

Our Cars, Our Environment: A Cross-Cultural Investigation Into
Environmentalism and Car Pollution Beliefs

Rochelle M. Smith

Advisor: Amy Marcus-Newhall, Ph.D.

Scripps College

Abstract

This study used the Myths of Nature Scale (Schwarz & Thompson, 1990) and an Environmental Beliefs Scale (Steg & Seivers, 2000) to investigate differences in ideas about car use between France and the United States. General environmental beliefs were determined by the Personal Myths of Nature Scale, which consists of one-sentence statements that characterize values/beliefs about our natural world. Feelings of responsibility, problem awareness, and feelings of efficacy were determined by a thirteen-item environmental belief scale on car pollution (Steg & Seivers). It was hypothesized that Americans would score higher on the Environmental Beliefs Scale, and that Nature Ephemeralists, people who believe that environmental problems can only be controlled by enforcing radical changes in society and behavior, would score the highest of the four Myths of Nature. Results for nationality contradict the findings from the only existing research conducted using both French and American populations, which found the French to be less environmental than Americans (Arbuthnot & Lingg, 1975). This pattern of results suggests that the French population may be demonstrating a major change in environmental beliefs. Other hypotheses, results, and implications are discussed.

Our Cars, Our Environment: A Cross-Cultural Look at Environmentalism and
Car Pollution Beliefs

In the last fifty years, our environment, and the degradation inflicted upon it by human pollution, has been a topic of widespread debate (Reay, 2002). Technological changes continue to make environmentally friendly choices more conceivable and realistic. However, public transportation, while exceptional in some major metropolitan cities, such as New York and Paris, is inadequate in Los Angeles, making the use of personal motor vehicles the most viable option for transportation. Unfortunately, tailpipe emissions continue to make up almost one third of the earth's air pollution (EPA, 1999). Despite personal inconvenience and/or cost, there are those who continue to make environmentally safe choices in transportation (e.g., using a bicycle, or public transportation). The purpose of the current study is to look at the connection between environmental beliefs and awareness of pollution, feelings of responsibility for the current environmental circumstances, efforts to curb car pollution, and how these variables differ in France and the United States.

Research so far has ignored motor vehicle use as an aspect of environmentalism, with the exception of Steg and Seivers (2000). Their study investigated the connection between personal Myths of Nature, a one-sentence statement that characterizes value/belief systems about the natural world, and the use of motor vehicles in the Netherlands. The Netherlands is a unique population because it has one of the lowest car ownership figures in the western world, maintaining 2.6 people per car in 1999 (Ward's Communications, 2001). The current study proposes to compare the other end of the spectrum, the United States, with the highest rate of car ownership (1.46 persons per car; Ward's Communications, 2001) to France, a country with a relatively average rate of car ownership (2.1 persons per car; Ward's Communications, 2001).

Investigating these two countries will allow us to see if car ownership affects beliefs about car use and pollution.

A unique aspect of the research conducted by Steg and Seivers (2000) was their use of the Myths of Nature Scale (Schwarz & Thompson, 1990), a set of four statements characterizing values/beliefs about the natural world. The reason for implementing the Myths of Nature in this study was because this measure deals specifically with environmental values/beliefs, rather than general value systems. Steg and Seivers (2000) also used an Environmental Beliefs Scale that assessed specific beliefs about car use/pollution. This is not found anywhere else in the literature, since Steg and Seivers (2000) are the only researchers who have conducted a study on both environmental values and car pollution. As such, this is the only measure currently available to assess car pollution beliefs.

Values and beliefs, like Myths of Nature in Steg and Seivers (2000), have been shown to positively influence environmentalism (e.g., Seligman, Syme, & Gilchrist, 1994). Studies have shown how different value systems influence environmental behaviors. However, exactly how values and beliefs translate into action is unknown. In looking at the application of general values in a specific context (the environment), Seligman et al. (1994) asked participants to rank order a set of 21 values (e.g., happiness, health, preservation) for general importance, and then to rank order the same 21 values in terms of the environment. They found that the relative importance of different values changed, with the top three in general being happiness, health, and self-respect. Yet, within an environmental context, the top three values were conservation, preservation, and world at peace. While it may seem obvious that general values would not be the same as environmental values, it does suggest that there are many value systems, each with their own domain. It was also found that within a domain, such as environmentalism, the

relative importance of different values do not differ significantly between subcategories of environmentalism. For example, one can expect general environmental values/beliefs to extend to specific beliefs about car use since car pollution is a subcategory pertaining to the environment.

