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“YEAH, I DRIVE AN SUV, BUT I RECYCLE”: THE CULTURAL FOUNDATIONS OF
ENVIRONMENTALLY SIGNIFICANT BEHAVIOR

by

GAIL L. MARKLE

Under the Direction of Ralph E. LaRossa

ABSTRACT

The majority of Americans profess to hold pro-environmental attitudes and intend to engage in environmentally friendly behavior. Yet their actions tell a different story. The goal of this study was to explain the gap between widely held pro-environmental attitudes and the lack of corresponding individual and collective behavior. Using both quantitative and qualitative methods and applying the principles of *grid-group cultural theory*, *cognitive sociology*, and *identity theory* I examined the meanings people ascribe to the environment, how they think about behavior relative to the environment, and justifications for the performance of environmentally significant behavior.

I administered an on-line survey to a nationally representative sample of individuals. By applying grounded theory methods to the textual data generated by open-ended survey questions I developed a model of environmentally significant behavior which describes the underlying factors that influence the performance of pro-environmental behavior. Individuals develop *environmental socio-cognitive schemas* based on the ways in which they use the six cognitive acts (*perceiving, focusing, classifying, signifying, remembering, and timing*) in thinking about the environment. They use these environmental socio-cognitive schemas to filter and interpret

environmental discourse, construct a body of environmental knowledge, and guide environmentally significant behavior.

According to this study, the explanatory link between pro-environmental attitudes and pro-environmental behavior lies in the concept of *proximity*. Performance of pro-environmental behavior is driven by the distance individuals perceive themselves to be from environmental issues. Attitudes toward the environment remain abstractions whereas behavior is situational. Individuals from different cultural groups hold different ideas about the relationship between humans and nature, the extent and severity of environmental issues, and how those issues should be addressed.

The findings from this study provide a foundation for developing effective strategies for influencing environmentally significant behavior. This study is important because environmental issues are real, their potential impact is substantial, and time is of the essence in addressing them.

INDEX WORDS: Environmental attitudes, Environmental behavior, Attitude - behavior gap, Grid-group cultural theory, Identity theory, Cognitive sociology

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GAIL L. MARKLE

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

in the College of Arts and Sciences

Georgia State University

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Gail L. Markle

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ENVIRONMENTALLY SIGNIFICANT BEHAVIOR

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GAIL L. MARKLE

Committee Chair: Ralph E. LaRossa

Committee: Don C. Reitzes

Wendy S. Simonds

Electronic Version Approval:

Office of Graduate Studies

College of Arts and Sciences

Georgia State University

August 2011

DEDICATION

This dissertation is dedicated to my husband, Dan, and our daughters, Lauren, Amy, and Jenna with gratitude for their unwavering support.

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I would like to express my sincere appreciation to Dr. Ralph E. LaRossa, the chairperson of my dissertation committee, for his time, knowledge, support, and counsel throughout the dissertation process, and also for being an excellent role model, both academically and otherwise. I would also like to thank the other members of my committee, Dr. Wendy Simonds and Dr. Don Reitzes, who also invested their time and expertise in order to bring this project to fruition.

I would also like to credit the author, George Eliot, for inspiring me with her words, “It is never too late to be what you might have been.”

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CHAPTER ONE

INTRODUCTION

STATEMENT OF THE PROBLEM

According to popular media sources as well as consumer research, many Americans hold “pro-environmental” attitudes, intend to engage in “environmentally friendly” behavior, and are eager to purchase “green” consumer products. Environmental discourse is ubiquitous in contemporary American society. But, for the most part, Americans are only “talking” environmentalism, not “doing” environmentalism. There is a disconnect between the professed beliefs and attitudes of individuals and their actual behaviors relative to the environment. This inconsistency between words and deeds, or “attitude-behavior gap,” has been well documented (Carrigan and Attala 2001; Finger 1994; Macnaghten 2003; Newholm 2005; Norgaard 2006; O’Riordan 1995).

Levels of concern regarding the environment have fluctuated over time. As early as 1864, George Perkins Marsh published *Man and Nature*, in which he called upon readers to use “the sense of vision in the study of nature” ([1864] 1965:17) to embrace a new perspective of human life as dependent upon a sustaining natural environment. Public interest in the environment was renewed with Rachel Carson’s 1962 publication of *Silent Spring*, which exposed the deleterious effects of toxic chemical pollution. The recent spike in environmental concern corresponds to Al Gore’s 2006 Academy Award winning documentary and best-selling book *An Inconvenient Truth*, which focused on the hazards of climate change. Gore was co-winner of the 2007 Nobel Peace Prize for his work in identifying climate change as a global social problem, sharing the prize with the Intergovernmental Panel on Climate Change (IPCC).

