Environmental Attitudes and Behaviors: A Cross-Cultural Analysis in France and the United States

Alix G. Kashdan
College of William and Mary

Follow this and additional works at: https://scholarworks.wm.edu/honorstheses

Recommended Citation
https://scholarworks.wm.edu/honorstheses/646

This Honors Thesis is brought to you for free and open access by the Theses, Dissertations, & Master Projects at W&M ScholarWorks. It has been accepted for inclusion in Undergraduate Honors Theses by an authorized administrator of W&M ScholarWorks. For more information, please contact scholarworks@wm.edu.
Environmental Attitudes and Behaviors: A Cross-Cultural Analysis in France and the United States

by

Alix Gillian Kashdan

Honors Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of Arts at the College of William & Mary

Accepted for ________________________________ (Honors)

Dr. Joanna Schug, Director

Dr. Christy Porter

Dr. Giulia Pacini

Williamsburg, VA
May 2, 2013
Abstract

Global climate change is one of the most pressing issues of the contemporary age, and a problem to which different countries have offered various responses. This study uses social, cultural, and behavioral frameworks to address the differences between French and American people’s environmental attitudes and behaviors. Two studies are presented here. The first is an analysis of data from an environmental survey conducted by the International Social Survey Programme (ISSP), used to establish the relationships between environmental attitudes and behaviors in the United States and in France. The second study is a questionnaire of our design distributed to French and American participants, which tests the influence of cultural norms on perceptions of environmental attitudes and behaviors. Our main hypotheses were (a) American attitudes and behaviors would correlate while those of the French would not; and (b) Americans would emphasize environmental attitudes while French participants would emphasize environmental behaviors. Our results showed that (a) environmental attitudes predict environmental behaviors in the United States but not in France; (b) Americans emphasized norms of environmental attitudes more than norms of environmental behaviors; (c) French people emphasized norms of environmental attitudes and behaviors to the same degree. We concluded that the desire to adhere to perceived cultural norms is a strong predictor of environmental behavior. Since French participants show an already high level of environmental behavior, our recommendations for future action focus on the United States. We suggest that future campaigns designed to promote environmentally conscious behavior focus on forming perceptions of society as high in both pro-environmental attitudes and behavior.
Table of Contents

List of Tables 4
List of Figures 5
Acknowledgements 6
Introduction 7
  Social Motivations of Environmental Behavior 9
  Environmental Knowledge Versus Environmental Behavior 10
  Cultural Mechanisms Influencing Behavior 12
  Differences between France and the United States 15
  Research Overview and Hypotheses 16
Study 1 17
  Introduction 17
  Method 18
   Participants 18
   Procedure 19
  Results 20
  Discussion 21
Study 2 24
  Introduction 24
  Method 27
   Participants 27
   Materials and Procedure 27
  Results 30
  Discussion 32
General Discussion 36
  Review of Studies and Results 36
  Interpretations and Implications 39
   Intersubjective Theory 39
   Internal and External Attributions 39
   Perceptions of Social Norms and Environmental Action 41
  Future Directions 42
   Public Policy Implications 42
   Future Research 44
References 45
Tables 51
Figures 54
Appendices 55
  Appendix A: ISSP 2010 Module on Environment 55
  Appendix B: Environmental Behaviors and Attitudes Questionnaire: English 67
  Appendix C: Environmental Behaviors and Attitudes Questionnaire: French 74
List of Tables

1. Behaviors Measure Survey Items, Study 1 (From the ISSP 2010 Module on Environment) 51
2. Multiple Regression Analysis Results, Study 1 (Dependent Variable = Behaviors) 52
3. Means and Reliabilities, Study 2 53
List of Figures

1. Evaluations of environmental actions and attitudes in France and the United States, Study 2 54
Acknowledgements

I would first like to thank my advisor, Professor Joanna Schug, for her guidance and dedication to this project. I have learned so much from Professor Schug and am incredibly grateful for the opportunity to have worked with her. I would also like to thank my family and friends who have provided constant support and encouragement throughout this process.
Environmental Attitudes and Behaviors: A Cross-Cultural Analysis in
France and the United States

I have sometimes wondered what kind of hero a person can be in our time. … It seems almost impossible to take moral action these days except, for what it's worth, in small and private ways. Even recycling, however, no longer has the thrill it used to when it was a new imperative. (Hamilton, 2000)

Recycling is just one of many green behaviors that have become mainstream in the past decade. As our society has become increasingly aware of threats to the natural environment, perceptions of environmentally-friendly actions have changed from ‘hippie nonsense’ to ‘trendy and responsible.’ The effectiveness of environmental actions is not well understood, especially when considering the ability of individuals to make a difference. Many people now believe that individual efforts are not enough to combat climate change, but wide-scale environmental efforts are complicated by the difficulty of achieving coordinated global action. Politics and international relations have largely prevented global environmental initiatives from being effectively enforced. As the focus on environmental problems has begun to take group differences into account, researchers have begun exploring the differences in environmental consciousness that exist between countries and cultures.

Though I have been engaged with environmental issues for many years, I did not consider the cultural component of environmental behavior until recently. My interest in the different levels of environmental awareness around the world evolved during my semester studying abroad in Nantes, France. Europeans are popularly believed to use resources more efficiently than Americans, and while abroad I experienced firsthand the reality behind this widespread belief. The watershed moment for me happened one night early in the semester at my host parents’ apartment. My host mom came to my door and pointed out a power strip on the
floor. She politely asked me to make sure that I unplugged the strip whenever I was not using it, especially before going to sleep at night.

This was a simple request, but striking. Though I had previously heard that leaving not-in-use appliances plugged into an outlet does expend a small amount of energy, my experiences in the United States had led me to conclude that it was practically unheard of to unplug electrical devices; my parents, for instance, leave our toaster plugged in all the time. I began to notice other energy-saving techniques practiced by my host family. Though turning off lights is more common in the United States than unplugging appliances, my French parents were more zealous about saving energy, to the point where I found myself stumbling down their dark hallway rather than turning on a light and thus shocking my host parents with my wasteful electricity usage. I discussed these observations with other Americans in my program, and my friends revealed that such energy saving practices were common in their host families as well; stories abounded of requests for shorter showers and stricter recycling regimens. Perhaps the most remarkable difference between France and the United States is that my host parents were not tree-huggers; they did not hold extreme environmentalist views. It seemed that in France, practices like these were commonplace, commonsense, and largely independent of political affiliation. At the end of my stay, I left France with an incomplete understanding of the differences I had witnessed.

The above anecdote describes our initial interest in the topic of cultural differences in environmental behavior. Following is a review of research that has been conducted in this field, covering the topics of social motivations of environmental behavior, environmental knowledge versus environmental behavior, cultural mechanisms that influence behavior, and differences in environmental behavior between France and the United States.
Social Motivations of Environmental Behavior

Many researchers have explored the idea that environmental behavior, as well as pro-social behavior in general, is motivated by social concerns rather than personal values or attitudes. For instance, one study (Barclay, 2004) examined whether pro-social behavior could be explained by social concerns or, in other terms, the desire to look good in the eyes of others. In the study, participants played a group game in which each person had the opportunity to be selfish, but all would benefit if each person was altruistic. Some participants played the altruism game without knowing the nature of a second game to follow. Others played the game knowing that fellow participants could nominate one person as trustworthy, based on behavior in the first game, and that this trustworthy person could receive extra benefits in the second game. Results showed that individuals who knew their behavior would be evaluated by others were more altruistic in the first game, due to their desire to be seen as altruistic. This phenomenon is known as “competitive altruism,” where people practice pro-social behavior as part of competition for a positive reputation, a reputation which can later earn them benefits and favors from others.

This idea of altruistic actions toward a vague public good can be applied to the present research question by interpreting “public good” in terms of environmental conservation. Barclay’s work implies that socially motivated reputation benefits could be an effective incentive for engaging in environmentally-friendly behaviors, and thus individuals may be motivated to engage in environmentally-friendly behaviors not because of pro-environmental attitudes they hold, but simply because exhibiting environmentally conscious actions makes them look favorable to others.

The implications of competitive altruism for environmental behaviors are explored further by Sexton and Sexton (2011). They examined the prosocial benefits of high-cost
Environmental behaviors, and described such behavior as “conspicuous conservation.” They further discussed that these blatant displays of environmentalism denote high status in our society, a phenomenon they refer to as the “Prius effect” because the purchase of a Prius advertises the person’s pro-environmental attitudes. The Prius Effect is an environmentally-bent version of competitive altruism, whereby people attempt to display their selflessness in order to reap social rewards (Sexton & Sexton, 2011). These ideas are important for understanding the social motivations behind people’s environmental behavior, and highlight the impact of others’ opinions in environmental behavior specifically (Griskevicius, Tyber, & Van den Bergh, 2010).

Environmental Knowledge Versus Environmental Behavior

A significant amount of research has been conducted regarding the relationship between knowledge, intentions, and behavior in terms of the natural environment. Hungerford and Volk (1990) examined the effectiveness of environmental education for changing behaviors. For many years, the accepted viewpoint in the area of environmental education was that knowledge, attitudes, and behavior were linked, such that changing knowledge would change attitudes, which would then inspire a change in behavior. However, research has since demonstrated that the link between education, attitudes, and action is neither this simple nor this easily understood. The authors reviewed more complex models of environmental education and behavior, and presented an extensive list of variables that can be involved in changing environmental behavior. The “Entry-Level Variables” were basics needed to predict any sort of behavior change, and included “environmental sensitivity” and “knowledge of ecology.” The next category, “Ownership Variables,” contained items that caused the person to have a personal connection with environmentalism; these consisted of “in-depth knowledge” and “personal investment.” Finally, “Empowerment Variables” were important for making people believe their actions could
make a difference; this category contained items such as “knowledge of environmental action strategies,” “locus of control,” and “intention to act” (Hungerford & Volk, 1990). This analysis shows that simply having access to environmental information is not enough to inspire environmental action. People must also have a personal connection to the environment, and additionally must feel that they have the tools and ability to make a difference.

Kollmuss and Agyeman (2002) provided evidence to support the idea that, generally, increased knowledge and awareness does not affect people’s behavior. Through analyses of several models and studies, these authors identified several components that must be in place in order for a person to begin acting in a pro-environmental way. Simply knowing that recycling has positive effects is not enough to actually inspire people to recycle. Additionally, people must know specific action strategies to enact the behavior, believe that their actions can make a difference, and make a verbal commitment to do a behavior. People also need to focus on the community beyond themselves in order to act environmentally. Finally, because different cultures value different things, cultural norms impact peoples’ environmental behavior; for instance, some cultures value the preservation of natural resources far more highly than others (Kollmuss & Agyeman, 2002). This article highlights the highly complex nature of motivating behavior in general and environmental behavior specifically. While certain aspects of behavior are shared among humans, such as the tendency to fail to act upon information even when well-informed, environmental behaviors are especially sensitive to different cultural norms.

Whitmarsh (2008) also addressed the discrepancy between intentions and actions in regards to environmental behaviors. She examined environmental actions in the UK and the motivations behind different actions. The results revealed that people who engaged in environmentally-friendly behaviors were often motivated by non-environmental reasons, such as
trying to save money. Additionally, some environmental behaviors were influenced by other factors, with the most popular reasons including “to save money,” “for my health,” and “moral obligation.” Based on the varied and numerous justifications given, Whitmarsh concluded that changing behaviors required more than education and economic incentives (2008). Another study found that a sense of personal responsibility also impacted environmental behaviors. Researchers compared self-reported recycling behaviors, observed recycling behaviors, and attitudes toward recycling in college students. The study results showed that students were less likely to recycle when they did not believe that it was their responsibility to do so, despite overall positive attitudes toward recycling reported (Barker, Fong, Grossman, Quin, & Reid, 1994). These two studies taken together indicate that even when environmental attitudes, education, and economic incentives are high, people still fail to follow through on the behavior. These conclusions hint at the existence of other important factors – beyond attitudes, education, and economics – that regulate environmental actions.

**Cultural Mechanisms Influencing Behavior**

Much research focuses on variations in individual beliefs as the source of cultural distinctions in social judgment. One study by Zou and colleagues (2009) however, took a different approach by examining how culture influences social judgment via individuals’ impressions of the prevalent beliefs in their own society, rather than influencing the individuals’ own beliefs. Everyone views certain ideas as shared by their culture, and people act on these ideas that they assume are held by everyone. The authors in this study explored the variations in individuals’ perceptions of what others in their society accepted to be true, perceptions that revealed the participating societies’ cultural norms. Individualist and collectivist cultures were compared to determine if there would be a difference in behavior. Researchers found that people
in both individualist and collectivist cultures sought to do what they believed was the accepted behavior in their culture. That is, people in countries like the United States act in an individualist way because they think that is what is accepted and expected in their country, not because they are truly individualists. Similarly, people in countries like Japan act in a collectivist way, not because each person is inherently collectivist-minded, but because they perceive collectivist-actions to be the acceptable behavior. This finding has important implications for the role of *impressions* of cultural norms in determining individuals’ environmental behavior, regardless of personal inclinations.