Even though there has been a growing body of environmental psychology research on values, there has been little environmental research concerning French populations and no research on their automobile use and car pollution beliefs. There have been only two studies that include a French population in comparison to other countries in terms of environmentalism. Arbuthnot and Lingg (1975) directly compared American and French environmental behaviors, knowledge, and attitudes. Using door-to-door solicitation, participants were asked about their environmental knowledge, their participation in environmental behaviors (e.g., recycling), their attitudes in politics, and their values. They found that the French were more concerned than Americans with the economic gain of any given behavior than of future consequences to the environment. In addition, the study revealed that the French relied on technology to solve problems more than they endorsed government control of pollution. The study revealed that the French were more likely to endorse the use of technology to solve environmental problems than to support government control of pollution.

In a more recent study, Lévy-Leboyer, Bonnes, Chase, Ferraira-Marques, and Pawlik (1996) compared five countries (France, Germany, Italy, Portugal, and the UK) and used a questionnaire to assess attitudes and behavior concerning environmental issues. They found that the French sample had the lowest objective knowledge, environmental attitudes, and behavior of all five countries. For the present study, this indicates that the French sample may be more likely

to self identify with the Nature Benign or the Nature Capricious myths, because both myths suggest that there is no value in changing one's behavior to save the environment.

Both Arbuthnot and Lingg (1975) and Lévy-Leboyer, et al. (1996), have shown a lack of pro-environmental behavior among the French population. Yet, there has been change in the political atmosphere of France since these studies were conducted. In 1997, Les Verts [The Green Party], a political party with a pro-environmental platform, became part of mainstream French government one year after the previous study (Webster, 1997). While this may be indicative of an increased general awareness among the French population, the present study assumes that this potential new awareness has not yet translated into action. This assumption is based on research by Lévy-Leboyer, et al. (1996), which showed the French population has the lowest rate of pro-environmental behavior, the least pro-environmental attitude and knowledge.

Because past research has shown Americans to be more environmental than the French (Arbuthnot and Lingg, 1977), a main effect was hypothesized such that the American population will be more likely than the French population to see car use as a problem, their to see efforts as useful, and to feel personally responsible for the problem.

A main effect also was hypothesized such that those who self identify as Nature Ephemeral will score the highest on all subscales of the environmental belief scale. Nature Perverse/Tolerant will be lower than Nature Ephemeral, and higher than both Nature Benign and Capricious. Nature Benign and Capricious will not differ from one another. These hypotheses are based on research by Steg and Seivers (2000) who found Nature Perverse/Tolerant to be less environmental than Nature Ephemeral, but more environmental than Nature Capricious and Nature Benign.

An interaction was hypothesized such that in the conditions of Nature Perverse/Tolerant and Nature Ephemeral, the Americans will score higher than the French on the Environmental Beliefs Scale. Under the condition of Nature Capricious, there will be no difference between French and Americans, and under the condition of Nature Benign, there will be no discernable difference between French and Americans. Furthermore, for the American population, Nature Ephemeral will score significantly higher on the Environmental Beliefs Scale than Nature Perverse/Tolerant, Nature Benign, and Nature Capricious. Nature Perverse Tolerant will score significantly higher than both Nature Benign and Nature Capricious. Nature Benign and Nature Capricious will not differ significantly from one another.

For the French population, only Nature Ephemeral will score significantly higher than the other conditions. Nature Perverse/Tolerant, Nature Benign, and Nature Capricious will not differ from each other. There has not been research using the Myths of Nature with these two populations. Therefore, to support this interaction hypothesis I would assert that because Steg and Seivers (2000) found Nature Ephemeral and Nature Benign to be the most environmental, under these conditions, the American population, found to be more environmental than the French (Arbuthnot & Lingg, 1975), will be significantly more environmental than the French population in the same conditions. Whereas there will be no differences between the groups under the conditions of Nature Benign and Nature Capricious (see Figure 1).

Method

Participants

University students from the Claremont Colleges comprised the participants for the United States sample (N= 142), and students at the University in Marseille (N= 149) comprised the French sample. Students were randomly approached in dining halls and asked to complete a

questionnaire. All participants were 18 years of age or older. Participants were not compensated for their participation.

Measures

A questionnaire was used to assess the personal “Myths of Nature,” and the participants’ views on car pollution (awareness, efforts useful, and responsibility) by asking participants to circle one of the four statements (Myths of Nature) that best corresponded with their beliefs (see Appendix A). In addition, participants’ personal awareness, feelings of efficacy, and responsibility for the problem of car pollution were assessed using Steg and Seiver’s (2000) Environmental Beliefs Scale (see Appendix B), which contains 13 statements that are rated on a Likert scale (1= Strongly disagree to 5= Strongly agree).

Design and Procedure

Questionnaires were handed out and collected in dining halls at the Claremont Colleges, and at the University in Marseille. The students were given the questionnaire in their language (French/English). The introductory paragraph informed students that the questionnaire was completely anonymous and that they could stop at any time. Students were then asked to identify with one of four statements that determined their personal “myth of nature” (an independent variable). The rest of the survey was a questionnaire pertaining to awareness of car pollution as a problem, if they think efforts to solve this problem are useful, and their personal feelings of responsibility.