Social problems wax and wane in importance over time because they are socially constructed (Blumer 1971; Kitsuse and Spector 1973; Spector and Kitsuse 1987). Social problems thus are better understood as “products of particular constructions of social reality, rather than necessarily of actual physical conditions” (Spector and Kitsuse 1987:38). How a social problem becomes constructed affects its meaning and constrains its resolution. Social problems may also be viewed as cultural objects; socially meaningful expressions that tell a story about the larger social system of which they are a part. Because there are numerous ways for a cultural object to be transformed into a social problem each social problem can have various definitions, interpretations, and determinants, as well as different intended audiences (Griswold 1994). Each audience thinks about problems in its own way.

The problem of the environment is an example of a “commons” dilemma (Hardin 1968). In a commons dilemma, individual rational actions in pursuit of need satisfaction have a negligible effect on a commonly held resource, yet the cumulative effect of such actions has a detrimental effect on the resource and impacts its future viability. The individual’s personal objective conflicts with that of the group. The dilemma is how to transform rational individualistic behavior into collectively undertaken socially beneficial behavior which usually entails a cost to the individual. Narrowing the environmental attitude-behavior gap calls for behavioral change on a large scale; to accomplish this it is necessary to change habits of thinking.

RESEARCH QUESTION

The goal of this study was to explain the gap between widely held pro-environmental attitudes and lack of coherent public response to the environment as a social problem. Behaviors that affect the environment are embedded in the habits and meanings of everyday life. Using

both quantitative and qualitative methods and applying the principles of *grid-group cultural theory*, *cognitive sociology*, and *identity theory* I examined the meanings people ascribe to the environment, factors that influence pro-environmental behavior, and the barriers and justifications to the performance of pro-environmental behavior.

The environmental “attitude-behavior gap” shows no signs of narrowing and may even be increasing. Recent research continues to show Americans hold “pro-environmental” attitudes (Biel 2002; Kaiser and Gutscher 2003; Macnaghten 2003; Manetti, Pierro and Livi 2004; Newholm 2005; Oreg and Katz-Gerro 2006), yet per capita energy consumption has increased 2.4 percent between 1990 and 2005 (International Energy Agency 2008), and recycling rates for aluminum cans and plastic beverage bottles have decreased 31 percent and 37 percent respectively, between 1992 and 2006 (Container Recycling Institute 2010).

Most prior research investigating the link between environmental attitudes and behavior has utilized survey instruments with closed end responses to questions about attitudes and behavioral intent in general and have not succeeded in explaining why people express pro-environmental attitudes while failing to engage in pro-environmental behavior on a consistent basis. This study differs from prior research because it delves more deeply into the ways individuals think about the environment. It also illustrates how culture influences individuals’ thinking about the environment and consequently the performance or lack of performance of pro-environmental behavior.

SIGNIFICANCE OF THE STUDY

Global climate change is currently a very significant and urgent environmental issue. The chairman of the IPCC recently pronounced that “warming of the climate system is unequivocal” (Pachauri 2010). According to research disseminated by the IPCC, the effects of

global climate change have already been documented on “physical and biological systems on all continents and in most oceans” and “climatic effects on human systems are emerging” (Intergovernmental Panel on Climate Change 2007). Scientists forecast the impact of these effects to be very serious, including increased risk of extinction for 20 – 30 percent of assessed plant and animal species, changing weather patterns, and rising sea levels. Climatic transformations would affect global food production especially in low lying plains and river delta areas. Rising sea levels could totally submerge some islands and cause rampant coastal flooding on larger land masses. About 40 percent of the world’s population and close to 50 percent of the U.S. population live within 60 miles of a coast (McGranahan, Balk, and Anderson 2006). According to the IPCC (2007) anthropogenic interference with the climate system can be mitigated by changes in lifestyle and behavior patterns, especially by reducing carbon dioxide emissions through energy conservation and efficiency. Delays in such mitigation efforts are expected to result in a greater and more severe impact. The brunt of global climate change will be borne disproportionately by the poorest communities of the world, those who have negligibly contributed to the problem (Pachauri 2010).

It is imperative to understand the general lack of behavioral response to increasing levels of environmental threat. The results of this study can be used as a foundation for developing strategic and effective methods of influencing environmentally significant behavior. On another level, this study can help us better understand the attitude-behavior gap in general, how it manifests itself and why it occurs thus making an important theoretical contribution to the field of sociology.

SUMMARY

In this chapter I have stated that the purpose of this study is to explain the gap between environmental attitudes and behavior, and generate insights into attitude-behavior gaps in general. This study also illustrates the influence of culture on people's thinking about the environment and consequently their performance of environmentally significant behavior. This study is important because environmental issues are real, their potential impact is substantial, and time is of the essence in addressing them.