One study in particular highlights the differences between individually held beliefs and behavioral manifestations of cultural norms. Yamagishi, Hashimoto, and Schug (2008) asked respondents to answer a survey and offered a choice of pens as a reward; most of the pens were identically and a few unique pens were offered as well. An earlier study using a similar paradigm found that Americans tended to choose the ‘unique’ pen, while Asians tended to choose the ‘majority’ pen (Kim & Markus, 1999). Kim and Markus interpreted these differences in terms of internalized cultural norms: Americans, being individualistic, prefer to be unique, while Asians, being collectivistic, prefer to be part of the majority.

Yamagishi, Hashimoto, and Schug (2008) challenged the Kim and Markus finding by proposing that these cultural differences in behavior could be explained as adaptations to common social situations in East Asian and North American society, rather than being manifestations of internalized cultural norms. They found that differences between the two groups of participants in the pen choice task were explained by different default interpretations of the situation, not by cultural differences in preferring to stand out or fit in. The Japanese participants interpreted unclear situations by considering others’ reactions to their pen choice,
while the American participants defaulted by interpreting that the situations did not require consideration of others reactions. In fact, when participants were the first of five to choose a pen, both the Americans and Japanese had the same low tendency to choose the unique pen; when participants were the last to choose, all participants had the same high tendency to choose the unique pen. The researchers concluded that different cultures create different motivations for certain behaviors based on the beliefs and behaviors that are perceived to be shared. (Yamagishi, Hashimoto, & Schug, 2008). The implications of this study for environmental concerns are clear: in a culture where environmental conscientiousness is perceived to be important, environmental actions will be higher regardless of individuals’ personal environmental sentiment.

This approach to culture, whereby cultural behavior is driven by perceptions of what is normative in one’s society rather than by internalized cultural norms, forms the basis for the “intersubjective” approach to culture (Chiu, Gelfand, Yamgishi, Shteynberg, & Wan, 2010). The intersubjective approach interprets people’s actions and decisions based on the perceived shared values of their culture. Chiu et al. make the distinction between personal beliefs and perceived shared cultural characteristics, and pointed out that individuals’ own beliefs, beliefs actually popular in the culture, and beliefs perceived to be popular in the culture could all be different. In fact, people can behave according to this “intersubjective reality” to a greater extent than they act according to their personal views. Applied to the psychology of environmental behavior, this conclusion indicates that the focus should shift away from trying to change people’s attitudes, since personally caring for the environment does not seem to affect behavior.

The articles above reveal that an individual’s beliefs matter far less for determining behavior than was originally believed. The determinants of behavior include perceptions of
cultural norms, not only expression of personal values. It may even be that the perceived, intersubjective societal norm is more influential in determining behavior than a personal belief is. These conclusions have important implications for the study of environmental behavior. Researchers must shift from studying cultural norms and individual preference to focusing on individuals’ perceptions of cultural norms. Once these perceptions are understood, strategies can be developed for altering perceptions of norms in such a way that would create positive perceptions of environmentalism and inspire more pro-environmental behavior.

Differences between France and the United States

The previous examples describe several mechanisms that underlie behavioral decisions in separate cultures. Many differences exist in the environmental attitudes and behaviors held by people in different countries; one such difference appears to be at play when comparing France and the United States. Returning to the study abroad example, there was something occurring in French culture that inspired more environmentally-friendly behavior than was practiced in the United States. My host parents partly addressed the issue by explaining that energy is highly taxed in France, so resources like electricity and water are used more sparingly in order to conserve money. One study supported this observation: in their study comparing recycling behavior in France and the United States, Arbuthnot and Lingg (1975) found that when considering environmental issues, French people tended to focus on personal finances, as opposed to their behaviors’ consequences on the environment.

Arbuthnot and Lingg also found that five environmental attitudes were correlated in the American sample and also predicted recycling in the American sample. Conversely, only some of the environmental attitudes were correlated among the French participants, with non-significant connections to their behaviors. Furthermore, the degree to which participants were
informed was important for determining American recycling, but unimportant for determining French recycling. Finally, when given a personality measure, French recycling only related to social responsibility, while American recycling was associated with low levels of superstition and conventionalism, and feelings of personal control. The researchers concluded that Americans’ choices to recycle were connected to a broader consideration for the environment, while French peoples’ recycling behavior was separate from their personal environmental values and personality characteristics. This finding suggested the compelling conclusion that there was a link between environmental attitudes and behavior in the American sample, but not in the French sample. Arbuthnot and Lingg’s results also indicated that there were different motivations in France and the United States for doing recycling behavior. In France, social responsibility was clearly a motivating cultural norm, while in the United States there was no such sense of social responsibility. To connect with Chiu et al.’s study, the intersubjective perceptions of recycling in France were different than those perceptions in the United States.

Research Overview and Hypotheses

For the present study, we were interested in the differences between French and American environmental attitudes and behavior, as well as how the societal norms in each country influence these attitudes and behaviors. We conducted two research studies to address these questions. Study 1 involved analyzing data from the International Social Survey Programme’s 2010 environmental questionnaire. The purpose of this study was to establish the connections between environmental attitudes and behavior in France and the United States. We hypothesized that France would be low on attitudes and high on behavior, while the United States would be high on attitudes and low on behavior. For Study 2, we designed and distributed a questionnaire to a French and American sample that asked participants about their impressions
of others’ environmental attitudes and behaviors. We hypothesized that while all participants would overestimate the degree to which they prized pro-environmental attitudes and behaviors (see discussion of self-enhancement, Study 2), French participants would inflate their own views more when evaluating environmental behaviors whereas Americans would inflate their own views more when evaluating environmental attitudes. All experimental procedures outlined below complied with the ethical standards laid out by the Institutional Review Board.

Study 1

We completed our first study in order to gather initial data related to our research question. We extracted variables of interest from an International Social Survey Programme (ISSP) environmental questionnaire. The extensive dataset allowed us to address our basic question: is there a difference between French and American environmental attitudes and behaviors, and are attitudes and behaviors related in the two countries? The use of an existing data set from the ISSP allowed for an efficient analysis that gave us a starting point from which to continue for our second study (see below). Moreover, the ISSP data represents a statistically random sample of individuals, and therefore, unlike studies using exclusively student participants, results from Study 1 can be generalized to the greater population.

The ISSP is an association that distributes surveys around the world in order to facilitate research in the social sciences. The program began as a partnership between the German research association ZUMA and the American research group NORC. Both groups regularly conducted survey research in their own country, and in 1982 the German and American surveys included a set of identical questions for the first time. They repeated the practice in 1984, covering a different set of topics than had been covered in 1982. While the American and German groups were collaborating, the British research group SCPR also began focusing on
international cooperation in social science research. In 1984, these three groups, along with an Australian representative, formed the ISSP. The four founding countries of the ISSP have grown to include 48 member countries today, including France which joined in 1996.

Country and institution determine membership in the ISSP, with several institutions from the same country permitted membership. Institutions choose a national representative to attend ISSP organizational meetings, where members make decisions about research to be conducted. The Secretariat oversees this process; the Secretariat in place during the collection of the data we analyzed for this study was the B.I. and Lucille Cohen Institute for Public Opinion Research, from the University of Tel Aviv (International Social Survey Programme, 2012). Every year, the ISSP focuses on a different topic to examine in their annual survey. Examples of topics include Role of Government, Family and Changing, Religion, and National Identity. Since 1985, the ISSP has collected data about the environment three times; we chose to analyze the most recent survey, Environment III, from 2010 (International Social Survey Programme, 2010).

The purpose of study one was to analyze extant data from a large sample size that related to our research question, i.e., the relationship between French and American environmental attitudes and behaviors. We hypothesized that French people would exhibit higher amounts of environmental behavior than Americans. Additionally, we hypothesized that the environmental attitudes of French people would not correlate strongly with pro-environmental behavior, in comparison with the environmental attitudes of Americans, which would strongly correlate with pro-environmental behavior.

Method

Participants. 1,430 American and 2,253 French participated in the ISSP Environment III survey. In order to ensure a more valid comparison with our second study (see below), we
included only those participants from 18-50 years of age. All ISSP surveys were distributed via self-driven questionnaires or face-to-face interviews, and data was collected in the year 2010 (Appendix A).

**Procedure.** First, we isolated the data from the French and American samples, eliminating all other countries that participated in the survey. We next coded the survey for attitude items (such as given a list of environmental problems, “which do you think is the most important?”) and behavior items (such as “how often do you avoid buying certain products for environmental reasons?”). We then constructed two measures based on the attitudes and behavior items. The attitudes measure was derived from two items, each assessed on a five-point scale. The first item asked “how concerned are you about environmental issues?” on a scale from one (not at all concerned) to five (very concerned). The second item was “how much do you agree or disagree: we worry too much about the future of the environment and not enough about prices and jobs today” on a scale from one (agree strongly) to five (disagree strongly). We computed the mean of each of the above items with one indicating the least concern for the environment and five indicating the most concern. We used this composite score to represent attitudes in our subsequent analysis.

Next, we constructed a measurement reflecting environmentally conscious actions and behaviors. We used several items from the survey to establish this behaviors measure, shown in Table 1. We reverse-scored the behavior items, so that a higher score indicated always engaging in an environmentally-friendly behavior, and a lower score indicated never doing an environmentally-friendly behavior. The mean for the behavior measure was determined from a four-point scale, with one indicating the least amount of pro-environmental behavior and four indicating the highest amount.
We then examined the internal reliability of these constructed measurements by computing the Cronbach’s alpha coefficient, which reflects the degree to which the individual items from each scale were correlated with each of the other items measured. The behaviors scale was found to be internally consistent in both France ($\alpha = .74$) and the United States ($\alpha = .78$). The two items measuring environmental attitudes were positively correlated in both France ($r = .39, p < .001$) and the United States ($r = .27, p < .001$).

Results

We first conducted a $t$-test comparing cultural differences in environmental attitudes and environmental behaviors between the French and American samples. The mean level of concern for the environment was 3.48 (SD=.90) in France and 3.45 (SD=.95) in the United States. The results of a pooled $t$-test for attitudes were not significant ($t_{(1455)}=-.70, p=.481$), indicating no significant difference in pro-environmental attitudes between France and the United States.

Next, we examined the differences between the two countries in environmentally conscious behavior. The French mean was 2.71 (SD=.54), while the American mean was 2.14 (SD=.65). Because the variance of the data in the France and the United States was significantly different, with a greater degree of variance in the American sample compared to the French sample, $F_{(797, 661 )}=1.45, p<.001$, we used a Satterthwaite $t$-test. The results indicated a highly significant difference between France and the United States in environmentally-friendly behaviors, with $t_{(1458)}=-18.06, p<.001$.

To test the hypothesis that both countries would show similar levels of environmental attitudes while French participants would be higher on environmental behaviors, we conducted a multiple ordinary least squares regression to examine the impact of country and attitudes on environmental behavior, controlling for potential impact of gender. We created dummy
variables for country (France=1, United States=0) and gender (Male=1, Female=0). We also considered several interaction terms (country × gender, country × attitudes, and country × gender × attitudes). We then included these terms in a model regressing the independent variables and interaction terms on environmentally friendly behaviors.

The results of the ordinary least squares regression are shown in Table 2. The results yielded significant main effects of country (b=.94, \( p<.001 \)), as well as a significant main effect of attitudes (b=.32, \( p<.001 \)). There was a significant interaction between country and attitudes (b=-.11, \( p=.007 \)), which supported our hypothesis that attitudes would predict behaviors more strongly in the United States than in France. No significant effect of gender (b=.051, \( p=.743 \)) or interaction between country and gender (b=-.260, \( p=.253 \), attitudes and gender (b=-.044, \( p=.313 \)), or country, attitudes, and gender (b=.077, \( p=.226 \)) was observed (Table 2).

Discussion

The results of the \( t \)-test comparing American and French participants’ attitudes indicate that there is no significant difference found between French and American environmental attitudes. Meanwhile, the significant \( t \)-test run for the behaviors measure is significant, suggesting a meaningful difference between French and American environmental behaviors. These results support our hypothesis in suggesting that French and Americans do exhibit different amounts of environmentally-friendly behavior.

The multiple regression indicates non-significant results regarding the interaction of gender and the other variables. These results indicate that neither men nor women were more likely to act in environmentally friendly ways. Moreover, within each country there is no significant difference between men’s and women’s environmental behaviors. Men and women were also equally likely to have pro-environment attitudes. Finally, there is no meaningful
connection between country, gender, and attitudes. These results confirm that differences observed between French and American behavior are not due to gender influences.

