistic value orientations with stronger prosocial tendencies (Moorman & Blakely, 1995).

Discussion

Study 1 supported our hypothesis. Nations differed considerably in the degree to which environmental concern predicted support for environmental action, and personally held environmental concern was a better predictor of support for proenvironmental action in more individualistic countries. National-level individualism was a significant predictor of the strength of the association between personal environmental concern and environmental-behavior intentions, above and beyond the effects of other national-level cultural orientations and plausible national-level variables, such as gross domestic product. The results also suggest that person- and national-level individualism exert independent influences on the link between environmental concern and proenvironmental action.

The findings of Study 1 raise the question of whether there are culture-specific predictors of proenvironmental behaviors. If personal concerns about environmental issues are a weak predictor of support for proenvironmental action in some cultures, other factors may predict such behavior more strongly in those contexts. We sought to answer this question in Study 2 by sampling two cultures that are known to differ in individualism (i.e., United States vs. Japan) and therefore potentially present a clear contrast in cultural factors driving proenvironmental action (Markus & Kitayama, 1991). Study 2 also addressed a limitation of Study 1: Environmental concern was measured using the limited number of items available in an existing public data set. A more reliable, validated measure of environmental concern (i.e., revised New Ecological Paradigm scale; Dunlap et al., 2000) was used in Study 2.

Study 2: Culture-Specific Predictors of Proenvironmental Action

In Study 2, we investigated differences in predictors of proenvironmental action between European American and Japanese individuals in the domain of consumer decision making (Stern, 2000). Along with personal attitudes, perceived social norms have been considered a key antecedent of behavioral intentions (Ajzen, 1991). Given the importance of conformity to social norms in the collectivistic Japanese society (Markus & Kitayama, 1991), we predicted that perceived social norms about proenvironmental behavior would predict environmental decision making more strongly among Japanese than among European Americans. We also predicted that environmental concern would predict proenvironmental decision making more strongly among European Americans than among Japanese, on the basis of our results in Study 1.

Method

Participants were 149 European American undergraduates (51.7% female; mean age = 19.01 years, $SD = 2.39$) and 102 Japanese undergraduates (34.3% female; mean age = 19.24 years, $SD = 1.03$). For the sake of a clear contrast between an individualistic and a collectivistic cultural group, we recruited only European Americans in the United States. Given the design of the study and the predicted interaction between a continuous variable and a categorical variable, we aimed to have approximately 50 people above and 50 people below the median of the continuous predictors for each cultural group (i.e., 100 people in each cultural group). More than the targeted number of European American participants signed up for the study, and thus the final sample of that group was above the original target number.

Participants were given study materials in their native language, in the following order. First, they made a series of 10 binary choices, 6 of which involved proenvironmental products, while imagining shopping for household items at a market. For the 6 proenvironmental-product choices (choices for shampoo, a cup, coffee, a shopping

bag, a water bottle, and a notebook), one key feature distinguished which product was environmentally friendly (e.g., whether the ingredients for the shampoo were biodegradable). The product descriptions also included two other features unrelated to the environment, to make the choices more realistic as well as to reduce demand characteristics. These features varied by product (e.g., fragrance for shampoo and origin for coffee) and therefore are not confounds. An additional feature was price, which was set slightly higher for the proenvironmental products than for the conventional products (range of the price difference: $0.40–$1.70) to reflect the market reality. The proportion of proenvironmental products chosen was the dependent variable (see the Supplemental Material for a detailed description of the study materials and analytic justification for the choice sets).

Environmental concern was measured by 10 of the 15 items of the revised New Ecological Paradigm scale (e.g., "if things continue on their present course, we will soon experience a major ecological catastrophe," "the so-called ecological crisis facing humankind has been greatly exaggerated [reverse-scored]"; Dunlap et al., 2000). (The scale was shortened to reduce the length of the study.) The rating scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*), and higher scores indicate stronger environmental concern (M = 3.78, SD = 0.60; α = .74 for Japanese, α = .81 for European Americans).

Our measure of social norms was a single item assessing participants' perceptions of the proportion of people engaging in proenvironmental actions in their society (i.e., a descriptive social norm): "How many people do you think engage in environmentally friendly behaviors, such as buying organic, recycled, or bio-degradable products or carpooling or saving energy? Please indicate the percentage of people who engage in environmentally-friendly behaviors in your society" (M = 36%, SD = 16%).

Results

First, we examined the zero-order correlation between the main predictor variables, separately for each cultural group. Environmental concern and perceived social norms were not significantly correlated for either European Americans, $r(147) = .03$, $p > .250$, or Japanese participants, $r(98) = -.04$, $p > .250$, and the correlations for the two groups were not significantly different, $z = 0.52$, $p = .603$. Thus, at least in our samples, environmental concern was not necessarily more in line with perceived social norms among the collectivistic Japanese participants than among the individualistic Americans (see Riemer, Shavitt, Koo, & Markus, 2014). Table S8 in the Supplemental Material presents descriptive statistics for the key variables in each culture.