In Chapter Two, Theoretical Frameworks, I present the theoretical frameworks used in this study. I used the principles of *grid-group cultural theory*, *cognitive sociology*, and *identity theory* as a foundation for this research. All three theories were shown to be useful for examining the environmental attitude-behavior gap.

In Chapter Three, Literature Review, I present a review of the relevant literature. Empirical research into environmental attitudes and behavior began in earnest in the 1970s. This review encompasses the development of widely accepted measures of environmental attitudes and behavior, the results of early and contemporary studies using these measures, the development of theories specific to the study of this topic, and other more recent studies incorporating innovative methods of study. Finally, I present 10 hypotheses, to be tested quantitatively; a qualitative Research Question; and a heuristic model of the hypothesized relationships and explanatory factors.

Chapter Four, Methods, explains the research design, the data collection process, the construction of the survey instrument and how the sample was derived. I explain the operationalization of the variables and the use of specific scales and other measures. Finally, I present a demographic analysis of the sample.

Chapters Five and Six present the results of the quantitative analyses. Chapter Five, Quantitative Analysis Part I: Descriptive Statistics, presents the descriptive statistics of the sample and shows the distribution of respondents among the cultural groups. I compare the two different measures of pro-environmental behavior. Chapter Six, Quantitative Analysis Part II: Results of Hypotheses Tests, presents the results of the hypotheses tests and explains whether or not each hypothesis was supported by the data.

Chapters Seven and Eight present the results of the qualitative analysis. Chapter Seven, Qualitative Analysis Part I: Variables, The Environmental Socio-Cognitive Schema, and a Model of Environmentally Significant Behavior, discusses the variables derived from grounded theory methods. I present the environmental socio-cognitive schema and the model of environmentally significant behavior. Chapter Eight, Motives, Accounts, Stories, and Three Culturally Specific Environmental Socio-Cognitive Schemas, describes how respondents use motives, accounts, and stories to illustrate their thinking relative to the performance of environmentally significant behavior. I explain how thinking about the environment differs according to cultural group. I also discuss the synecdochal use of recycling.

Chapter Nine, Conclusion and Implications, summarizes the results of the study. I also discuss the theoretical implications of the study. In addition, I discuss the study's practical implications and how they might be applied toward narrowing the environmental attitude behavior gap. I also discuss the limitations of the study and its relevance for research into the study of attitude-behavior gaps in general.

CHAPTER TWO

THEORETICAL FRAMEWORKS

GRID-GROUP CULTURAL THEORY

Most early and some contemporary research regarding environmentally significant behavior attempts to predict pro-environmental behavior by conceptualizing and measuring values. According to the value theory perspective, a value is part of a “shared symbolic system” which provides a standard for actors to use as a guide in selecting amongst various alternative actions in a particular situation (Parsons 1951:12). Values derive from culture. According to this perspective, culture influences action via values, as illustrated below:

Culture → Values → Action

Swidler (1986) challenges this perspective, pointing out that action is not undertaken in response to individually derived values which prescribe the selection of particular acts in pursuit of a specified goal; but rather culturally shared meanings dictate appropriate action sequences, or “strategies of action.” Culture provides the “tool kit” or repertoire (Hannerz 1969; Swidler 1986) of symbols, rituals, habits, worldviews, and skills with which its members construct strategies of action. These seemingly individual strategies of action are bounded by “larger, culturally organized capacities for action” (Swidler 1986: 283). As individuals’ culturally induced strategies of action become familiar, and eventually ingrained, the meanings of their chosen cultural resources become ever more significant, and their styles or strategies of action become more salient than any particular objective, and “people will come to value ends for which their cultural equipment is well suited” (p. 277). According to this perspective then,

culture affects action directly by determining the universe of possible actions; values are a consequence of action, as illustrated below:

Culture → Action → Values

People in contemporary post-industrial societies do not exist as part of one homogeneous entity, but distribute themselves, either by choice or through circumstances, into different cultural groups. Grid-group cultural theory provides a way of understanding the fundamental cultural differences among them. This theory, created by Douglas (1970), originated as a typology of social control based on two dimensions: the degree to which individuals' lives are constrained by external regulation (grid) and the strength of the group boundary (group), and was referred to as grid-group analysis. Taking into account notions of risk and power, Douglas, in collaboration with Wildavsky and Thompson, expanded grid-group analysis into a general theory of the relationship between social organization and culture with the central theme of irreconcilable conflict and renamed it "cultural theory" in the late 1980s (Douglas 2006).