The multiple regression analysis also yields results consistent with our hypothesis. The significant main effect of country suggests that country had a meaningful effect on the extent of the participants’ environmental behaviors, which is essentially the same result as the mean comparisons tests with t-tests. The significant effect of country supports our hypothesis that French and Americans exhibit significant differences in environmentally-friendly behaviors. The significant main effect of attitudes indicates that attitudes meaningfully influenced the environmental behaviors of participants. Importantly, however, there was a significant interaction between country and attitudes. This finding shows that American participants’ environmental attitudes significantly predicted their environmental behaviors; however, French participants’ environmental attitudes did not predict their environmental behaviors. This finding also supports our hypothesis that Americans’ attitudes would link to their behavior, while French attitudes would not.

Interestingly, one study with British participants found that moral obligation was the strongest predictor of environmental action (Whitmarsh, 2009). Whitmarsh’s findings suggest a similar process in American and British citizens, where internal attitudes were correlated with external actions. The French participants in the present study did not demonstrate the same pattern. The fact that French participant’s environmental attitudes did not predict behaviors is significant for several reasons. It replicates Arbuthnot and Lingg’s (1975) results, but it does so for a much broader range of behaviors; while Arbuthnot and Lingg focused exclusively on recycling behavior, this study examined a much wider range of environmental behaviors (Table 1). Additionally, Arbuthnot and Lingg conducted their study in 1975, long before the
widespread contemporary awareness of climate change and popular support for green behaviors. In contrast, the ISSP survey was distributed in 2010, and yet the two studies reached the same conclusion. This implies that some stable effect of French and American culture is at play, independent of changes wrought by altered environmental awareness over the past 35 years.

Study 1 was not without limitations. One drawback to Study 1 involved the wording of the ISSP environmental behavior items that we used to form our behaviors measure. The behaviors were specifically environmental (“how often do you reduce the energy or fuel you use at home for environmental reasons?” versus “how often do you reduce the energy or fuel you use at home?”). The items consequently framed the behaviors in environmental terms, making it more difficult to conclude if an action was done for environmental or non-environmental reasons. Our dependent variable (behaviors) was thus confounded with our independent variables (attitudes and country).

We concluded that since there was no difference in French and American attitudes yet there was a significant difference in French and American behaviors, there must be some unknown process that allowed French people to exhibit behaviors disconnected from their beliefs, while Americans demonstrated behaviors that were strongly connected to their beliefs. This reveals another weakness in our first study: we were unable to account for the specific reasons behind this difference in environmental behavior. The lack of variance in environmental behaviors in France suggests that many people in France engage in the same environmental behaviors, regardless of personal opinions. This suggests there is something in French society that influences individual behavior more strongly than personal preferences. This could be the cost of energy in France, another force, or a combination of forces. One of our goals for Study 2
was addressing what this unknown mitigating factor might be, with a focus on social and cultural norms as possible influences.

Study 2

We conducted Study 2 in order to further examine the influences on pro-environmental behaviors and attitudes in France and the United States. The results of Study 1 established the connection between attitudes and behavior in the American sample, and the lack of this connection in the French sample, suggesting a cultural difference in motivations for environmental behavior. In Study 2, we sought to explore the possible mitigating cultural force suggested by the results of Study 1. Specifically, we aimed to examine the roles of knowledge and cultural norms in the two countries by investigating not only what people do and think, but how they evaluate what other people do and think. People’s perceptions of other people (and their perceptions about what other people think) have strong influences on personal behavior (Chiu et al., 2010), and we believed that determining how these perceptions operate could shed light on the different mechanisms at play in French and American behaviors.

One phenomenon in particular that we sought to explore in Study 2 was the relationship between knowledge, environmental behaviors, and environmental attitudes. Some research has pointed to the lack of correlation between knowledge and environmental behaviors (Hungerford & Volk, 1990; Kollmuss & Agyeman, 2002). However, other research has suggested an alternate view. One study compared the effects of culture on environmental behavior in Francophone and Anglophone populations in Canada. The results of this study showed that knowledge had a significant effect on behavior (Laroche, Toffoli, Kim, & Muller, 1996). Though at odds with other research findings, this significant influence of knowledge on behavior shows the lack of conclusive results regarding the role of environmental knowledge in inspiring environmental
behavior. We therefore hoped to explore how environmental knowledge influenced environmental attitudes and behaviors in our participants.

A second phenomenon that we applied to the question of environmental actions and behaviors is correspondence bias, or the fundamental attribution error. The correspondence bias describes the tendency to use a person’s personality or character as an explanation for their behavior, while overlooking situational factors that can just as easily explain the behavior (Nisbett, Peng, Choi, & Norenzayan, 2001). For example, the correspondence bias is at play when a person sees a man kick a dog and assumes he kicked the dog because he is an evil person. However, perhaps the dog had just growled at the man and tried to bite him; had the observer known this, he or she would perhaps have taken situational concerns into account when judging the causes of the man’s behavior.

It has widely been believed that individuals in Eastern cultures such as Japan exhibit the correspondence bias to a much lesser degree than do people in Western cultures such as the United States (Chiu et al., 2010). We wanted to examine if differences in the correspondence bias played a role in the variation in French and American environmental behavior. Specifically, since Americans value internal attributions, it would make sense for them to emphasize internal attitudes more than the behaviors that result from those attitudes. One study supported this: Americans made more internal attributions than those in a collectivist culture (Al-Zahrani & Kaplowitz, 1993). Little research has focused on examining the differences in attributions among individualist countries, a subject which we sought to address.

A third interesting phenomenon we investigated in Study 2 is self-enhancement, the process of augmenting one’s view of oneself and inflating one’s self-esteem. Oftentimes, self-enhancement results in attributing successes to oneself and one’s own characteristics, while
attributing failures to external circumstances (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997). We wanted to examine whether self-enhancement differed between the French and American sample, and if there was a difference in how participants in the two countries practiced self-enhancement in regards to environmental attitudes versus environmental behaviors.

Specifically, we were interested in the idea that self-enhancement is stronger in areas that are personally relevant and important to participants. Cross-cultural research has found that people all over the world engage in self-enhancement, but in different domains that are prized by the given culture. For instance, individuals in collectivistic societies are more likely to self-enhance in domains related to relationships and groups, while people in individualistic cultures are more likely to self-enhance in areas of personal achievement (Sedikides, Gaertner, & Toguchi, 2003).

Thus, we anticipated that all participants would demonstrate general self-enhancement and also self-enhance for issues that we believed were important in each country. We hypothesized that French people would self-enhance their support of norms regarding pro-environmental behaviors (e.g., reusing old items in favor of buying new, bringing reusable bags when grocery shopping, and turning off lights and appliances). Conversely, we hypothesized that American participants would self-enhance their support of norms regarding pro-environmental attitudes (e.g., believing strongly in environmental conservation and thinking we should conserve natural resources for the future). Additionally, we expected to replicate the findings from Study 1 that American attitudes and behaviors are correlated, while French are not. Finally, we had no specific hypothesis regarding the effect of environmental knowledge, due to conflicts in previous research on the subject. Thus our environmental knowledge analysis was exploratory in nature.
Method

Participants. We recruited American and French participants using snowball sampling and a French online forum. There were 101 total participants, of whom 87 completed the entire survey. Of the 101 total participants, 40 were French and 61 were American. The 40-person French sample included 17 women, 15 men, and 8 participants with unknown gender. 32 of the 40 French participants completed the whole study. 23% were 18-22 years old, 58% were older than 22, and the remaining participants’ ages were unknown. Within the 61-person American sample, 43 participants were female, 10 were male, and 8 were unknown. 55 of the 61 participants completed the study. 55% of the American participants were 18-22 years old, 36% were older than 22, and the remaining ages were unknown.

Materials and Procedure. To address the role of cultural norms in environmental decisions, we followed a quasi-experimental design by distributing the survey to our two populations: French and American participants. The survey was divided into four sections. The first three sections were each further broken down into two parts: a) questions about attitudes and b) questions about behaviors. In the first part of section one, participants were asked to first indicate whether they would have a positive or negative impression, on a scale of one (very negative impression) to seven (very positive impression), of someone who had strong pro-environmental attitudes (e.g., “Someone who feels passionately about environmental issues” and “Someone who is very worried about irreversible damage to the natural environment”). In the second part of section one, participants indicated how they would evaluate someone who engaged in either pro-environmental behavior (e.g., “Someone who refuses to buy products that are harmful to the environment” and “Someone who is meticulous about recycling paper, cans,
and bottles”) or anti-environmental behavior (e.g., “Someone who does not bother with environmental concerns”).

Section two asked participants to rate the same items from section one, evaluating pro-environmental attitudes and behaviors. However, instead of assessing their own personal evaluations of these targets, participants were asked to rate the extent to which they thought most people (people in their community) would have a positive or negative impression of someone who held strong pro-environmental attitudes or engaged in pro-environmental behaviors.

Section three asked participants to rate their own environmental behaviors and attitudes. This section contained the same questions as the previous two sections, with additional attitudes-items.

We adapted the items from measures posted on conpsychmeasures.com, a website which provides questionnaires for use in environmental research. We adapted the behavior questionnaire from the Self-Reported Proenvironmental Behavior Scale (Schultz & Zelezny, 1998), and we adapted the attitude questionnaire from the Questionnaire on Environmental Beliefs. (Herrera, 1992).

The remaining section asked questions about environmental knowledge. We adapted the environmental knowledge survey in part from the Measurement of Ecological Attitudes and Knowledge Revised. The knowledge questions were presented in multiple-choice format. An example question is: “Mercury has been found at unacceptable levels in: a) fruit, b) vegetables, c) seafood, d) beef, or e) soft drinks” (Maloney & Ward, 1975). We adapted the final five questions on the environmental knowledge survey from National Geographic’s Greendex Knowledge Quiz, which included items such as “Approximately how much of the water on Earth is considered fresh water: a) less than 5 percent, b) between 5 percent and 10 percent, c) between
10 percent and 20 percent, or d) more than 20 percent” (Greendex Knowledge). We included this measurement to examine whether or not being knowledgeable about pro-environmental issues would differentially impact pro-environmental attitudes and behavior in France and the United States.

In summary: Section one asked participants about their impressions of others’ environmental behaviors and attitudes. Section two demanded how participants thought others in their society would judge people’s environmental behaviors and attitudes. These two sections contained the exact same questions about environmental behaviors and attitudes, with different instruction indicating whether participants should rate the items from their own perspective, or from the perspective of others in their society. Section three asked participants about their own environmental behaviors and attitudes, using the same questions as the first two sections plus additional attitudes questions. Section four contained environmental knowledge questions. In addition to this questionnaire with four sections, Study 2 materials included a consent form and a request for demographic information (Appendix B).

All measurements were translated into French using a committee method in which the original English measurements were translated into French. The resulting translation was verified by two French-English bilinguals, including a French tutor at the College of William & Mary and a bilingual student lab member, who then verified and revised the translation (Appendix C).

We next distributed the survey online using Qualtrics survey software. We utilized snowball sampling to collect data, and used William & Mary students, additional non-student American participants, contacts provided by the French tutor, and contacts from the IES Study Abroad program in Nantes, France. Data collection lasted for six weeks in both countries.
Results

First, we examined the means and reliabilities of each measurement in both France and the United States (Table 3). Internal reliabilities of each scale were sufficiently high in both countries, with Cronbach’s alphas all equal to or greater than .79 in both countries. An examination of the means for each measurement by country indicated that participants’ personal levels of pro-environmental attitudes and behaviors did not differ by country, with the exception of evaluations of others who engage in pro-environmental behaviors, which was marginally higher in France.

Next, we examined the correlations between personally held environmental beliefs and behaviors in each country. Contrary to the findings of Study 1, attitudes and behaviors were highly correlated in both France ($r=.76, p<.0001$) and the United States ($r=.61, p<.0001$). These correlations were not significantly different in magnitude ($z=-1.23, p=.22$). This result indicates that attitudes and behaviors were strongly linked in both countries.