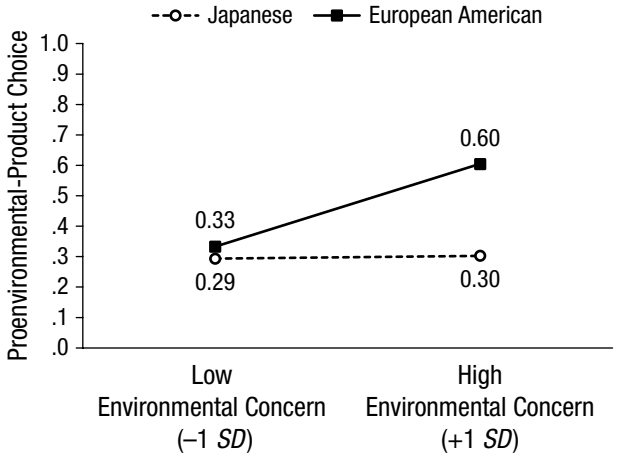

Fig. 2. Results from Study 2: proportion of proenvironmental products chosen as a function of cultural group (Japanese, European American) and level of environmental concern (1 *SD* below or above the mean).

There was a significant difference between Japanese and European Americans in the degree to which environmental concern predicted proenvironmental product choice, as indicated by a significant interaction between cultural group and environmental concern in predicting the likelihood of choosing proenvironmental products, $b = 0.22$, $SE = 0.06$, 95% CI = [0.103, 0.337], $t(242) = 3.70$, $p < .001$. Environmental concern was significantly associated with choice of proenvironmental products only among European Americans, $b = 0.23$, $SE = 0.03$, 95% CI = [0.167, 0.289], $t(242) = 7.39$, $p < .001$. There was no significant relationship between environmental concern and choice of proenvironmental products among Japanese, $b = 0.01$, $SE = 0.05$, 95% CI = [−0.091, 0.108], $t(242) = .17$, $p > .250$ (see Fig. 2).

Cultural group and perceived social norms also interacted to predict the likelihood of choosing proenvironmental products, $b = -0.54$, $SE = 0.21$, 95% CI = [−0.951, −0.136], $t(242) = -2.63$, $p = .009$. For European Americans, perceived social norms about environmental behavior did not significantly predict choice of proenvironmental products, $b = -0.06$, $SE = 0.12$, 95% CI = [−0.292, 0.178], $t(242) = -0.48$, $p > .250$, whereas for Japanese, perceived social norms significantly predicted choice of proenvironmental products, $b = 0.49$, $SE = 0.17$, 95% CI = [0.152, 0.820], $t(242) = 2.87$, $p = .005$ (see Fig. 3). Environmental concern did not interact with perceived social norms, and there was no significant three-way interaction of cultural group, environmental concern, and social norms (see Table S9 in the Supplemental Material). Controlling for gender as a potential confound (Zelezny, Chua, & Aldrich, 2000) did not change the main results (see Table S10 in the Supplemental Material).

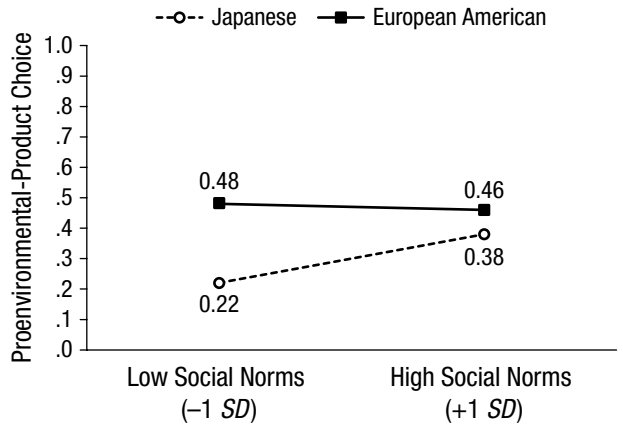

Fig. 3. Results from Study 2: proportion of proenvironmental products chosen as a function of cultural group (Japanese, European American) and perceived social norms (1 *SD* below or above the mean).

Discussion

Study 2 provides empirical evidence of culture-specific predictors of proenvironmental action. Although we expected the relationship between perceived social norms and choice of environmentally friendly products to be stronger for Japanese than for European Americans, the finding that the relationship was nonsignificant among European Americans was unexpected given previous work linking social norms and proenvironmental behavior among Americans (e.g., Nolan, Schultz, Cialdini, Goldstein, & Griskevicius, 2008). This discrepancy may stem from the characteristics of the outcome variables. Unlike the behaviors in previous studies, such as use of household electricity (e.g., Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007), choice of personal products is a behavior that is directly based on simple judgment of the individual, with little overt social pressure. Although we looked at one specific personal behavior, purchasing decisions, in Study 2, it is a meaningful window to understand various environmental actions that have bearing on sustainability, as many proenvironmental behaviors involve choices and decision making (e.g., whether to recycle or not, to take public transportation or a private car, to support or oppose a carbon tax).