To distinguish this specific theory from other cultural theories, an increasing number of researchers refer to the theory as grid-group cultural theory (Hood 1998; Ward 1998; Mamadouh 1999). Grid-group cultural theory (Douglas 1970, 1982, 1997, 2006; Thompson, Ellis, and Wildavsky 1990; Wildavsky 1987) distinguishes five different ways of life, or cultures, according to the two dimensions of regulation and boundary: fatalist, egalitarian, hierarchical, individualist, and hermit. (See Figure 2.1.) Each "cultural bias" is "a point of view, with its own framing assumptions and readily available solutions for standardized problems" (Douglas 1997:128). Each of the cultures has a specific conceptualization of needs and resources by which

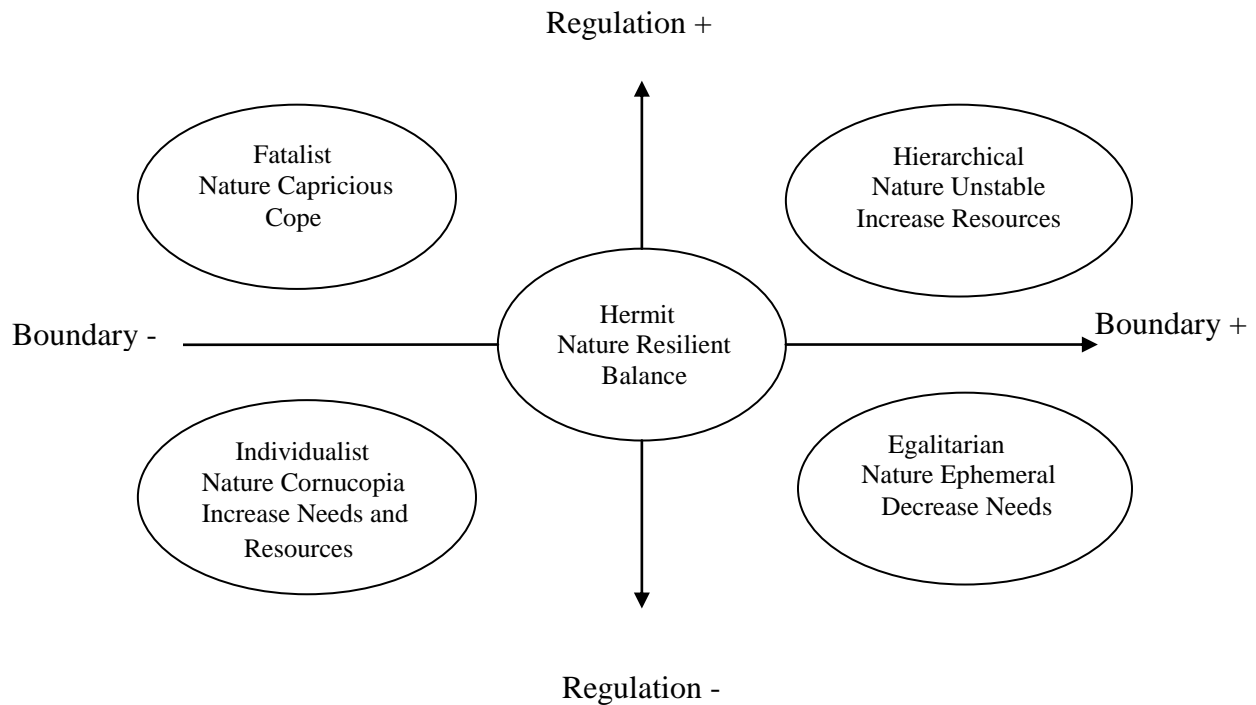


Figure 2.1 The Five Cultures

its members justify their set of behavioral strategies (Dake and Thompson 1993). Each culture also has its own orientation to nature which influences the manner in which its members perceive and act on environmental issues.

These cultures compete with one another but are also interdependent. They have different ways of organizing and ascribing meaning in everyday life. Dake and Thompson (1993) apply grid-group cultural theory to the social category of the household as household consumption patterns mirror the cultural biases of the five groups.

The *fatalist* culture consists of individuals who are subject to strong normative prescriptions and are excluded from group membership. They have minimal individual autonomy and view life as a crapshoot. Fatalists view nature as capricious – operating without rhyme or

reason. Neither needs nor resources are manageable. The fatalist strategy is to cope as best as possible in an environment over which one perceives oneself to have no control.