As is shown in Table 3, French and American participants did not differ in their environmental knowledge. We examined the relationship between environmental knowledge and participants’ personal environmental attitudes and behaviors in each country. To do so, we conducted two ANOVAs predicting either attitudes or behaviors by Country and participants’ scores on the knowledge test. For the attitudes analysis, the main effect of Country was significant $F(1,82)=4.88, p=.03$, while the overall effect of knowledge was not significant $F(1,82)=.22, p=.64$. These results were qualified by a significant interaction between Country and knowledge $F(1,88)=70.68, p<.0001$, indicating that while the relationship between knowledge and attitudes was positive in the United States ($r=.24, p=.08$), it was negative in France ($r=-.16, p=.37$). Similar effects were observed for the behaviors analysis. The main effect
of Country was significant $F(1,82)=4.03$, $p=.048$, the main effect of knowledge not significant $F(1,82)=.01$, $p=.96$, and the Country $\times$ Knowledge condition was marginally significant $F(1,82)=2.94$, $p<.09$. These results for knowledge and behavior followed the same pattern as the results for knowledge and attitudes: the relationship between knowledge and environmentally-friendly behaviors was significant in a positive direction for the Americans ($r=.24$, $p=.08$), but in a negative direction for the French ($r=-.25$, $p=.16$).

Finally, we examined the main hypothesis of Study 2, namely that Americans would self-enhance for attitudes (e.g., evaluating individuals with strong pro-environmental attitudes more highly that they expect others in society to do) while the French participants would self-enhance for behaviors (e.g., evaluating individuals who engage in pro-environmental behaviors more highly than they expect others in their society to do). To test this hypothesis, we conducted a two (Country: France vs. US) $\times$ two (Content: Attitudes vs. Behaviors) $\times$ two (Target: Self vs. Others) mixed-model ANOVA with Country as a between subjects factor and Content and Target as within subject factors. The results of this analysis found no significant overall main effect of country $F(1,88)=.76$, $p=.386$, while the main effects of both Content $F(1,88)=7.24$, $p=.009$ and Target $F(1,88)=70.68$, $p<.0001$ were significant. No significant interaction between Country and Content $F(1,88)=.38$, $p=.56$, or Country and Target $F(1,88)=.60$, $p=.44$ was observed, while the interaction between Content $\times$ Target was significant $F(1,88)=6.44$, $p=.013$.

These effects were qualified by a significant Country $\times$ Content $\times$ Target interaction $F(1,88)=4.31$, $p=.04$. The significant three-way interaction between Country, Content, and Target indicated that in the United States, the difference between Target (i.e., one’s personal evaluation of an environmentally conscious person vs. one’s perception of how other people in

---

1 We ran a separate analysis including gender, and found no significant main effects or interactions with gender and therefore do not include gender in this analysis.
society would evaluate an environmentally conscious individual) depended on the content of the evaluation. In the United States, the self-other difference was greater for environmentally friendly attitudes than it was for environmental friendly behaviors. However, this effect was not observed in France, where no meaningful difference in self vs. other evaluations of attitudes and behaviors was observed (Figure 1).

Discussion

Results showed a strong relationship between environmental attitudes and behaviors in both France and the United States. This is contrary to our hypothesis that only the American attitudes and behaviors would be correlated. We suspect this was due to a bias in the participant demographics (see discussion of limitations below). Regarding our knowledge measurement, neither country showed higher levels of environmental knowledge. Additionally, results showed that environmental knowledge and attitudes were positively correlated in the United States, such that as knowledge increased, environmental attitudes also increased. The same was true for behavior: as knowledge increased, environmental behaviors increased. French participants, in contrast, showed a negative correlation: as environmental knowledge increased, attitudes decreased. Additionally, as knowledge increased, environmental behaviors decreased. The difference in the correlations’ directions between France and the United States was significant. We attribute these findings in terms of the importance Americans place on internal attributions (Al-Zahrani & Kaplowitz, 1993). Americans want their inner beliefs to correlate with their behaviors, so it would make sense that once they possess environmental knowledge, they would want their attitudes and behaviors to meaningfully relate to that knowledge. French participants, on the other hand, did not appear to place as much importance on the correlations between
knowledge, attitudes, and behaviors. Therefore, French participants’ environmental attitudes and behaviors were not augmented by an increase in environmental knowledge.

Overall, the measurements indicated few significant differences between France and the United States, with one notable exception: compared with the Americans, the French participants had higher evaluations of others who practice pro-environmental behaviors. The difference between the countries is approaching significance. This result indicates that the French participants valued pro-environmental behavior more highly than the American participants did, supporting the idea that in France, pro-environmental behaviors are more important than attitudes. The results of the mixed-model ANOVA indicated that neither French nor American participants had significantly higher evaluations of environmental attitudes and behavior combined.

The ANOVA also revealed a significant interaction between country, content, and target. The interaction was such that the differences between the self-rating and the impressions rating were significant between the two countries regarding the content (attitudes and behaviors) that participants were self-enhancing. Consistent with our hypothesis, for Americans, the self-other difference in ratings of environmentally conscious attitudes were significantly greater than the self-other difference regarding environmental behaviors. That is, participants self-enhanced their positive perceptions of others with pro-environmental attitudes significantly more than they did their evaluations of others who practiced pro-environmental behaviors. In other words, the American participants revealed the value they place on internal attributions by self-enhancing more in regards to beliefs than in regards to actions (Al-Zahrani & Kaplowitz, 1993).

The French sample also rated their own impressions of pro-environmental behavior and attitudes more highly than they thought others in their society would. However, contrary to the
results form the American sample, there was no difference in the amount of self-enhancement between pro-environmental behaviors and attitudes. The French participants self-enhanced to the same degree in both areas, suggesting that they did not place more value on either environmental behaviors or attitudes. Thus, our hypothesis was partly supported regarding the importance that Americans place on attitudes, but not regarding the importance that French participants place on behaviors. This suggests that the differences we observed were due not to the French participants’ valuing of behaviors, but due to the American participants’ valuing of attitudes.

These results have important implications for how people make behavioral decisions in both countries. Though self-serving biases exist in both countries, Americans self-enhanced significantly more for environmental attitudes. This supports previous research regarding the importance of internal attributions in the United States (Al-Zahrani & Kaplowitz, 1993). It also reveals the importance that Americans place on the correspondence between attitudes and behavior (Miyamoto & Kitayama, 2002), an importance that does not seem to be present in the French sample. Western legal systems and patterns of moral judgments reflect this idea of attitudes aligning with behaviors. Westerners tend to stress intention when making moral judgments of harmful actions, a trend which can also be seen in Western legal judgments (Young & Saxe, 2011). Such differences in moral judgments are also displayed in different religious cultures. Researchers have shown that when comparing Protestants and Catholics, Protestants made more internal attributions (as opposed to external attributions) than Catholics did. This result was attributed to the Protestant focus on the inner soul (Li et al., 2011). This suggests that an external factor (such as religion) can inform an internal factor (such as attribution style), which can apply to the present study in two ways. One application is that the actual religious
make-up of France and the United States mimics the Li and colleagues (2011) study, such that a greater proportion of Catholics in France (two-thirds Catholic in 2009) and a greater proportion of Protestants in the United States (25% Catholic and 51% Protestant/non-Catholic Christian in 2008) could partly explain the result that Americans valued attitudes far more than did French people (de Gaulmyn, 2009; Kosmin & Keysar, 2008). A second application is that religion per se may not be the causal factor at play in Americans’ valuing environmental attitudes over actions; however, the Li and colleagues study may provide a framework from which to examine the question, with France and the United States replacing Catholics and Protestants.

The fact that Americans placed a higher value on attitudes also reveals the importance of cultural norms in environmental decision-making. In each country, participants practiced general self-enhancement of both attitudes and behaviors. It is common in both France and the United States, then, to enhance one’s own impressions over others’ impressions (Sedikides et al., 2003). We would thus expect that manipulating someone’s impressions of others’ behavior would cause him to raise his own impressions even higher. Given the importance of impressions of cultural norms for determining actual behavior, this idea has meaningful implications for environmental behavior.

Research has shown that framing an issue by emphasizing others’ pro-environmental behavior is correlated with a higher increase in overall pro-environmental behavior, while framing an issue in terms of environmental knowledge does not result in as great an increase in behavior. Schultz, Khazian, and Zaleski (2008) demonstrated the power of social norms in their study of towel use at a beach resort. Guests were given one of two signs: one simply informed guests of the ecological costs of washing towels, and the other added information about the high percentage of other guests who reused their towels. Towels were reused significantly more by
the participants who received the message about others reusing towels (Schultz et al., 2008). This study highlights the importance of asking about norms (evaluations of others) in the present study. Our findings suggest that French and American participants, both of whom engaged in self-enhancement, would follow the trend established in Schultz and colleague’s paper: having the impression that others behave a certain way would raise their own impressions higher and, as is suggested by Schultz, increase their rate of environmental behavior as well.

There were some limits to Study 2. Chief among these was the use of snowball sampling to collect responses. This collection method utilized a social network which largely consisted of our personal friends and acquaintances, who by virtue of knowing us are more likely to be environmentally-conscious than the wider student and general populations. Alternatively, the French sample was accessed through a less specific channel, and was thus likely more representative. Therefore, the American participants in Study 2 may have been more likely to engage in pro-environmental behavior than the French participants. However, we know from Study 1 that, given a large and generalizable sample, the opposite is true: French people in fact engage in more environmental behaviors than Americans. The French participants were also recruited through various social networks, and though these networks were broader than those used for the American sample, a similar bias could exist which explains the strong correlation between French attitudes and behaviors in Study 2 despite the lack of such a correlation in Study 1.

General Discussion

Review of Studies and Results

In Study 1, we analyzed a large dataset from the ISSP environmental survey that contained data from French and American participants. The purpose of this analysis was to
establish the nature of the relationship between environmental attitudes and behaviors in France and the United States. We hypothesized that French participants would engage in more environmentally-friendly behaviors than Americans, and that French environmental attitudes would not correlate with environmental behaviors while American environmental attitudes would predict pro-environmental behaviors.

Results from Study 1 indicated that there is no significant difference between French and American environmental attitudes. Additionally, in support of our hypothesis, there was a significant difference between French and American environmental behaviors. Results also showed no significant interactions between gender and behavior or between gender and attitudes in either country. Finally, in support of our hypothesis, there was a significant interaction between country and attitudes, indicating that American participants’ environmental attitudes predicted their environmental behavior, while this pattern was not observed among the French participants.

In Study 2, we addressed how environmental knowledge, cultural norms, and impressions of others influence environmental attitudes and behaviors in France and the United States. We specifically hoped to identify mitigating factors responsible for the connection between behavior and attitudes observed in Study 1 in the American sample, but not observed in the French sample. We applied the theories of correspondence bias and self-enhancement to the study of how French and American participants evaluated others in their society. We hypothesized that participants from both countries would demonstrate general self-enhancement in the areas of behaviors and attitudes. We further hypothesized that the French would self-enhance more for norms of pro-environmental behavior, while Americans would self-enhance more for norms of pro-environmental attitudes.
Results for Study 2 showed correlations between environmental attitudes and behavior in both the French and American samples. Additionally, as Americans’ environmental knowledge increased, their environmental attitudes and behaviors increased. Conversely, as French participants’ environmental knowledge increased, their environmental attitudes and behaviors decreased (albeit not significantly). Results also showed a significant difference in the importance of environmental behaviors in the two countries, such that French participants valued pro-environmental behavior higher than American participants did. Results indicated that neither the American nor combined. Additionally, there was a significant interaction of country, content (attitudes versus behavior), and target (self versus other). Consistent with our hypothesis, this interaction showed that Americans self-enhanced more for perceptions of environmental attitudes than for perceptions of environmental behaviors. Alternately, the French sample did not self-enhance more for either environmental behaviors or attitudes, contrary to our hypothesis.

The main results from the studies indicate (a) environmental attitudes predict environmental behaviors in the United States but not in France; (b) both French and American participants rate their own impressions of environmentalism higher than they believe others in their society would rate environmentalism (i.e., self-enhancement); (c) Americans self-enhance more for norms of environmental attitudes than for norms of environmental behaviors; (d) French people self-enhance to the same degree regarding norms of environmental attitudes and behaviors. Considered together, Studies 1 and 2 reveal an American tendency to value attitudes over behaviors, revealed by (a) the predictive nature of American environmental attitudes for environmental behaviors; and (b) by Americans’ greater self-enhancement for attitudinal norms than for behavioral norms. Additionally, the present research reveals a lack of such concern in France, where all participants demonstrated the same high amount of environmental behavior
regardless of personal views, and where neither norms of environmental attitudes nor norms of environmental behaviors were favored above the other.

Interpretations and Implications

Intersubjective theory. In many cases, norms, which are socially shared ideas of what is considered socially acceptable, are more effective for predicting behaviors than are personal beliefs. Asking what participants believe other individuals in their society are thinking is one method of measuring normative influence. Results from our participants’ evaluations of others showed that Americans stress the importance of inner beliefs aligning with environmental actions and we therefore predict that Americans would make internal attributions regarding people who act in environmentally responsible ways. On the other hand, French people do not value the relationship between attitudes and behaviors as highly when considering environmental issues.