A 2 x 4 between-subjects design was used. The independent variables were country of residence (France/United States), and personal Myth of Nature (Ephemeral, Benign, Perverse/Tolerant, and Capricious). The dependent variables were scores for the subscales of the

environmental beliefs surrounding car use scale (personal responsibility, efforts useful, and problem awareness).

Results

Awareness Subscale

A one-way analysis of variance (ANOVA) was done on the awareness subscale, as shown in Table 1, a main effect found for Myth of Nature, ($F(3, 283) = 13.16, p < .01$). The strength of the relationship, as indexed by η^2 , was .12. A Tukey HSD test indicated that those in the condition of Nature Ephemeral were more aware of car pollution than Natures Perverse/Tolerant, Benign, and Capricious. However, participants in Nature Perverse/Tolerant were marginally more aware of car pollution than participants in Nature Capricious. Thus, the hypothesis that Nature Ephemeral would be the most aware of car pollution compared to the other Myths of Nature was supported, as well as the prediction that participants in Nature Perverse/Tolerant would be more aware than those in Nature Capricious.

An interaction was found between nationality and Myth of Nature (see Figure 2; $F(3, 283) = 3.05, p < .01$). For the Americans, post-hoc analyses revealed an effect of Myth of Nature ($F(3, 138) = 14.36, p < .01$). The strength of the relationship as indexed by η^2 , was .24. The only difference found between conditions for the American sample was that participants in Nature Ephemeral were more aware of car pollution than participants in Natures Perverse/Tolerant, Benign, and Capricious. For the French sample, post-hoc analyses revealed a marginal significance of nature myth ($F(3, 145) = 2.53, p < .10$). The strength of the relationship as indexed by η^2 , was .05. The only difference found was that participants in the condition of Nature Ephemeral were marginally more aware of car pollution than participants in the condition of Nature Capricious. Interestingly, the only differences between French and Americans on the

awareness subscale occurred for those who identified as Nature Ephemeral, ($t(164) = 3.11, p < .01$). Therefore, the predicted interaction was not supported.

Efforts Useful Subscale

For the efforts useful subscale, as shown in table 2, a main effect found for Myth of Nature ($F(3, 283) = 17.53, p < .01$). The strength of the relationship, as indexed by η^2 , was .16. A Tukey HSD test indicated that participants in the condition of Nature Ephemeral felt their efforts to reduce car pollution were more useful than participants in Natures Perverse/Tolerant, Benign, and Capricious. In addition, participants in the condition of Nature Perverse/Tolerant felt their efforts to curb car pollution were more useful than those in the condition of Natures Benign and Capricious. Thus, the hypotheses were supported that Nature Ephemeral would be the most environmental, that Nature Perverse/Tolerant would be more environmental than Natures Benign and Capricious, and that there would be no difference between Natures Benign and Capricious. However, unfortunately, no interaction was found

Responsibility Subscale

On the responsibility subscale, as shown on table 3, a main effect was found for Myth of Nature ($F(3, 283) = 5.70, p < .01$). The strength of the relationship, as indexed by η^2 , was .06. The only differences found between conditions was that participants in the condition of Nature Ephemeral felt more responsible for car pollution than participants in the condition of Natures Perverse/Tolerant and Capricious. Therefore, on this subscale, the hypothesis that Nature Ephemeral would score significantly higher than all other Myths of Nature was not supported. However, Natures Benign and Capricious, as predicted, did not differ from each other.

An interaction was found between nationality and Myth of Nature (see Figure 3; $F(3, 283) = 2.89, p < .01$). Post-hoc analyses revealed an effect of Myth of Nature for the Americans

($F(3, 138) = 3.94, p < .01$). The strength of the relationship as indexed by η^2 , was .08. The only difference between conditions for Americans was that participants in the condition of Nature Ephemeral felt more responsible for car pollution than participants in the condition of Nature Perverse/Tolerant. For the French, post-hoc analyses revealed a marginal significance of Myth of Nature ($F(3, 145) = 3.83, p < .05$). The strength of the relationship as indexed by η^2 , was .07. Participants in the condition of Nature Ephemeral felt more responsible for car pollution than participants in the condition of Nature Capricious, but did not differ from those in Natures Perverse/Tolerant or Benign. Participants in the condition of Nature Perverse/Tolerant felt more responsible for car pollution than participants in the condition of Nature Capricious. Differences were found between French and Americans. In the condition of Nature Perverse/Tolerant, Americans felt marginally less responsible for car pollution than the French ($t(102) = -1.76, p < .10$). For the participants in the Nature Capricious group, Americans felt more responsible for car pollution than the French ($t(11) = 2.78, p < .05$). No differences were found for the conditions of Nature Ephemeral or Nature Benign. Consequently, the predicted interaction was not found.