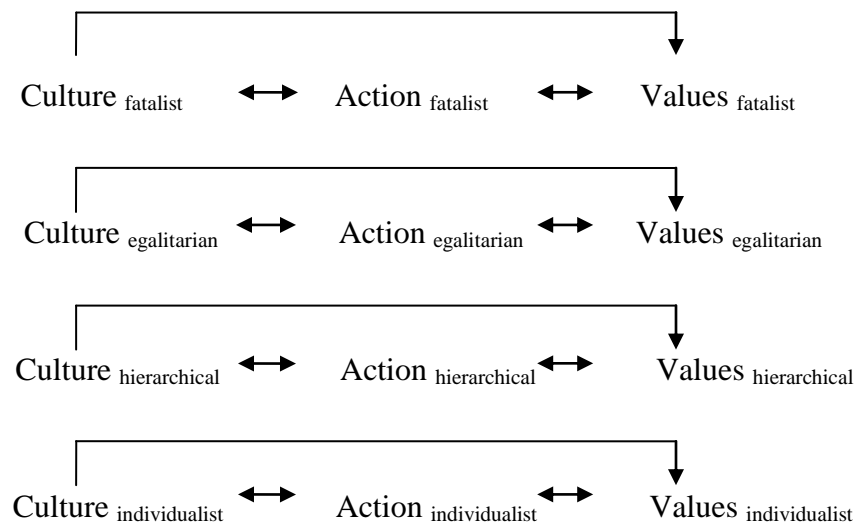
Minimal normative prescriptions and strong group boundaries characterize the *egalitarian* culture. The ideals of equality and fairness are of utmost importance. Egalitarians view nature as ephemeral, existing in a delicate and precarious balance; resources are finite and depleting. Needs can be managed but resources cannot. The egalitarian strategy is to decrease needs to ensure sustainability, a strategy egalitarians insist everyone must embrace.

Binding normative prescriptions and strong group boundaries characterize the *hierarchical* culture. Individuals are subject to the control of other group members and to the demands of social roles imposed on them by structure and tradition. Nature appears to exist in an unstable equilibrium with limited resources, a view of nature provided by knowledgeable experts. Individuals must consume resources in a manner dictated by their social status. Resources can be managed but needs cannot. The hierarchist strategy is to increase resources in order to match needs.

Members of the *individualist* culture are not bound by normative prescriptions or group incorporation; indeed, all boundaries are subject to negotiation. The individualist remains relatively free from external control, while exerting substantial control over others. Individualists regard nature as a cornucopia, where abundant resources exist in a stable and global equilibrium. Success comes as a result of skillful manipulation of risks and opportunities. Competitive individualists maneuver within a self-regulated network of social relations where they are free to bid and bargain. Both resources and needs can be controlled. The individualists' strategy is to manage both needs and resources upward through conspicuous consumption, believing that when they prosper everyone else benefits as well.

The *hermit* culture includes elements of all the other cultures yet remains distinct. Individuals do not participate in manipulative social arrangements, but neither are they totally isolated, preferring “conviviality without coercion” (Dake and Thompson 1999:420). Hermits view nature as resilient. Both resources and needs are malleable to some extent. The hermit’s strategy is to balance relatively minor needs with adequate resources, in the process achieving a state of independence. At this point the *hermit* remains a theoretical category; the measurement instrument has not been sufficiently developed for empirical testing (Dake and Thompson 1999; Rippl 2002). This study will examine the orientations of four cultural groups: fatalist, egalitarian, hierarchical, and individualist.

According to grid-group cultural theory, values emerge from the social interactions through which members of one culture justify and defend their own way of life and oppose the different ways of life exhibited by other cultures (Dake and Thompson 1993). According to this perspective, values are a consequence of the actions characteristic of specific cultures, as illustrated below:



COGNITIVE SOCIOLOGY

Grid-group cultural theory explains variances in values. But as Laiten (1988) points out, the theory does not address the source of the variances “but merely pushes it back one step” (590). I believe an approach grounded in cognitive sociology has the potential to explain the source of these variations, or at least “push it back” yet another step. A key premise of cognitive sociology is that in addition to thinking as individuals, people also think “as social beings, products of particular social environments” (Zerubavel 1997:6). Members of different cultures, or “thought communities,” have different cognitive habits or traditions.

The genealogy of cognitive sociology originates with Cooley ([1902] 1956), and includes Weber ([1930] 2004), Durkheim ([1912] 1995), Mannheim ([1929] 1936), Mead (1934), Schutz (1962), Berger and Luckmann (1966), Garfinkel (1967), Goffman (1974) and Zerubavel (1997). All of these theorists in some way ventured to connect cognition to social structure or to demonstrate how, as DiMaggio phrases it, “culture is manifest in people’s heads” (1997:272).

Central to a cognitive sociological approach is the distinction among three ways of thinking: cognitive individualism, cognitive universalism, and cognitive pluralism (Zerubavel 1997). *Cognitive individualism* refers to the process of thinking as an individual, from the subjective position of personal experience. *Cognitive universalism* refers to the process of thinking as a human being, from an objective position informed by nature and logic. *Cognitive pluralism* refers to the process of thinking at the level of a social being, from an intersubjective position as part of a group whose members have developed similar cognitive structures. Cognitive pluralism emphasizes the socio-cognitive diversity among various “thought communities.” Cognitive pluralism is the main tenet in cognitive sociology. Zerubavel (1997) divides thinking into six interrelated acts: perceiving, focusing, classifying, signifying,

remembering, and timing. A comprehensive analysis of people's thinking processes would offer evidence of all six acts and their connection to one another.