According to the intersubjective approach, an individual’s intersubjective reality can control behavior more than personal beliefs. To review, the intersubjective approach dictates that people often make decisions of how to act based on their perceptions of shared cultural norms (these perceptions form an individual’s intersubjective reality), which can differ from what the actual cultural norms are (Chiu et al., 2010). Given the results above, an American’s intersubjective view of society is one in which environmental attitudes are valued and respected more than behaviors. In France, the reverse is true, and people perceive that environmental actions are prized.

Internal and external attributions. Research on cultural differences in attribution provides an additional perspective with which to examine the tendency of Americans to commit the fundamental attribution error (the tendency to overemphasize internal factors when making
judgments). This tendency was not observed in French participants in the present study. Americans are thus more prone to making internal attributions when assessing environmental behavior. For example, if an American woman sees a man diligently sorting recyclables, it is likely that she will assume he holds strong-pro-environment views; in France, however, this is not necessarily the case. These implications are interesting in that France and the United States are both considered “western” countries, yet the present study suggests differences in internal attributions among traditionally individualistic (and therefore more prone to making internal attributions) countries (Al-Zahrani & Kaplowitz, 1993). Miyamoto and Kitayama (2002) explain that North Americans are more likely to use internal attributions when describing another’s behavior, and Asians are more likely to use external, or situational, attributions. Based on the present results, we propose an attribution continuum for environmental behavior: the United States is at the high internal attribution end, East Asian countries are at the high external attribution end, and France rests somewhere in the middle.

This conclusion also helps explain why it was not necessary for environmental attitudes to correspond with behaviors in France (Study 1). Given that French people do not self-enhance more for environmental attitudes or behaviors, it makes sense that neither is valued more highly. Extending the idea of France being somewhere in the middle of the internal-external attribution continuum, French people likely make more external than internal attributions when evaluating people in French society who engage in environmental behaviors. Making external attributions for environmental behavior would be perceived as the cultural norm (or intersubjective reality) in France, making it normal and expected for external factors to impact environmental behavior, thus rendering internal attitudes irrelevant.
Perceptions of social norms and environmental action. Many social psychologists have researched the external factors, and specifically mechanisms involving social perceptions, that influence behavior. Several studies explored the norms-focused strategies effective in inspiring environmental behavior. One study examined the role of descriptive and injunctive norms in motivating pro-environmental behavior. Descriptive norms, which describe what people actually do, are often over utilized in environmental appeals, while injunctive norms, what people should do, are underutilized. Cialdini and colleagues (2006) found that a message using injunctive norms was more effective than one invoking descriptive norms for convincing tourists at a national park to refrain from stealing petrified wood (Cialdini et al., 2006). This study shows that if people are exposed to the norm of how they should behave, they internalize it as what is accepted by those in their society. Therefore, those in the injunctive condition had the impression that most visitors to the park would not steal petrified wood. This study is an example of a highly effective manipulation of messaging such that perceptions of cultural norms were shifted toward higher levels of pro-environmental behavior.

In addition to the power of messaging for communicating norms, the relationship between injunctive and descriptive norms has further applications in the field of environmental psychology. Oftentimes injunctive and descriptive norms are the same in a given culture; however, sometimes what most people would approve of (such as diligent recycling), most people would not themselves do (Cialdini, Kallgren, & Reno, 1991). It may be the case that in the present study, the injunctive and descriptive norms for environmental behavior are the same in France (for example, I approve when I see others diligently recycling, and I myself would diligently recycle), while in the United States, they differ (for example, I approve when I see others diligently recycling, but I myself would not diligently recycle). Cialdini and colleagues
(1991) demonstrated that in situations where injunctive and descriptive norms differ for a given behavior, it is possible to change a person’s behavior based on the norm that is made the most salient. Participants were exposed to a littered or clean environment, and observed a confederate litter in the environment or simply walk through the environment. Participants littered the most after seeing the confederate litter in an already-littered environment. Participants littered the least when they saw the confederate litter in a clean environment. This latter condition highlighted that the confederate littered while most people in that environment had not littered. Thus, the descriptive norm changed depending on the condition, such that in the clean-environment, it appeared that more people in society practiced pro-environmental behavior, while in the littered condition, it seemed that more people in society did not engage in environmentally-friendly behavior (Cialdini, 2003). The implications for this study are important for inspiring Americans to increase their rates of pro-environmental behavior.

Future Directions

Public policy implications. There are many applications of research in the field of environmental psychology, with the ultimate goal of augmenting environmentally-conscientious behaviors. Past research has identified several factors that motivate increased pro-environmental actions. One study examined the role of competition in energy-saving behavior. Two groups of factory workers tried to lower their energy use; one was given reports about how the other was doing, while the other was not. The group that received feedback about the other group saved more energy than the workers who only knew about their own performance. Additionally, the participants changed their behavior with very little change in their attitudes (Siero, Bakker, Dekker, & van den Burg, 1996). The lack of attitude change supports the results we found in the French sample, where attitudes did not correlate with environmental actions.
Other research points to the importance of convenience in inspiring pro-environmental behavior. Osbaldiston and Schott (2012) showed that of several motivational techniques (such as goal setting, social modeling, and rewards), convenience was by far the most effective way to inspire environmental behavior. Additionally, Chiu and colleagues (2010) explained that the more someone comes across an idea, the more that person will believe the idea is common. When considering environmental behavior, these studies indicate that it must be easy to do an environmental behavior in order for people to follow through. Additionally, if messages promoting pro-environmental behavior are widely available and encountered in a given culture, the members of that culture will believe that such behaviors are widespread, regardless of whether or not those behaviors are in fact common.

By merging existing research with the current study, we identify several important implications for public policy. First, a combination of competition and convenience can be utilized to alter the perception of cultural norms regarding environmental behavior. Since our study indicated that Americans value attitudes, we would recommend a public campaign that implies that others in American culture highly value the environment and often practice environmental behaviors. Since Americans prefer when their behavior aligns with their attitudes, shifting attitudes to be more environmental should result in increased environmental behavior. Our study shows the importance of cultural norms in the United States for inspiring environmental behavior, so being mindful of how norms are presented is important for any public campaign designed to increase environmental behavior. Such concerns about attitudes and internal attributions were not found in France, so such attention to the perception of attitudinal cultural norms is not necessary for promoting environmental behavior by French people.
Future research. Additional research is required to further specify the exact cultural influences on environmental attitudes and behavior. The ultimate goal of further research would be to affect the same rates of environmental behavior in American participants as was seen in French participants. Since our study was entirely correlational, a follow-up study with an experimental-design should be implemented. A suggested framework for such an experiment would be to recruit American participants to a lab, where they would be randomly assigned to be primed with an American (importance of connection between environmental attitudes and behaviors) or French (no importance between attitudes and behaviors) viewpoint. The goal of such a study would be to determine if American environmental behaviors could be changed after being primed with a French system of thought. Such a study would have implications for the adoption of cultural norms in order to inspire environmental actions. Additional studies could aim to further refine the cultural factors at play in environmental decisions by examining such topics as attribution style, intersubjectivity theory, and cultural norms. The fields of environmental and cultural psychology have infinite possibilities for future research, research that can result in effective strategies for addressing the environmental problems facing our society.
References


Table 1

*Behaviors Measure Survey Items, Study One (From the ISSP 2010 Module on Environment)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 a)</td>
<td>How often do you make a special effort to sort glass or tins or plastic or newspapers and so on for recycling?</td>
</tr>
<tr>
<td>20 b)</td>
<td>How often do you make a special effort to buy fruit and vegetables grown without pesticides or chemicals?</td>
</tr>
<tr>
<td>20 c)</td>
<td>And how often do you cut back on driving a car for environmental reasons?</td>
</tr>
<tr>
<td>20 d)</td>
<td>How often do you reduce the energy or fuel you use at home for environmental reasons?</td>
</tr>
<tr>
<td>20 e)</td>
<td>And how often do you choose to save or re-use water for environmental reasons?</td>
</tr>
<tr>
<td>20 f)</td>
<td>And how often do you avoid buying certain products for environmental reasons?</td>
</tr>
</tbody>
</table>
Table 2

*Multiple Regression Analysis Results, Study 1 (Dependent Variable = Behaviors)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country (France =1)</td>
<td>.94</td>
<td>.15</td>
<td>.70</td>
<td>6.28</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>Gender (Male=1)</td>
<td>.05</td>
<td>.16</td>
<td>.04</td>
<td>.33</td>
<td>.74</td>
</tr>
<tr>
<td>Attitudes</td>
<td>.32</td>
<td>.03</td>
<td>.45</td>
<td>10.95</td>
<td>&lt;.001***</td>
</tr>
<tr>
<td>Country x Attitudes</td>
<td>-.11</td>
<td>.04</td>
<td>-.31</td>
<td>-2.69</td>
<td>.007**</td>
</tr>
<tr>
<td>Country x Gender</td>
<td>-.26</td>
<td>.23</td>
<td>-.15</td>
<td>-1.14</td>
<td>.25</td>
</tr>
<tr>
<td>Attitudes x Gender</td>
<td>-.04</td>
<td>.04</td>
<td>-.12</td>
<td>-1.01</td>
<td>.31</td>
</tr>
<tr>
<td>Country x Gender x Attitudes</td>
<td>.08</td>
<td>.06</td>
<td>.16</td>
<td>1.21</td>
<td>.23</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.08</td>
<td></td>
<td></td>
<td>10.28</td>
<td>&lt;.001***</td>
</tr>
</tbody>
</table>

Note 1. R² = .321

Note 2. *p < .05. **p < .01. ***p < .001
Table 3

*Means and Reliabilities, Study 2*

| Variables                  | United States |                   | France |                   | t   | p
|---------------------------|---------------|-------------------|--------|-------------------|-----|---
|                           | α  | m   | (sd) | α   | m   | (sd) |       |       |     |
| Knowledge Score           | .45 | .21 |      | .52 | .18 |      | -1.49 | .14   |
| Own Attitudes             | .86 | 5.13 | 1.11 | .88 | 5.29 | .98  | -.73  | .43   |
| Own Behaviors             | .79 | 4.09 | 1.2  | .85 | 4.45 | .92  | -.59  | .11   |
| Self-evaluations:         |     |      |      |     |      |      |       |       |     |
| Attitudes                 | .90 | 5.43 | .88  | .90 | 5.6  | 1.0  | -.92  | .36   |
| Behaviors                 | .83 | 5.57 | .72  | .86 | 5.87 | .85  | -1.91 | .06   |
| Other-evaluations:        |     |      |      |     |      |      |       |       |     |
| Attitudes                 | .89 | 4.63 | .90  | .92 | 4.77 | .93  | -.71  | .48   |
| Behaviors                 | .90 | 5.0  | .92  | .86 | 4.99 | .86  | .02   | .98   |
Figure 1. Evaluations of environmental actions and attitudes in France and the United States, Study 2. The dotted line shows the participants’ own evaluations, while the solid line shows participants’ perceptions of others’ evaluations. Note that in France, the difference between ‘self’ and ‘other’ evaluations was the same for actions and attitudes. Conversely, in the United States, the difference between ‘self’ and ‘other’ was greater for attitudes than actions, such that Americans rated their own perceptions of environmental attitudes much higher than they evaluated others’ impressions of environmental attitudes.
Appendix A

ISSP 2010 Module on Environment
Final Questionnaire July 2009

1a. Which of these issues is the most important for [France] [the USA] today?

   PLEASE TICK ONE BOX ONLY

   (✔)
   Health care  ☐
   Education  ☐
   Crime  ☐
   The environment  ☐
   Immigration  ☐
   The Economy  ☐
   Terrorism  ☐
   Poverty  ☐
   None of these  ☐
   Can’t choose  ☐

b. Which is the next most important?

   PLEASE TICK ONE BOX ONLY

   (✔)
   Health care  ☐
   Education  ☐
   Crime  ☐
   The environment  ☐
   Immigration  ☐
   The Economy  ☐
   Terrorism  ☐
   Poverty  ☐
   None of these  ☐
   Can’t choose  ☐

2. How much do you agree or disagree with each of these statements?

   PLEASE TICK ONE BOX ON EACH LINE

   Agree strongly  Agree  Neither agree nor disagree  Disagree  Disagree strongly  Can’t choose

a. Private enterprise is the best way to solve [France] [the USA’s] economic problems

   ☐  ☐  ☐  ☐  ☐  ☐  ☐

b. It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes

   ☐  ☐  ☐  ☐  ☐  ☐  ☐
3a. Looking at the list below, please tick a box next to the one thing you think should be [France’s] [the USA’s] highest priority, the most important thing it should do.

PLEASE TICK ONE BOX ONLY

[France] [the USA] should...