Composite Environmental Beliefs Scale

A main effect, as shown on table 4, was found for Myth of Nature ($F(3, 283) = 17.36, p < .01$). The strength of the relationship, as indexed by η^2 , was .16. A Tukey HSD test indicated that participants in the condition of Nature Ephemeral were more environmental than participants in Natures Perverse/Tolerant, Benign, and Capricious. Participants in the condition of Nature Perverse/Tolerant were found to be more environmental than participants in the condition of Nature Capricious and marginally more environmental than participants in the condition of Nature Benign. Participants in the condition of Nature Benign did not differ from participants in the condition of Nature Capricious. So, the hypothesis that the Nature Ephemeral group would be

the most environmental was supported, as well as Nature Perverse/Tolerant being more environmental than both Nature Benign and Nature Capricious.

A marginally significant interaction was found between nationality and Myth of Nature (see Figure 4; $F(3, 283) = 2.18, p < .10$). Post-hoc analyses revealed an effect of Myth of Nature for the Americans ($F(3, 138) = 12.07, p < .01$). The strength of this relationship as indexed by η^2 , was .21. The only difference between conditions for Americans was that participants in the condition of Nature Ephemeral were found to be more environmental than participants in Natures Perverse/Tolerant, Benign, and Capricious. For the French, post-hoc analyses revealed a marginal significance of Myth of Nature ($F(3, 145) = 7.19, p < .01$). The strength of the relationship as indexed by η^2 , was .13. French participants in the condition of Nature Ephemeral were more environmental than those in Natures Benign and Capricious. Participants in the condition of Nature Perverse/Tolerant were only more environmental than participants in the condition of Nature Capricious. Independent samples t-tests were performed between French and Americans for each of the Myths of Nature. The only differences between groups was that in the condition of Nature Perverse/Tolerant, Americans were found to be marginally less environmental than the French ($t(102) = -1.74, p < .10$). Hence, the predicted interaction was not found.

Discussion

Previous findings that have shown the French to be less environmental than Americans, as well as four other countries in Europe (Arbuthnot & Lingg, 1975; Lévy-Leboyer et al., 1996) were not supported by this study. Contrary to past research, French and Americans did not differ in environmental beliefs. One possible explanation for these disparate findings is the changing political situation in France. Dominique Voynet, the head of Les Verts [The Green Party] in

France, was appointed as the Minister of the Environment in 1997 (Webster, 1997), which may have changed the views of the French public. Therefore, despite past research, this governmental change may be indicative of the changing beliefs within the French population. However, another explanation for the lack of difference between the French and American populations is that Americans may have become less environmental. While there has been no research to suggest this, future research should attempt to investigate if any change has taken place. Future research also should investigate how environmental beliefs as a whole, not just those surrounding car pollution, have changed in France.

This study did find, however, mixed results when it came to the effect of Myth of Nature. On the awareness subscale, participants in Nature Perverse/Tolerant were not more aware of the effects of car pollution than those in Nature Benign, and were only marginally more aware than those in Nature Capricious, even though it was predicted that Nature Perverse/Tolerant would be more aware than both Nature Benign and Capricious. Furthermore, on the responsibility subscale, participants in the Nature Ephemeral condition did not feel more responsible than those in the Nature Benign condition. Since the results that contradict the hypotheses all include either Nature Benign or Nature Capricious, lack of support may be because there were very few participants in the groups of Nature Benign and Nature Capricious (N=8 and N=13, respectively). Hence, there may not be sufficient power to observe differences, and/or the groups may not be representative of their populations. What this may also indicate is that Natures Benign and Capricious are not able to capture the sentiments of the population under study, considering merely 21 participants out of 291 identified with these myths.

On the other hand, predictions were supported on the efforts useful subscale and the composite Environmental Beliefs Scale such that participants in Nature Ephemeral felt their

efforts to curb car pollution were the most useful and were the most environmental of all the Myths of Nature. Nature Perverse/Tolerant felt their efforts were less useful, and were less environmental than Nature Ephemeral. Nature Benign and Capricious felt their efforts were less useful, and were less environmental than Nature Perverse/Tolerant. Natures Benign and Capricious did not differ from one another. These findings support past research by Steg and Seivers (2000), which means that the relationship between nature myths for feelings of efficacy, and for overall environmental beliefs may be the same in the Netherlands, as in the current population under study; however, further research is needed to be able to show this connection. Interestingly, unlike the effect of Myth of Nature, none of the interactions were as predicted.