Perceiving

In perceiving, we become aware of something. In addition to the sensory experience though, perceiving also includes an element of interpretation. How we see something is shaped by "schematic mental structures" (Zerubavel 1997:24), or socio-cognitive traditions, that bias our way of looking. While a variety of "mental lenses" is possible, social groups develop "optical norms" which compel their members to perceive things in much the same way, engendering outlooks or worldviews that are typical of specific communities. General facts about the natural environment cannot generally be seen or understood through individual experience, therefore our perception of the state of the environment, or "environmental issues," is mediated through other social sources. Members of the various cultural groups are likely to develop similar orientations to the natural environment based on their common experiences of "optical socialization."

Focusing

In focusing on something we make it the center of interest, relegating other things to a position of less relevance or irrelevance. Our socially derived "mental horizons" proscribe the limits of that to which we are able to attend. Mental horizons fluctuate with time. Not so long ago it was standard procedure for manufacturing plants to dump industrial waste into rivers and streams. Today such activity elicits significant sanctions and public outrage. We may have an idealized sense of time that orients our seeing and influences our behavior according to an "illusion of stasis," that whatever we do, we can do again, in a world that will continue as it always has (Schutz 1962; Schutz and Luckmann 1989). This concept influences our ability to consider the future consequences of our current behavior since the future exists as an hypothesis

(Mead 1938). This temporal frame corresponds to a mode of short term thinking which favors current and known outcomes over future and uncertain outcomes. Short term motivation is so powerful, that even when individuals know that more expensive light bulbs save energy and money in the long run, many still find it difficult to pay the additional cost at the time of purchase (Weigert 1997). Mental horizons are important in terms of looking at the short and long terms consequences of environmentally significant behavior. Environmentalists encourage people to take “the long view” – extending the horizon further into the future when considering environmental conditions “a hundred years from now...” or “for our great grandchildren.”

Norms of focusing can be a form of social control (Zerubavel 1997), in effect deciding for us what should receive our attention. Media coverage highlights certain environmental conditions, such as global warming, to the exclusion of others, such as loss of biodiversity. “Moral focusing” enables us to distinguish that which is relevant, based on worthiness. Whales and polar bears, as species, are deemed more deserving of saving from extinction than the canarian shrew.

Classifying

In classifying we arrange or organize things, and, in the process, create boundaries. This arranging and organizing entail a process of “lumping and splitting,” or “grouping ‘similar’ items together in a single mental cluster” and “separating in our mind ‘different’ mental clusters from one another” (Zerubavel 1991: 21). Lumping minimizes the mental differences between items while splitting emphasizes their “mental separateness” (p. 46). Once differences are established, a process of polarization commonly occurs, resulting in a gulf between the two clusters or an “excluded middle” (Zerubavel 1991:46). Such polarization creates a “dialectic of opposites” in which items are characterized as good/bad according to their aesthetic or moral worth (Douglas

1970). For example, various species of low growing green plants are designated as either desirable grass or detestable weeds. Socially constructed differences also can become reified, as they come to be seen as “natural” or “supernatural.” Major disputes often erupt over the ways we classify things -- a clear indication of the politics of social classification (Zerubavel 1996). One example of such “border disputes” is the characterization of sports utility vehicles as environmentally pernicious, but not pick-up trucks, recreational vehicles, or high performance sports cars, coupled with the deep attachment that some individuals have to their automotive choices.

Signifying

In signifying we invest something with meaning through the use of signs, and, in particular, conventional signs (i.e., symbols). Assigning meaning is a social process governed by “rules of association” in which signifiers are linked to signifieds in specific ways (Zerubavel 1997). There are three types of signs: indicators (natural association); symbols (conventional or artificial association) and icons (natural and conventional/artificial associations) (Zerubavel 1997:70). The meaning of a symbol can be found in its contrasting relationships with other symbols as illustrated by Zerubavel’s “semiotic square” (p. 74). Symbols may be semantically associated (e.g., pink and female), or syntactically contrasted (e.g., female versus male).