Maintain order in the nation
Give people more say in government decisions
Fight rising prices
Protect freedom of speech
Can’t choose

(✔)

b. And which one do you think should be [France’s] [the USA’s] next highest priority, the second most important thing it should do?

PLEASE TICK ONE BOX ONLY

[France] [the USA] should...

Maintain order in the nation
Give people more say in government decisions
Fight rising prices
Protect freedom of speech
Can’t choose

(✔)

4a. Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people? Please tick one box to show what you think, where 1 means you can’t be too careful and 5 means most people can be trusted.

PLEASE TICK ONE BOX ONLY

You can’t be too careful

Most people can be trusted

Can’t choose

1    2    3    4    5

b. Generally speaking, do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair? Please tick one box to show what you think, where 1 means most people would try to take advantage of you and 5 means that most people would try to be fair.

PLEASE TICK ONE BOX ONLY

Most people would try to take

Most people would try to be

Can't choose
ENVIRONMENTAL ATTITUDES AND BEHAVIORS

5. To what extent do you agree or disagree with the following statements?

Please tick one box on each line

<table>
<thead>
<tr>
<th>Agree strongly</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Disagree strongly</th>
<th>Can’t choose</th>
</tr>
</thead>
</table>

a. Most of the time we can trust people in government to do what is right
   [ ] [ ] [ ] [ ] [ ]

b. Most politicians are in politics only for what they can get out of it personally
   [ ] [ ] [ ] [ ] [ ]

6. Generally speaking, how concerned are you about environmental issues? Please tick one box below to indicate what you think, where 1 means you are not at all concerned and 5 means you are very concerned.

Please tick one box only

<table>
<thead>
<tr>
<th>Not at all concerned</th>
<th>Very concerned</th>
<th>Can’t choose</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

7. Here is a list of some different environmental problems.

a) Which problem, if any, do you think is the most important for [France] [the USA] as a whole?

Please tick one box only

- Air pollution [✔]
- Chemicals and pesticides
- Water shortage
- Water pollution
- Nuclear waste
- Domestic waste disposal
- Climate change
- Genetically modified foods
- Using up our natural resources
- None of these
- Can’t choose

b) Which problem, if any, affects you and your family the most?

Please tick one box only

- Air pollution [✔]
8a. How much do you feel you know about the causes of these sorts of environmental problems? Please tick one box below to indicate what you think, where 1 indicates you feel you know nothing at all and 5 indicates you feel you know a great deal.

*PLEASE TICK ONE BOX ONLY*

<table>
<thead>
<tr>
<th>Know nothing at all</th>
<th>Know a great deal</th>
<th>Can't choose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>□</td>
</tr>
</tbody>
</table>

b. And how much do you feel you know about solutions to these sorts of environmental problems? Please tick one box below to indicate what you think, where 1 indicates you feel you know nothing at all and 5 indicates you feel you know a great deal.

*PLEASE TICK ONE BOX ONLY*

<table>
<thead>
<tr>
<th>Know nothing at all</th>
<th>Know a great deal</th>
<th>Can't choose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>□</td>
</tr>
</tbody>
</table>

9. How much do you agree or disagree with each of these statements?

*PLEASE TICK ONE BOX ON EACH LINE*

<table>
<thead>
<tr>
<th>Agree strongly</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Disagree strongly</th>
<th>Can’t choose</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

a. We believe too often in science, and not enough in feelings and faith

b. Overall, modern science does more harm than good

c. Modern science will solve our environmental problems with little change to our way of life
10. And how much do you agree or disagree with each of these statements?

**PLEASE TICK ONE BOX ON EACH LINE**

<table>
<thead>
<tr>
<th>Agree strongly</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Disagree strongly</th>
<th>Can’t choose</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. We worry too much about the future of the environment and not enough about prices and jobs today</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. Almost everything we do in modern life harms the environment</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. People worry too much about human progress harming the environment</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

11. And please tick one box for each of these statements to show how much you agree or disagree with it.

**PLEASE TICK ONE BOX ON EACH LINE**

<table>
<thead>
<tr>
<th>Agree strongly</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Disagree strongly</th>
<th>Can’t choose</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. In order to protect the environment [France] [the USA] needs economic growth</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. Economic growth always harms the environment</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. The earth simply cannot continue to support population growth at its present rate</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

12a. How willing would you be to pay much higher prices in order to protect the environment?

**PLEASE TICK ONE BOX ONLY**

(✔)

<table>
<thead>
<tr>
<th>Very willing</th>
<th>Fairly willing</th>
<th>Neither willing nor unwilling</th>
<th>Fairly unwilling</th>
<th>Very unwilling</th>
<th>Can’t choose</th>
</tr>
</thead>
</table>

b. And how willing would you be to pay much higher taxes in order to protect the environment?
c. And how willing would you be to accept cuts in your standard of living in order to protect the environment?

**PLEASE TICK ONE BOX ONLY**

(✔)

Very willing  □  
Fairly willing  □  
Neither willing nor unwilling  □  
Fairly unwilling  □  
Very unwilling  □  
Can’t choose  □

13. How much do you agree or disagree with each of these statements?

**PLEASE TICK ONE BOX ON EACH LINE**

Agree  strongly  Agree  Neither agree nor disagree  Disagree  Disagree  strongly  Can’t choose

a. It is just too difficult for someone like me to do much about the environment  □  □  □  □  □  □  □

b. I do what is right for the environment, even when it costs more money or takes more time  □  □  □  □  □  □  □

c. There are more important things to do in life than protect the environment  □  □  □  □  □  □  □

d. There is no point in doing what I can for the environment unless others do the same  □  □  □  □  □  □  □

e. Many of the claims about environmental threats are exaggerated  □  □  □  □  □  □  □

f. I find it hard to know whether the way I live is helpful or harmful to
the environment

Environmental problems have a direct effect on my everyday life

14a. In general, do you think that air pollution caused by cars is …

   PLEASE TICK ONE BOX ONLY

   (✔)

   … extremely dangerous for the environment, ☐
   very dangerous, ☐
   somewhat dangerous, ☐
   not very dangerous, ☐
   or, not dangerous at all for the environment? ☑
   Can’t choose ☐

b. In general, do you think that air pollution caused by industry is …

   PLEASE TICK ONE BOX ONLY

   (✔)

   … extremely dangerous for the environment, ☐
   very dangerous, ☐
   somewhat dangerous, ☐
   not very dangerous, ☐
   or, not dangerous at all for the environment? ☑
   Can’t choose ☐

c. And do you think that pesticides and chemicals used in farming are …

   PLEASE TICK ONE BOX ONLY

   (✔)

   … extremely dangerous for the environment, ☐
   very dangerous, ☐
   somewhat dangerous, ☐
   not very dangerous, ☐
   or, not dangerous at all for the environment? ☑
   Can’t choose ☐

d. And do you think that pollution of [France’s] [the USA’s] rivers, lakes and streams is …

   PLEASE TICK ONE BOX ONLY

   (✔)

   … extremely dangerous for the environment, ☐
   very dangerous, ☐
   somewhat dangerous, ☐
   not very dangerous, ☐
   or, not dangerous at all for the environment? ☑
   Can’t choose ☐
14e. In general, do you think that a rise in the world’s temperature caused by climate change is…

*PLEASE TICK ONE BOX ONLY*

(✔)

… extremely dangerous for the environment, □
   very dangerous, □
   somewhat dangerous, □
   not very dangerous, □
   or, not dangerous at all for the environment? □
   Can’t choose □

f. And do you think that modifying the genes of certain crops is …

*PLEASE TICK ONE BOX ONLY*

(✔)

… extremely dangerous for the environment, □
   very dangerous, □
   somewhat dangerous, □
   not very dangerous, □
   or, not dangerous at all for the environment? □
   Can’t choose □

g. And do you think that nuclear power stations are…

*PLEASE TICK ONE BOX ONLY*

(✔)

… extremely dangerous for the environment, □
   very dangerous, □
   somewhat dangerous, □
   not very dangerous, □
   or, not dangerous at all for the environment? □
   Can’t choose □

15a. If you had to choose, which one of the following would be closest to your views?

*PLEASE TICK ONE BOX ONLY*

(✔)

Government should let ordinary people decide for themselves how to protect the environment, even if it means they don’t always do the right thing □

OR

Government should pass laws to make ordinary people protect the environment, even if it interferes with people’s rights to make their own decisions □
   Can’t choose □

b. And which one of the following would be closest to your views?
ENVIRONMENTAL ATTITUDES AND BEHAVIORS

PLEASE TICK ONE BOX ONLY

(✔) Government should let businesses decide for themselves how to protect the environment, even if it means they don’t always do the right thing

OR

Government should pass laws to make businesses protect the environment, even if it interferes with people’s rights to make their own decisions

Can’t choose

16. Some countries are doing more to protect the world environment than other countries are. In general, do you think that [France] [the USA] is doing …

PLEASE TICK ONE BOX ONLY

(✔) … more than enough,  □

about the right amount, □
or, too little? □

Can’t choose □

17a. Which of these approaches do you think would be the best way of getting business and industry in [France] [the USA] to protect the environment?

PLEASE TICK ONE BOX ONLY

(✔)

Heavy fines for businesses that damage the environment □

Use the tax system to reward businesses that protect the environment □

More information and education for businesses about the advantages of protecting the environment □

Can’t choose □

b. Which of these approaches do you think would be the best way of getting people and their families in [France] [the USA] to protect the environment?

PLEASE TICK ONE BOX ONLY

(✔)

Heavy fines for businesses that damage the environment □

Use the tax system to reward businesses that protect the environment □

More information and education for businesses about the advantages of protecting the environment □

Can’t choose □

18. To which of the following should [France] [the USA] give priority in order to meet its future energy needs?

PLEASE TICK ONE BOX ONLY

(✔)

Coal, oil and natural gas □

Nuclear Power □

Solar, wind or water power □
19. How much do you agree or disagree with each of these statements?

**PLEASE TICK ONE BOX ON EACH LINE**

<table>
<thead>
<tr>
<th>Agree strongly</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Disagree strongly</th>
<th>Can’t choose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. For environmental problems, there should be international agreements that [France] [the USA] and other countries should be made to follow

b. Poorer countries should be expected to make less effort than richer countries to protect the environment

c. Economic progress in [France] [the USA] will slow down unless we look after the environment better

20. How often do you make a special effort to sort glass or tins or plastic or newspapers and so on for recycling?

**PLEASE TICK ONE BOX ONLY**

(✔)

Always □

Often □

Sometimes □

Never □

(Recycling not available where I live) □

b. How often do you make a special effort to buy fruit and vegetables grown without pesticides or chemicals?

**PLEASE TICK ONE BOX ONLY**

(✔)

Always □

Often □

Sometimes □

Never □

(Not available where I live) □

c. And how often do you cut back on driving a car for environmental reasons?
ENVIRONMENTAL ATTITUDES AND BEHAVIORS

**PLEASE TICK ONE BOX ONLY**

(I do not have or cannot drive a car) □

**d. How often do you reduce the energy or fuel you use at home for environmental reasons?**

**PLEASE TICK ONE BOX ONLY**

(✔)
Always □
Often □
Sometimes □
Never □

**e. And how often do you choose to save or re-use water for environmental reasons?**

**PLEASE TICK ONE BOX ONLY**

(✔)
Always □
Often □
Sometimes □
Never □

**f. And how often do you avoid buying certain products for environmental reasons?**

**PLEASE TICK ONE BOX ONLY**

(✔)
Always □
Often □
Sometimes □
Never □

21. Are you a member of any group whose main aim is to preserve or protect the environment?

**PLEASE TICK ONE BOX ONLY**

(✔)
Yes □
No □

22. In the last five years, have you…

**PLEASE TICK ONE BOX ON EACH LINE**

Yes I have □
No I have not □

a. …signed a petition about an environmental issue?

b. …given money to an environmental group?

c. …taken part in a protest or demonstration about an environmental issue?

Optional Items
For each statement below, just tick the box that comes closest to your opinion of how true it is.