The interactions that were found cannot be explained by the literature currently available, therefore the findings are anomalous, and research should be conducted to investigate the reasons behind them. For the awareness subscale, the only difference found between French and Americans occurred under the condition of Nature Ephemeral, where Americans were found to be more aware of car pollution. Even though there were, as predicted, no differences between French and Americans in the conditions of Nature Benign and Capricious, there was also no difference between the groups in Nature Perverse/Tolerant, which had not been predicted. This may be influenced by the fact that there was significance for Myth of Nature for the American population, but only marginal significance for Myth of Nature for the French population. Therefore, Myth of Nature may not predict environmental beliefs for the French population like it does for the American population. Yet, the American population did not result as predicted either, with Nature Ephemeral and Nature Perverse/Tolerant not being consistently different from the other conditions. Hence, Myth of Nature does not predict environmental beliefs for French and American populations the same way that it did in Steg and Seivers (2000) in the

Netherlands. However, like the findings for the effect of Myth of Nature, there may be unknown variables that are affecting results.

For the interaction on responsibility subscale, contrary to prediction for the condition of Nature Perverse/Tolerant, Americans were found to feel less responsibility for car pollution than the French, whereas in the condition of Nature Capricious, Americans felt more responsible than the French. Like with the awareness subscale, these findings may be due to the fact that effect of nature myth for neither the American nor the French population was found as predicted, Nature Ephemeral was not found to be more responsible than all other conditions, and Nature Perverse/Tolerant was not found to be more responsible than Nature Benign and Capricious.

What is most important about this is that there was a difference between the groups under the condition of Nature Capricious. This not only had not been predicted, but it was also not found in Steg and Seivers (2000). One reason for this may, again, be the low number of participants in the Nature Benign and Nature Capricious conditions (N=8 and N=13 respectively). As predicted, there were no differences between French and Americans under the condition of Nature Benign, however, it had been predicted that differences would be found between the groups under the condition of Nature Ephemeral, but there were none. This finding may be due to changing environmental beliefs in either France or the United States, as discussed earlier.

Furthermore, the results for the interaction on the composite Environmental Beliefs Scale did not support our prediction. In the American population, Nature Perverse/Tolerant did not differ from those in the conditions of Nature Benign and Nature Capricious, and in the French population, Nature Ephemeral was not more environmental than all other conditions. The only difference between groups was that the French were found to be marginally more environmental

than the Americans in the Nature Perverse/Tolerant condition, which is the opposite of what was hypothesized. No differences were found between groups in the conditions of Nature Benign and Nature Capricious, as predicted. However, differences were predicted in the condition of Nature Ephemeral, and none were found. What is seen here is most likely the same as the problem with the other interactions. Myth of Nature does not seem to be affecting environmental beliefs in France and the United States in the same way that it did in the Netherlands in Steg and Seivers (2000).

There were limitations of this study that may have negatively affected the results. First, as mentioned earlier, the number of participants in both the Nature Benign and Nature Capricious groups was very low. This makes any findings concerning these conditions harder to generalize because the sample in these conditions may not be representative. In a world of increasing globalization, and increasing pollution, pro-environmental movements are having global influence, leaving the two un-environmental myths of nature (Benign and Capricious) unable to capture the sentiments of those who are not ready to jump on the environmental bandwagon.

Second, there were no females in the condition of Nature Benign. Therefore, this condition is only applicable to a male population. Interactions may be affected by the lack of females in this condition, and in conjunction with the low participant numbers, limits the generalizability of findings. Finally, this research was only conducted on undergraduate students. Therefore, they may not be a representative sample of a general population. Yet, as is well known, these undergraduates are poised to shape tomorrow, and their growing concern about the effects of car pollution is the growing concern of a new generation.

This study has added to the current body of environmental psychology literature by examining how general environmental beliefs predict car pollution and their interaction with

country of residence. Car pollution, though it makes up almost one third of our atmospheric pollution (EPA, 1999), has been neglected in environmental psychology studies. Despite this lack of literature concerning the issue of car use and environmental beliefs, psychologists have studied what promotes environmental behavior from other standpoints (e.g., values, locus of control). Some have examined gender, studying levels of femininity versus masculinity (e.g., Zelezny, Chua, & Aldrich, 2000), whereas others have looked at the way knowledge affects pro-environmental behaviors (e.g., Fransson & Gärling, 1999). Research has also been conducted using internal versus external locus of control (e.g., Hamid & Cheng, 1995), and risk perception as variables (e.g., O'Conner, Bord, & Fisher, 1999). However, as the world becomes increasingly car dependent, studies assessing car pollution beliefs, and the vulnerability of these beliefs are necessary. Psychologists are equipped to investigate the mode by which people's transportation decisions can be influenced. Now is the time to rise to the challenge of a new millennium, and help to heal the wounds humanity has inflicted upon the world. As hybrid and fully electric cars increase in popularity, it is important that researchers continue to track and document the evolving beliefs of a new generation.