Figure 2.2 presents a “semiotic square” illustrating the relational nature of social meanings relative to the environment. Driving a Hummer (a) connotes environmental indifference while driving a Prius connotes environmental concern. Showering (b) is associated with water conservation, while taking a bath, is considered wasteful. Similarly,

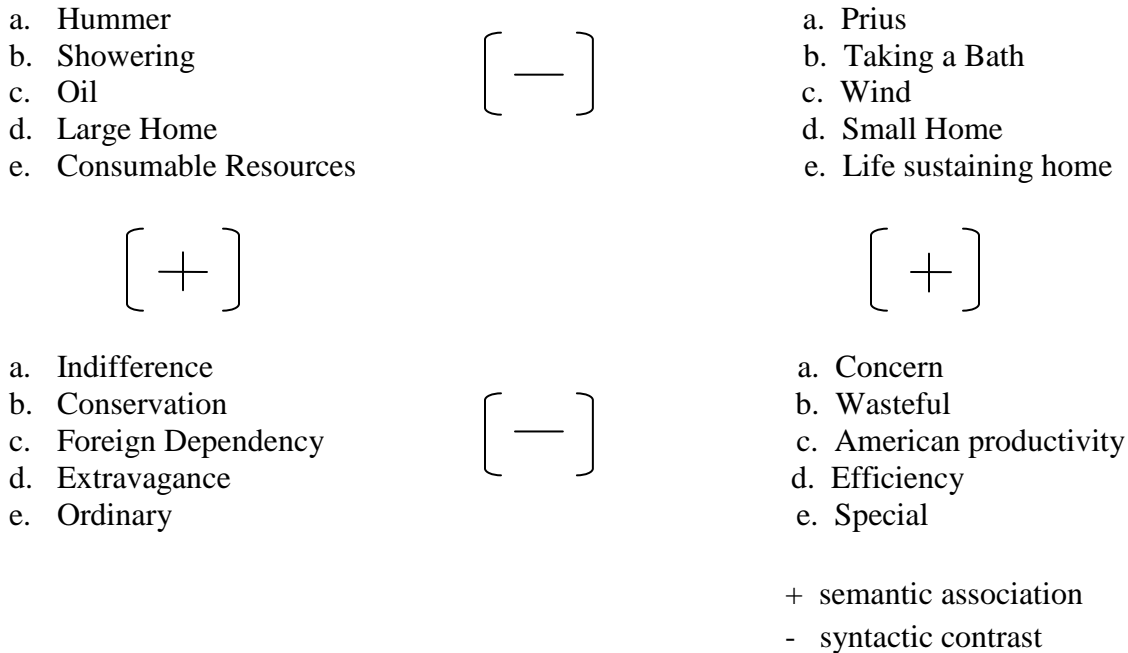


Figure 2.2 The Semiotic Square

oil (c) as an energy source symbolizes foreign dependency, while wind power symbolizes American productivity. Large homes (d) are associated with resource extravagance whereas small homes are associated with resource efficiency. Meanings vary across thought communities according to how symbols are used in interaction. Some may consider the earth an aggregation of consumable resources (e), while others may consider it a nurturing life-sustaining home. The importance of these relationships between culturally accepted meanings lies in the designation of either “ordinary” or “special.”

Imagery is a very important element in communicating shared meanings. The 1972 photograph of Earth as “The Blue Marble,” taken by Apollo 17 astronaut Harrison Schmitt, is the most reproduced photograph in history (Poole 2008). With the planet suspended in cosmic isolation, the beauty and fragility of the planet are emphasized, making this iconic representation a “photographic manifesto for global justice” (p. 126.18).

Remembering

Our memory contains both uniquely personal memories and socially mediated memories. What we remember and how we remember it are influenced through socializing “mnemonic traditions” (Zerubavel 1997). As members of particular thought communities we also subscribe to collective memories of events beyond our personal experience. We take part in contemporary history-making events vicariously through the narrative and therefore interpreted experiences recounted by others, or we may experience and re-experience technologically reproduced versions of these events complete with authoritative interpretive voice-overs.

Historical narratives generally take four forms (LaRossa and Sinha 2006; Zerubavel 2004): prospective progressive, or “looking forward to discourse”; prospective regressive, or “the future will not be pleasant discourse”; retrospective progressive, or “things are better now discourse”; and retrospective regressive, or “nostalgia discourse.” Recollections of the past inform prospective regressive narratives which warn us of potentially catastrophic futures as in a recent article titled “100 Places to Remember before They Disappear” (Newsweek 2010). Corporate advertisers use a fifth form, the stability narrative, or “behavior remains stable” (LaRossa and Sinha 2006; Zerubavel 2004) to convince us that without changing our consumption-oriented lifestyles and simply by “buying green” we can make a positive impact on the environment, or at least minimize the negative impact.