<table>
<thead>
<tr>
<th>PLEASE TICK ONE BOX</th>
<th>Definitely true</th>
<th>Probably true</th>
<th>Probably not true</th>
<th>Definitely not true</th>
<th>Can’t choose</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Climate change is caused by a hole in the earth’s atmosphere</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Every time we use coal or oil or gas, we contribute to climate change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Environmental Behaviors and Attitudes Questionnaire: English version

*Note: information in brackets [] only used in survey version distributed to William & Mary students*

Participant Informed Consent Form
College of William and Mary

The purpose of this study is to learn about environmental behavior. Participation will involve completing a set of questionnaires about your personality and answering questions about how you’d behave in certain situations. Participation will take approximately 15 minutes for the questionnaires and 15 minutes for the remaining tasks. Participation is limited to William and Mary students who are at least 18 years old. All data will be confidential. [Initially, your W&M userid (email address) will be used to link your questionnaires.] Once the data collection is complete, identifying information will be removed from the data set, and it will not be possible to link your data to information that identifies you. Your writing will be only be seen by experimenters and research assistants in our lab, and they will keep its contents confidential. No personal risk or harm to participants is expected. You are free to exercise your rights (e.g., you are free to withdraw from the study for any reason, at any time) without negative consequences. Questions about participating in this project may be directed to Dr. Joanna Schug (757-221-3891; jschug@wm.edu). Dissatisfaction with any aspect of this project may be reported to the Chair of the Protection of Human Subjects Committee, Dr. Lee Kirkpatrick (1-855-800-7187, consent@wm.edu). You may print a copy of this form for future reference. This project was found to comply with appropriate ethical standards and was exempted from the need for formal review by the College of William and Mary Protection of Human Subjects Committee (phone 757-221-3966) on February 9, 2013 and expires on February 9, 2014.

What is your full name?

[What is the part of your W&M email address that precedes the @ symbol?]?

If you consent to this study, check the box below. (Please be sure to read the consent form above before answering this question.)
   I consent to participate in this study.
   I do not consent to participate in this study.
This part of the questionnaire will ask about your impressions of other people.

Indicate whether you would have a positive or negative impression of someone who does the following behaviors. Choose the number that you think best applies on a scale of 1 (very negative impression) to 7 (very positive impression).

1. Someone who refuses to buy products that are harmful to the environment.
2. Someone who reuses old things and almost never buys new things.
3. Someone who is meticulous about recycling paper, cans and bottles.
4. Someone who purchases products in reusable or recyclable containers.
5. Someone who walks or rides a bicycle instead of driving whenever possible.
6. Someone who advertises their pro-environmental stance (for example, wearing clothing or using products that display a pro-environmental message).
7. Someone who brings a reusable bag with them when grocery shopping.
8. Someone who turns off lights and appliances to conserve electricity.
9. Someone who will pay extra for environmentally friendly products.
10. Someone who criticizes their friends and family for doing things that harm the environment.

Indicate whether you would have a positive or negative impression of someone who believes the following, on a scale of 1 (very negative impression) to 7 (very positive impression).

1. Someone who feels passionately about environmental issues.
2. Someone who is very worried about irreversible damage to the natural environment.
3. Someone who believes society should invest in clean, safe, and sustainable energy sources.
4. Someone who does not bother with environmental concerns.
5. Someone who thinks humans should live in harmony with nature.
6. Someone who thinks society should encourage nature conservation.
7. Someone who believes humankind should sacrifice economic prosperity to save the environment.
8. Someone who believes pollution is reaching dangerous levels.
9. Someone who believes we must conserve our resources for future generations.
10. Someone who thinks the ultimate solution for environmental problems depends on a drastic change in our lifestyle.
This part of the questionnaire will ask you what you think other people’s opinions are.

Do you think most people (people in your community) would have a positive or negative impression of someone who does the following behaviors? Choose the number that you think best applies on a scale of 1 (most people would have a very negative impression of this person) to 7 (most people would have a very positive impression of this person).

1. Someone who refuses to buy products that are harmful to the environment.
2. Someone who reuses old things and almost never buys new things.
3. Someone who is meticulous about recycling paper, cans and bottles.
4. Someone who purchases products in reusable or recyclable containers.
5. Someone who walks or rides a bicycle instead of driving whenever possible.
6. Someone who advertises their pro-environmental stance (for example, wearing clothing or using products that display a pro-environmental message).
7. Someone who brings a reusable bag with them when grocery shopping.
8. Someone who turns off lights and appliances to conserve electricity.
9. Someone who will pay extra for environmentally friendly products.
10. Someone who criticizes their friends and family for doing things that harm the environment.

Indicate if you think most people (people in your community) would have a positive or negative impression of someone who believes the following, on a scale of 1 (very negative impression) to 7 (very positive impression).

1. Someone who feels passionately about environmental issues.
2. Someone who is very worried about irreversible damage to the natural environment.
3. Someone who believes society should invest in clean, safe, and sustainable energy sources.
4. Someone who does not bother with environmental concerns.
5. Someone who thinks humans should live in harmony with nature.
6. Someone who thinks society should encourage nature conservation.
7. Someone who believes humankind should sacrifice economic prosperity to save the environment.
8. Someone who believes pollution is reaching dangerous levels.
9. Someone who believes we must conserve our resources for future generations.
10. Someone who thinks the ultimate solution for environmental problems depends on a drastic change in our lifestyle.
This part of the questionnaire will ask you about your own behaviors and opinions.

Indicate the extent to which each of the following statements describes yourself personally, on a scale of 1 (doesn’t describe me at all) to 7 (describes me perfectly).

1. I refuse to buy products that are harmful to the environment.
2. I reuse old things and almost never buy new things.
3. I am meticulous about recycling paper, cans and bottles.
4. I purchase products in reusable or recyclable containers.
5. I walk or ride a bicycle instead of driving whenever possible.
6. I wear clothing or use products that display a pro-environmental message.
7. I bring a reusable bag with them when grocery shopping.
8. I turn off lights and appliances to conserve electricity.
9. I will pay extra for environmentally friendly products.
10. I criticize my friends and family for doing things that harm the environment.

Indicate the extent to which each of the following statements describes yourself personally, on a scale of 1 (doesn’t describe me at all) to 7 (describes me perfectly).

1. I feel passionately about environmental issues.
2. I am concerned about irreversible damage to the natural environment.
3. I believe society should invest in clean, safe, and sustainable energy sources.
4. I do not bother with environmental concerns.
5. I think humans should live in harmony with nature.
6. I think society should encourage nature conservation.
7. I believe humankind should sacrifice economic prosperity to save the environment.
8. I think we are increasingly less involved in the important decisions that govern our lives.
9. I believe pollution is reaching dangerous levels.
10. I believe society ought to pay relatively little attention to law and order.
11. I think the government ought to control public property
12. I think pay levels should relate to people’s skills and education level
13. I believe people should be judged on their personal qualities.
14. I think that society ought to be governed by laws.
15. I think the government ought to be in charge of protecting people.
16. I believe we must conserve our resources for future generations.
17. I think society should slow down economic growth.
18. I think society ought to guarantee a minimum standard of living for everyone.
19. I believe people should be judged on their achievements.
20. I think society should be based on the opinions of its members.
21. I think the ultimate solution for environmental problems depends on a drastic change in our lifestyle.
22. I act environmentally responsible because it’s important to me.
23. According to my personal values, harming the environment is okay.
24. I am personally motivated by my beliefs to be environmentally responsible.
25. Because of my personal values, I believe that it is wrong to harm the environment.
26. Being environmentally responsible is important to my self-concept.
27. Because of society’s increasing awareness of harm to the environment, I try to appear environmentally responsible.
28. I try to hide any of my actions that harm the environment in order to avoid negative reactions from others.
29. If I acted environmentally irresponsible, I would be concerned that others would be angry with me.
30. I attempt to appear environmentally-conscious in order to avoid disapproval from others.
31. I try to act in an environmentally responsible way because of pressure from others.

Answer the following questions about environmental knowledge.

1. Soil pollution is generally due to:
   a. Sparse rains
   b. Improper farming methods
   c. Poisonous metals
   d. Over-fertilization
   e. Poor crop rotation
2. Mercury has been found at unacceptable levels in:
   a. Fruit
   b. Vegetables
   c. Seafood
   d. Beef
   e. Soft drinks
3. Which of the following does not appreciably reduce the pollution by automobiles?
   a. Properly tuned engine
   b. High octane gas
   c. Low lead gas
   d. Smog control devices
   e. Propane engines
4. The most common pollutants of water are:
   a. Arsenic, silver nitrates
   b. Hydrocarbons
   c. Carbon monoxide
   d. Sulphur, calcium
   e. Nitrates, phosphates
5. Ecology is best described as the study of:
   a. The relationship between man and the environment
   b. The relationship between organisms and the environment
   c. Pollution and its control
   d. The environment
   e. Recycling of products
6. Which of the following materials usually takes longest to decompose?
   a. Tin
   b. Iron
   c. Copper
d. Aluminum  
e. Steel  
7. Birds and fish are poisoned by:  
a. Iron  
b. Mercury  
c. Silver  
d. Lead  
e. Magnesium  
8. All but one of the following decompose in ocean water:  
a. Sewage  
b. Garbage  
c. Tin cans  
d. Plastic bags  
e. Chemical fertilizer  
9. What is the harmful effect of phosphates on marine life?  
a. Causes cancer  
b. Renders fish sterile  
c. Induces nervous reactions in fish  
d. Makes H₂O cloudy  
e. Feeds algae  
10. DDT takes how long to deteriorate into harmless chemicals:  
a. It never does  
b. 10-20 months depending on the weather  
c. About 200 years  
d. About 400 years  
e. Anywhere from several days to several years  
11. What is the primary cause of recently measured increases in Earth’s temperature?  
a. Increased output from the sun  
b. Changes in the Earth’s orbit  
c. The atmospheric “ozone hole”  
d. Increased levels of carbon dioxide gas in the atmosphere  
12. Which one of the following foods requires the most water to grow or raise for a typical serving?  
a. Cereal grains  
b. Beef  
c. Melons  
d. Leafy vegetables such as lettuce or spinach  
13. Approximately how much of the water on Earth is considered fresh water?  
a. Less than 5 percent  
b. Between 5 percent and 10 percent  
c. Between 10 percent and 20 percent  
d. More than 20 percent  
14. In conventional gasoline-powered cars, approximately how much of the energy in gasoline is used to propel the car?  
a. 1 percent or less  
b. 15 percent
Please fill out the following demographic information.

1. Age
   a. 18-20
   b. 21-22
   c. 23-25
   d. Older than 25

2. Year in college:
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior
   e. Graduate student

3. Please write your major(s) and minor, if applicable:

4. Please describe your racial/ethnic background

5. Gender (check all that apply):
   a. Male
   b. Female
   c. Other

6. Please write your race(s):

7. Overall political views:
   a. Very liberal
   b. Liberal
   c. Moderate
   d. Conservative
   e. Very conservative

8. Social political views (on issues like immigration and same-sex marriage)
   a. Very liberal
   b. Liberal
   c. Moderate
   d. Conservative
   e. Very conservative

9. Fiscal political views (on issues like taxes and welfare)
   a. Very liberal
   b. Liberal
   c. Moderate
   d. Conservative
   e. Very conservative

10. Where were you born? (city and state)

11. Where did you grow up? (city and state)

12. Before moving to college, how many times did you move residences (only count moves that required you to change schools after the age of 5)?
Appendix C

Environmental Behaviors and Attitudes Questionnaire: French version

Formulaire de Consentement pour les Participants
L’université de William et Mary

Merci pour votre participation dans cette étude. L’étude consiste en un questionnaire qui vous demandera vos impressions sur les opinions et les actions des autres à propos de l’environnement, vos propres opinions, actions et connaissances environnementales, ainsi que des informations personnelles. L’étude est menée dans le cadre d’une thèse universitaire par Alix Kashdan et Joanna Schug dans le Département de Psychologie à William & Mary. En signant ce formulaire, je comprends que je vais répondre à des questions personnelles sur mes impressions des autres et mon propre comportement. Mes réponses resteront confidentielles et mon nom ne sera pas associé à mes réponses. Ma participation ne devrait pas prendre plus de 20 minutes. J’ai la liberté de choisir de ne pas répondre, et peux arrêter ma participation à l’étude à tout moment. Je comprends que les risques impliqués sont minimums. Les questions sur cette recherche devraient être dirigées à Alix Kashdan à agkashdan@email.wm.edu. Les questions ou préoccupations au sujet de la participation à cette recherche devraient être dirigées à Professeur Joanna Schug à jschug@wm.edu ou à Professeur Lee Kirkpatrick à consent@wm.edu. J’ai au moins 18 ans et ma participation dans cette étude est volontaire. En tapant mon nom ci-dessous, j’accepte de participer et ai lu toutes les informations sur ce formulaire.
Dans cette partie du questionnaire, on vous demandera vos impressions des autres.

**Indiquez votre réaction, positive ou négative, lorsque quelqu’un fait les actions suivantes.** Choisissez le numéro qui convient le mieux sur une échelle de 1 (une impression très négative) à 7 (une impression très positive).