In conclusion, it is recommended that future research utilize a large population of both males and females in all conditions of Myths of Nature, with a similar number of participants in each condition. In addition, a closer look at the changing environmental beliefs in France is merited because of this change and its possible connection with changing politics. However, what would be the most valuable for future research would be to test Myths of Nature and beliefs about car pollution in countries around the world so that a more global picture can be taken of environmental beliefs and feelings about car pollution. The current study has investigated how general environmental beliefs are connected to car pollution beliefs. What is needed now is that

step further, figuring out how to change un-environmental beliefs to benefit a planet. As Edward O. Wilson (2003) wrote:

...we have entered the Century of the Environment, in which the immediate future is usefully conceived as a bottleneck. Science and technology, combined with a lack of self-understanding and a Paleolithic obstinacy, brought us to where we are today. Now science and technology, combined with foresight and moral courage, must see us through the bottleneck and out (p. 23).

References

Arbuthnot, J., & Lingg, S. (1975). A comparison of French and American environmental behaviors, knowledge, and attitudes. *International Journal of Psychology, 10*, 275-281.

U. S. Environmental Protection Agency (EPA) (1999). *Emission Facts: The History of Reducing Tailpipe Emissions* (EPA Publication No. 420-F-99-017). Ann Arbor, MI: Office of Mobile Sources.

Lévy-Leboyer, C., Bonnes, M., Chase, J., Ferraira-Marques, J., & Pawlik, K. (1996). Determinants of pro-environmental behaviors: A five countries comparison. *European Psychologist, 1*(2), 123-129.

O'Conner, R. E., Bord, R. J., & Fisher, A. (1999). Risk perceptions, general environmental beliefs, and willingness to address climate change. *Risk Analysis, 19*, 461-471.

Reay, D. S. (2002). Costing climate change. *Philos Transact Ser A Math Phys Eng Sci, 360*, 2947-2961.

Schwarz, M., & Thompson, M. (1990). *Divided We Stand: Redefining Politics, Technology, and Social Choice*. Philadelphia: University of Pennsylvania Press.

Seligman, C., Syme, G. J., & Gilchrist, R. (1994). The role of values and ethical principals in judgments of environmental dilemmas. *Journal of Social Issues, 50*(3), 105-119.

Steg, L., & Sievers, I. (2000). Cultural theory and individual perceptions of environmental risks. *Environment and Behavior, 32*, 250-269.

Ward's Communications (2001). *Motor Vehicle Facts and Figures 2001*. Southfield, MI: Intertec Publishing Corp.

Webster, P. (1997, June 5). Women fill 1/3 of French cabinet. *The Guardian, 15*.

Wilson, E. O. (2003). *The Future of Life*. New York: Vintage Books.

Table 1

Means and Standard Deviations for the Awareness Subscale (N= 291)

	Main Effect		Interaction			
	<u>M</u>	<u>SD</u>	Americans		French	
<u>Myths of Nature</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Ephemeral	2.96	0.64	3.12	0.64	2.82	0.61
Perverse/Tolerant	2.26	0.64	2.53	0.57		
Benign	2.33	0.62	2.25	0.22		
Capricious	2.15	0.67	2.19	0.69	2.10	0.59

Table 2

Means and Standard Deviations for the Efforts Useful Subscale (no interaction found) (N= 291)

<u>Myths of Nature</u>	<u>Main Effect</u>	
	<u>M</u>	<u>SD</u>
Ephemeral	4.21	0.83
Perverse/Tolerant	3.82	0.87
Benign	2.56	0.83
Capricious	3.05	1.05

Table 3

Means and Standard Deviations for the Responsibility Subscale (N= 291)

<u>Myths of Nature</u>	<u>Main Effect</u>		<u>Interaction</u>			
	<u>M</u>	<u>SD</u>	<u>Americans</u>		<u>French</u>	
			<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Ephemeral	3.39	0.94	3.44	0.94	3.34	0.93
Perverse/Tolerant	3.10	0.85	2.96	0.70	3.25	0.98
Benign						
Capricious	2.67	0.93	3.13	0.82	1.95	0.57

Table 4

Means and Standard Deviations for the Composite Environmental Beliefs Scale (N= 291)

<u>Myths of Nature</u>	<u>Main Effect</u>		<u>Interaction</u>			
	<u>M</u>	<u>SD</u>	<u>Americans</u>		<u>French</u>	
			<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Ephemeral	3.37	0.60	3.44	0.61	3.32	0.58
Perverse/Tolerant	3.04	0.61	2.93	0.53	3.14	0.68
Benign	2.52	0.48	2.56	0.20	2.49	0.70
Capricious	2.52	0.56	2.70	0.49	2.23	0.60

Figure 1. Predicted interaction between nationality and nature myth.