General Discussion

The current research demonstrates that cultures differ considerably in what drives environmentally friendly action. Extending the previous work on cultural variation in the relationship between personal attitudes and behavior (Heine & Lehman, 1997; Savani et al., 2008), Study 1 directly supports the hypothesis that national-level individualism, independently of other culture-level value orientations and personal individualistic tendencies, influences the extent to which personal concern for the environment predicts relevant proenvironmental action. Study 2, in which we conducted a focused comparison of cultural groups, provides converging evidence that concerns about sustainability are a better predictor of support for proenvironmental action in more individualistic cultures and shows that perceived prevalence of environmentally friendly behavior is an alternative antecedent of proenvironmental action in more collectivistic cultures, such as the Japanese culture. The present studies underscore the benefits of using multimethod approaches in shedding light on the way in which different levels of cultural factors affect how and why human action is motivated in different cultural contexts.

Attitudes and perceived social norms are two factors considered to be key antecedents of behavior and behavioral intentions (Ajzen, 1991). Our findings suggest that the relative strength of the two factors as determinants of behavior varies across cultures. Future work investigating other personal, situational, and societal factors that moderate the link between attitudes and behavior would advance current theory. It is also important to note that our key outcome, support for environmental action, is not action per se and that support and action sometimes function differently (Gifford, 2014). Future research should extend the present work by investigating actual decision making and behavioral outcomes (e.g., Savani et al., 2008; Schultz et al., 2007).

The present findings have significant practical implications. Consistent with a few existing studies showing cultural differences in antecedents of proenvironmental engagement (Chan & Lau, 2002; Onwezen, Bartels, & Antonides, 2014), our results imply that informational strategies—educating people about the urgency of environmental problems and the environmental impacts of their choices (Bord, O'Connor, & Fisher, 2000)—would be more successful in changing sustainability-related behavior in individualistic cultures than in collectivistic cultures. In more collectivistic societies, highlighting other individuals' proenvironmental actions, reinforcing the social desirability of proenvironmental behavior, and publicizing how commonplace it is may be more effective than targeting personal attitudes. It is also an intriguing possibility that environmental concern itself is rooted in different reasons across cultures. Recent research suggests that attitudes are more strongly influenced by social norms in collectivistic cultures than in individualistic cultures (Riemer et al., 2014). Although there was no correlation between perceived social norms and environmental concern in either cultural group in Study 2, it is possible

that environmental concern is influenced by different factors in individualistic and collectivistic cultures. Research on cultural differences in the origin of environmental concerns will be important for advancing understanding of the psychology of sustainability. Moreover, social norms may be just one example of many culture-specific drivers of proenvironmental action. For researchers, activists, and policymakers working to increase proenvironmental behavior, it is important to identify its culture-specific antecedents.

Conclusion

The many environmental crises affecting the earth and its inhabitants constitute one of humanity's greatest challenges. If human behavior does not change to meet these challenges, humans will face increasingly disastrous consequences (Intergovernmental Panel on Climate Change, 2013). To design effective sustainability strategies and proenvironmental campaigns, it is important to identify and understand cultural variation in the factors driving proenvironmental action. The present research brings a cultural perspective to the question of how the psychological bases of behavior might vary across disparate countries. Understanding culture is a crucial step in grasping how to solve global environmental issues.

Action Editor

Wendy Berry Mendes served as action editor for this article.

Author Contributions

K. Eom, H. S. Kim, and D. K. Sherman developed the study concept. K. Eom, H. S. Kim, and D. K. Sherman contributed to the study design. Data were collected and analyzed by all the authors. K. Eom drafted the manuscript, and H. S. Kim, D. K. Sherman, and K. Ishii provided critical revisions. All the authors approved the final version of the manuscript for submission.

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Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Supplemental Material

Additional supporting information can be found at http://pss.sagepub.com/content/by/supplemental-data

Open Practices

All materials have been made publicly available via the Open Science Framework and can be accessed at https://osf.io/fb3kq/. The complete Open Practices Disclosure for this article can be found at http://pss.sagepub.com/content/by/supplemental-data. This article has received the badge for Open Materials. More information about the Open Practices badges can be found at https://osf.io/tvyxz/wiki/1.%20View%20the%20Badges/ and http://pss.sagepub.com/content/25/1/3.full.

Notes

1. Data from 47 of the countries (N = 57,268) were analyzed because the score for environmental concern was not available for Guatemala. The number of countries included in each analysis depended on the country-level data available.
2. Specifically, from the archive for pilot 2006 EPI materials, we downloaded the file titled "2006 Pilot EPI Data (All Countries Considered)."

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