1. Quelqu’un qui refuse d’acheter des produits mauvais pour l’environnement.
2. Quelqu’un qui réutilise et n’achète presque jamais de nouvelles choses.
3. Quelqu’un qui recycle méticuleusement le papier, les boîtes de conserve, et les bouteilles.
4. Quelqu’un qui achète des produits dans des récipients qui peuvent être réutilisés ou recyclés.
5. Quelqu’un qui marche ou fait du vélo au lieu de conduire, quand c’est possible.
6. Quelqu’un qui montre sa position en faveur de l’environnement (par exemple, en portant des vêtements ou en utilisant des produits qui montrent un message en faveur de l’environnement).
7. Quelqu’un qui porte un sac réutilisable avec lui pendant qu’il fait les cours.
8. Quelqu’un qui éteint les lumières et les appareils électriques, quand ils ne sont pas utilisés, pour conserver l’électricité.
9. Quelqu’un prêt à dépenser plus pour les produits bons pour l’environnement.
10. Quelqu’un qui critique ses amis et sa famille quand ils font des activités nocives pour l’environnement.

**Indiquez l’impression que vous auriez sur quelqu’un qui croit ce qui suit, sur une échelle de 1 (une impression très négative) à 7 (une impression très positive).**

1. Quelqu’un qui est passionné de l’environnement et de ses problèmes.
2. Quelqu’un de très inquiet au sujet des dégâts irréversibles causés sur l’environnement.
3. Quelqu’un qui croit que la société doit investir dans les sources d’énergie qui sont non polluantes, sans dangers, et renouvelables.
4. Quelqu’un qui ne prête pas attention aux inquiétudes environnementales.
5. Quelqu’un qui pense que les humains devraient vivre en harmonie avec la nature.
6. Quelqu’un qui pense que la société doit encourager la protection de la nature.
7. Quelqu’un qui croit que les humains doivent sacrifier la prospérité économique pour sauver l’environnement.
8. Quelqu’un qui croit que la pollution en est arrivée à un niveau dangereux.
9. Quelqu’un qui croit que nous devons sauvegarder nos ressources pour les générations futures.
10. Quelqu’un qui pense que la solution ultime pour les problèmes environnementaux impliquera un changement drastique dans notre style de vie.
Dans cette partie du questionnaire, on vous demandera ce que vous pensez de ce que sont les opinions des autres.

Est-ce que vous pensez que la plupart des personnes (vos amis et connaissances) aurait une **impression positive ou négative de quelqu’un qui fait les actions suivantes** ? Choisissez le numéro qui correspond le mieux sur une échelle de 1 (la plupart des personnes aurait une impression très négative de cette personne) à 7 (la plupart des personnes aurait une impression très positive de cette personne).

1. Quelqu’un qui refuse d’acheter des produits mauvais pour l’environnement.
2. Quelqu’un qui réutilise et n’achète presque jamais de nouvelles choses.
3. Quelqu’un qui recycle méticuleusement le papier, les boîtes de conserve, et les bouteilles.
4. Quelqu’un qui achète des produits dans des récipients qui peuvent être réutilisés ou recyclés.
5. Quelqu’un qui marche ou fait du vélo au lieu de conduire, quand c’est possible.
6. Quelqu’un qui montre sa position en faveur de l’environnement (par exemple, en portant des vêtements ou en utilisant des produits qui montrent un message en faveur de l’environnement).
7. Quelqu’un qui porte un sac réutilisable avec lui pendant qu’il fait les cours.
8. Quelqu’un qui éteint les lumières et les appareils électriques, quand ils ne sont pas utilisés, pour conserver l’électricité.
9. Quelqu’un prêt à dépenser plus pour les produits bons pour l’environnement.
10. Quelqu’un qui critique ses amis et sa famille quand ils font des activités nocives pour l’environnement.

Indiquez si vous pensez que la plupart des personnes (vos amis et connaissances) aurait une **impression positive ou négative de quelqu’un qui croit ce qui suit, sur une échelle de 1 (une impression très négative) à 7 (une impression très positive)**.

1. Quelqu’un qui est passionné de l’environnement et de ses problèmes.
2. Quelqu’un de très inquiet au sujet des dégâts irréversibles causés sur l’environnement.
3. Quelqu’un qui croit que la société doit investir dans les sources d’énergie qui sont non polluantes, sans dangers, et renouvelables.
4. Quelqu’un qui ne prête pas attention aux inquiétudes environnementales.
5. Quelqu’un qui pense que les humains devraient vivre en harmonie avec la nature.
6. Quelqu’un qui pense que la société doit encourager la protection de la nature.
7. Quelqu’un qui croit que les humains doivent sacrifier la prospérité économique pour sauver l’environnement.
8. Quelqu’un qui croit que la pollution en est arrivée à un niveau dangereux.
9. Quelqu’un qui croit que nous devons sauvegarder nos ressources pour les générations futures.
10. Quelqu’un qui pense que la solution ultime pour les problèmes environnementaux impliquera un changement drastique dans notre style de vie.
Dans cette partie du questionnaire, on vous posera des questions sur vos propres comportements et avis.

Indiquez dans quelle mesure chacun des phrases suivantes vous décrit, sur une échelle de 1 (ne me décrit pas du tout) à 7 (me décrit parfaitement).

2. Je réutilise et n’achète presque jamais de nouvelles choses.
4. J’achète des produits dans des récipients qui peuvent être réutilisés ou recyclés.
5. Je marche ou fais du vélo au lieu de conduire, quand c’est possible.
7. J’apporte un sac réutilisable avec moi pendant que je fais les cours.
9. Je suis prêt(e) à dépenser plus pour les produits bons pour l’environnement.
10. Je critique mes amis et ma famille quand ils font des activités nocives à l’environnement.

Indiquez dans quelle mesure chacun des phrases suivantes vous décrit, sur une échelle de 1 (ne me décrit pas du tout) à 7 (me décrit parfaitement).

1. Je suis passionné(e) de l’environnement et de ses problèmes.
2. Je suis très inquiet(e) au sujet des dégâts irréversibles causés sur l’environnement.
3. Je crois que la société doit investir dans les sources d’énergie qui sont non polluantes, sans dangers, et renouvelables.
4. Je ne prête pas attention aux inquiétudes environnementales.
5. Je pense que les humains doivent vivre en harmonie avec la nature.
6. Je pense que la société doit encourager la protection de la nature.
7. Je crois que les humains doivent sacrifier la prospérité économique pour sauver l’environnement.
8. Je pense que nous sommes de moins en moins impliqués dans les décisions importantes qui gouvernent nos vies.
9. Je crois que la pollution est vers les niveaux dangereux.
10. Je crois que la société doit prêter relativement moins d’attention à la loi et l’ordre.
11. Je crois que le gouvernement doit contrôler la propriété publique.
12. Je pense que les salaires doivent être relatifs aux habiletés et niveaux d’éducation des personnes.
13. Je crois que les personnes doivent être jugées sur leurs qualités personnelles.
14. Je pense que la société doit être gouvernée par des lois.
15. Je pense que le gouvernement doit être responsable de la protection des personnes.
16. Je crois que nous devons sauvegarder nos ressources pour les générations futures.
17. Je pense que la société doit ralentir l’expansion économique.
18. Je pense que la société doit garantir un niveau minimum de vie pour tout le monde.
19. Je crois que les personnes doivent être jugées sur leurs réussites.
20. Je pense que la société doit être basée sur les opinions de ses citoyens.
21. Je pense que la solution ultime pour les problèmes environnementaux impliquera un changement drastique dans notre style de vie.
22. Agir en personne responsable pour l’environnement est important pour l’image que j’ai de moi.
23. Selon mes valeurs personnelles, il est acceptable de nuire à l’environnement.
24. Mes convictions personnelles me motivent à être responsable écologiquement.
25. Mes valeurs personnelles m’incitent à penser que ce n’est pas bien de faire mal à l’environnement.
26. Être responsable écologiquement est important pour l’image que j’ai de moi.
27. La société se sentant de plus en plus concernée par les problèmes environnementaux, j’essaie de paraître responsable écologiquement.
29. Si j’ai agi de façon irresponsible écologiquement, j’aurais peur de fâcher les gens.
30. J’essaie d’apparaître conscient écologiquement, afin de pouvoir éviter la désapprobation des autres.
31. J’essaie d’agir d’une façon responsable écologiquement à cause de la pression des autres.

Répondez aux questions suivantes sur la connaissance environnementale.

1. La pollution du sol est généralement causée par :
   a. Trop peu de pluie
   b. L’agriculture abusive
   c. Les métaux toxiques
   d. Trop de fertilisation
   e. La mauvaise rotation des cultures
2. Du mercure a été trouvé à un niveau dans :
   a. Les fruits
   b. Les légumes
   c. Les fruits de mer
   d. Le bœuf
   e. Les sodas
3. Laquelle des déclarations qui suit ne réduit pas de façon significative la pollution causée par les voitures ?
   a. Un moteur réglé correctement
   b. Un indice élevé de gaz à octane
   c. Un indice peu élevé de gaz de plomb
   d. Les appareils de contrôle du nuage de pollution
   e. Les moteurs à propane
4. Les polluants de l’eau les plus courants sont :
   a. L’arsenic, les nitrates d’argent
   b. Les hydrocarbures
   c. Le monoxyde de carbone
   d. Le soufre, le calcium
   e. Les nitrates, les phosphates
5. La meilleure description de l’écologie est l’étude de :
   a. La relation entre les personnes et l’environnement
   b. La relation entre les organismes et l’environnement
   c. La pollution et le contrôle de la pollution
   d. L’environnement
   e. Le recyclage des produits

6. Lequel des matériaux suivent prend le plus de temps pour se décomposer ?
   a. L’étain
   b. Le fer
   c. Le cuivre
   d. L’aluminium
   e. L’acier

7. Les oiseaux et les poissons sont empoisonnés par :
   a. Le fer
   b. Le mercure
   c. L’argent
   d. Le plomb
   e. Le magnésium

8. Toutes sauf une des choses suivent se décomposent dans l’océan :
   a. Les eaux usées
   b. Les ordures
   c. Les boîtes de conserve
   d. Les sacs plastiques
   e. L’engrais chimique

9. Quel est l’effet nocif des phosphates sur la vie marine ?
   a. Cause du cancer
   b. Entraîne la stérilité des poissons
   c. Provoquent les réactions nerveuses chez poissons
   d. Rend l’eau trouble
   e. Nourrit les algues

10. Combien de temps prend le DDT à dégénérer en produits chimiques inoffensifs :
    a. Il ne le jamais faire
    b. 10-20 mois, en fonction du temps
    c. Environ 200 ans
    d. Environ 400 ans
    e. Entre plusieurs jours à plusieurs ans

11. Quelle est la cause primaire des augmentations récemment mesurées dans la température de la Terre ?
    a. Plus de rendement du soleil
    b. Les changements dans l’orbite de la Terre
    c. Le trou de la couche d’ozone dans l’atmosphère
    d. L’augmentation du niveau de dioxyde de carbone dans l’atmosphère

12. Lequel des aliments suivants besoin de la plupart de l’eau de cultiver pour une portion normale ?
    a. Les céréales
    b. Le boeuf
c. Les melons
d. Les légumes à feuilles (par exemple la laitue ou les épinards)

13. Approximativement quel est le pourcentage d’eau douce sur Terre ?
   a. Moins de 5 pour-cent
   b. Entre 5 pour-cent et 10 pour-cent
   c. Entre 10 pour-cent et 20 pour-cent
   d. Plus de 20 pour-cent

14. Dans une voiture propulsée par l’essence, approximativement combien d’énergie dans l’essence est vraiment utilisée pour propulser la voiture ?
   a. 1 pour-cent ou moins
   b. 15 pour-cent
   c. 30 pour-cent
   d. 50 pour-cent

Remplissez les informations démographiques suivantes.

1. Age
   a. 18-20
   b. 21-22
   c. 23-25
   d. 25 et plus

2. Année à l’université
   a. Première année
   b. Deuxième année
   c. Troisième année
   d. Master 1
   e. Master 2

3. Indiquez votre spécialisation :

4. Indiquez votre/vos pays d’origine :

5. Sexe (marquez tous qui s’appliquent) :
   a. Masculin
   b. Féminin
   c. Autre

6. Opinions politiques générales
   a. Extrême gauches
   b. Gauches
   c. Modérées
   d. Droits
   e. Extrême droits

6. Opinions politiques sociales (par exemple sur les questions de l’immigration ou le mariage homosexuel)
   a. Extrême gauches
   b. Gauches
   c. Modérées
   d. Droits
e. Extrême droits

7. Opinions politiques fiscales (sur les questions comme les taxes ou les aides de l’état par exemple)
   a. Extrême gauches
   b. Gauches
   c. Modérées
   d. Droits
   e. Extrême droits

9. Où êtes-vous né(e) (la ville et département) ?

10. Où avez-vous grandi (la ville et le département) ?

11. Avant l’âge de dix-huit ans, combien de fois avez-vous déménagé (comptez seulement les déménagements qui ont vous obligé a changer d’écoles après l’age de 5 ans) ?