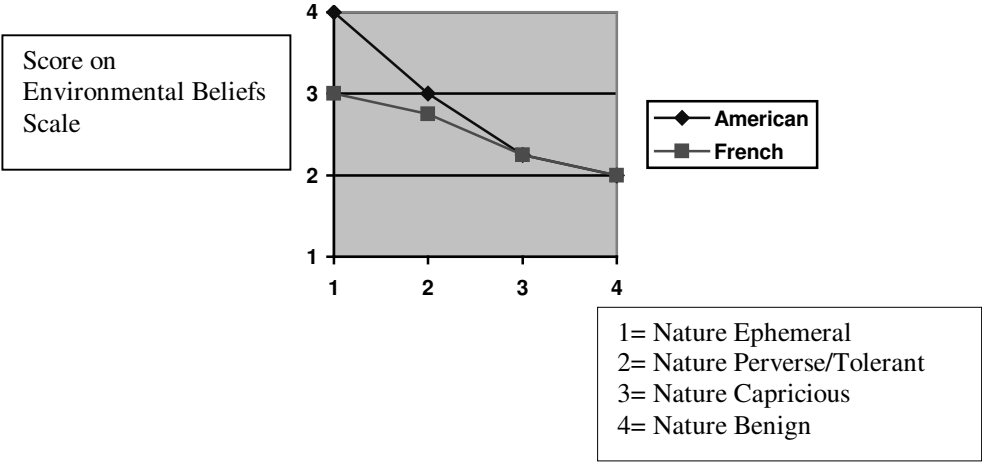


Figure 2. Interaction between nationality and nature myth for awareness subscale.

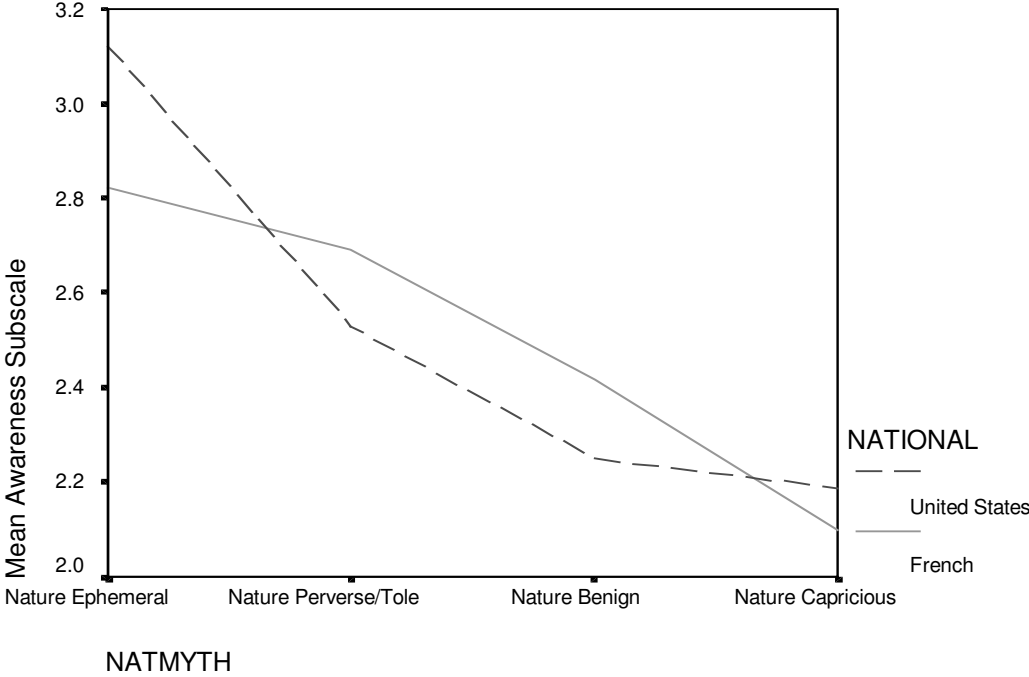


Figure 3. Interaction between nationality and nature myth for responsibility subscale.

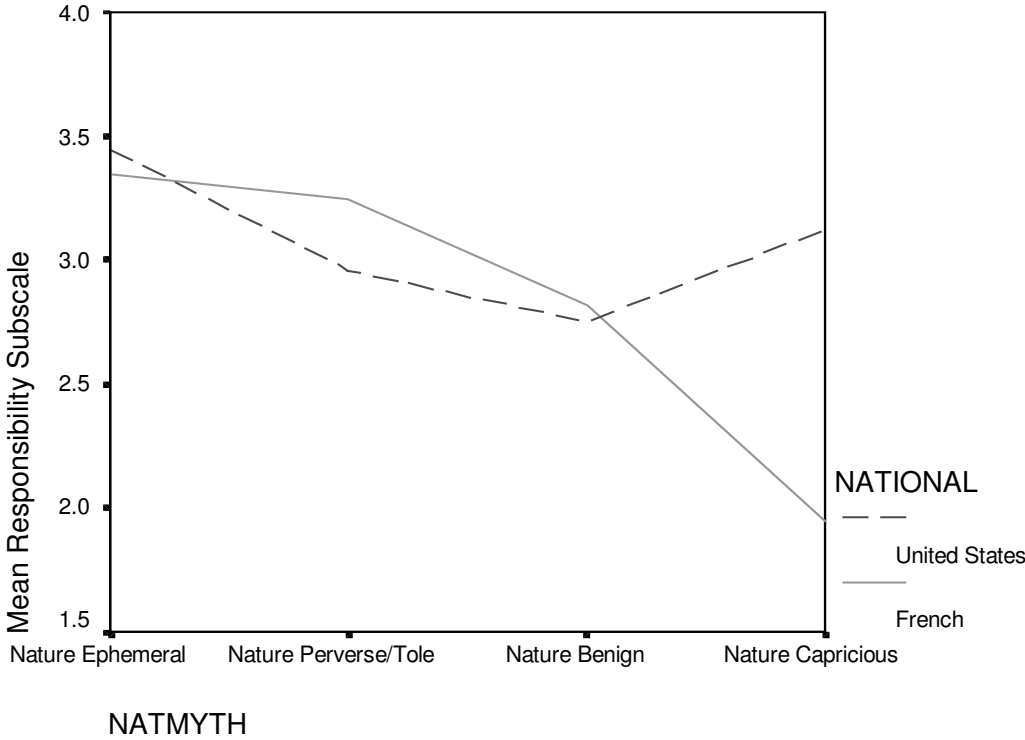
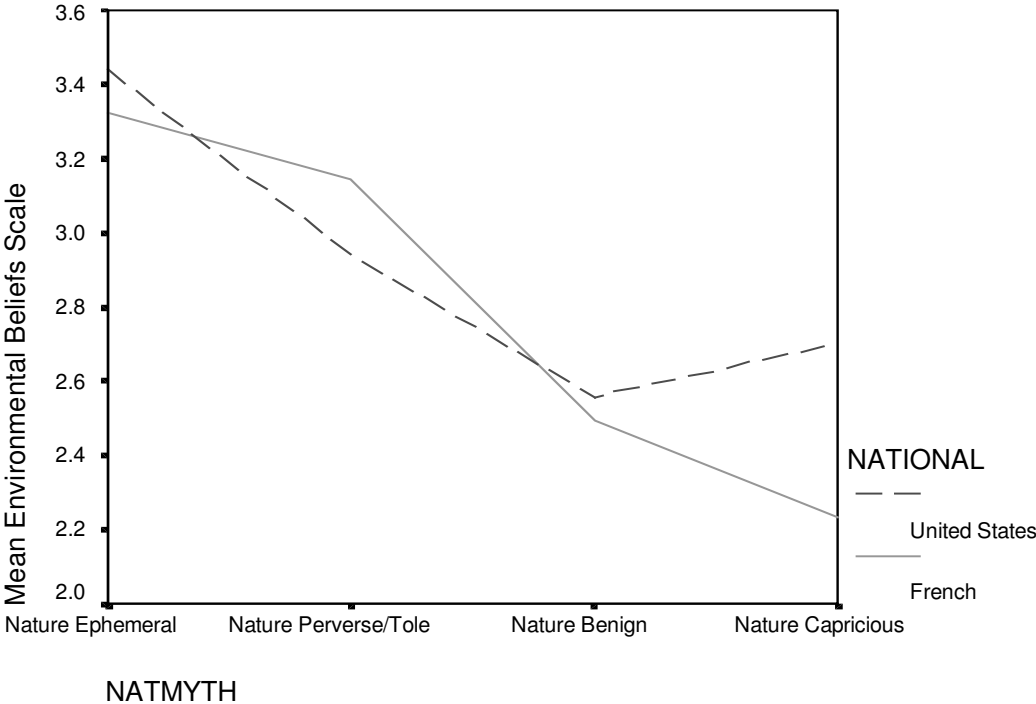


Figure 4. Interaction between nationality and nature myth for Environmental Beliefs Scale.



Appendix A

Myths of Nature

1. *Nature Ephemeral*: Environmental problems can only be controlled by enforcing radical changes in human behavior and in society as a whole.
2. *Nature Perverse/Tolerant*: Environmental problems are not running out of control, but the government should dictate clear rules about what is and what is not allowed.
3. *Nature Benign*: We do not need to worry about environmental problems because in the end, these problems will always be resolved by technological solutions.
4. *Nature Capricious*: We do not know whether environmental problems will aggravate or not.

Appendix B

Environmental Beliefs Scale

1. Car use is a societal problem.
2. Problems of car use are uncertain.
3. Car use is especially disadvantageous for society.
4. I feel guilty when using my car frequently.
5. Environmental problems of car use are trivial compared to other polluters.
6. Car use is especially disadvantageous for myself.
7. Problems of car use cannot be solved, we just have to cope.
8. No use to worry about problems, for new solutions will arise.
9. No use to reduce my car use, others will keep on driving.
10. I personally contribute to the problems by driving my car.
11. My own car use is a problem for society.
12. I can contribute to solutions by driving less.
13. Car use causes major problems, but I cannot do anything about it.