Media images play an instrumental part in constructing shared memories and imbuing them with emotion. Images of oil-covered waterfowl figure prominently in our memories of the events surrounding the Exxon *Valdez* oil spill. “Mnemonic decapitation” occurs when the past is socially divided into a “memorable ‘history’ and a practically forgettable ‘pre-history’” (Zerubavel 1997:85). The publication of Rachel Carson’s *Silent Spring* ([1962] 1994) is

frequently cited as marking the beginning of the environmentalism movement; yet scholars such as Marsh ([1864] 1965) were advocating the need for environmental awareness a full century prior.

Timing

Our conceptualization of time is intersubjective as well; how we order events (past, present and future), synchronize our daily lives, and anticipate our futures is dependent upon temporal constructs (Zerubavel 1997). While we may date some events in personal time, as in when we read the newspaper, other events are dated in social time, as in placing the newspaper in the recycling bin and positioning it at the curb prior to the scheduled pickup time. Standard time-reckoning frameworks are necessary in order for both simultaneous and non-simultaneous social action to take place; hence the social organizing power of watches, clocks and calendars, or more recently, cell phones (time) and Blackberries (date).

Periodization is vitally important to social timekeeping, whether we mark time in seconds, months, millennia, or any other socially constructed distance. LaRossa and Reitzes (2001) refer to this parsing of time as chronometricalizing historical flow. Marking time on a more frequent basis appears to increase the pace in which time is experienced (LaRossa and Reitzes 2001; Lewis and Weigert 1981). Anniversaries marking the passage of time are, more or less, significant, depending on socially recognized intervals: the 40th anniversary of Earth Day, April 22, 2010, was more celebrated than the 39th or the 41st.

IDENTITY THEORY

Identity theory illuminates the connection between individual behavior and social structure. Burke and Stets (2009) characterize identity as “the set of meanings that define who one is” in three specific dimensions: role identity applies to one’s role or social position; social identity applies to one’s membership in a particular group; and person identity refers to an individual’s distinctive characteristics (p. 3). Individuals therefore acquire multiple identities, the meanings of which are collectively understood by members of society. Weigert (1997) conceives of environmental identities as “experienced social understandings of who we are in relation to, and how we interact with, the natural environment as other” (p. 159).

Identity theory is based on a framework of structural symbolic interactionism, which states that social behavior accrues from the definitions and interpretations individuals construct of themselves, others, and their situations. Action, however, does not occur solely in response to the desires of individuals but rather is subject to constraints imposed by the social structure. According to identity theory, the self is constructed of multiple components, or identities, which correspond to one’s involvement in structured social relationships (Stryker 1968). Identities consist of internalized sets of behavioral expectations, or roles (Stryker 1987).

Identity salience and commitment explain the impact role identities have on behavior (Hogg, Terry and White 1995). Identity salience refers to the idea that identities are rank ordered in the self concept according to the probability that they will be invoked (Stryker 1968, 1987; Stryker and Serpe 1982). The more salient the identity, the more likely it is that behavior associated with that identity will be performed across a variety of situations. The relative importance of an identity, or its position in the salience hierarchy (Stryker 1980), may predict behavior when different identities are invoked simultaneously, especially if those identities call

for incompatible behavior (Stryker 1968). Behavior chosen in response to conflicting demands reflects the relative importance of the identity. Of particular relevance to this project is the idea that “self-awareness ...is not inherent in salience” (Stryker and Serpe 1994:19); in other words, it is the individual’s behavior that reflects the identity’s actual ranking in the individual’s salience hierarchy. The salience of an identity is determined by the individual’s commitment to the role – the stronger the commitment, the greater the salience. Stryker (1980) defines commitment as the personal and social costs incurred in not fulfilling the role expectations associated with an identity.

Burke and Reitzes (1981) assert that a system of parallel meanings defines the relationship between behavior and identity. The set of meanings one attributes to one’s identity influences one’s behavior and, reciprocally, one’s behavior confirms one’s identity. Indeed, Burke and Reitzes (1981) find that the self modifies behavior in order to increase the “correspondence between one’s identity and the identity that is implied by one’s actions interpreted ...within a common cultural framework” (p. 85). Burke and his colleagues further illustrate the synchronicity between identity and behavior with the notion of a perceptual control system (Burke 1991, 1996; Burke and Cast 1997; Riley and Burke 1995; Tsushima and Burke 1999). This cybernetic model includes a feedback loop consisting of four components: 1) the identity standard, or the set of self-meanings associated with an identity; 2) reflected appraisals, which generate perceptual input; 3) a comparator, which notes any mismatch between perceptual input and the identity standard; and 4) resultant behavior, which attempts to align perceived situational self meanings with those of the identity standard. In this model, commitment to an identity refers to the effort to align self-in-situation meanings with those meanings that make up the identity standard (Burke and Reitzes 1991). The more committed one is to an identity the

more one will work to minimize any discrepancy between identity meanings and behavior meanings (Burke and Reitzes 1991).

In addition to role identities, or identities based on social position, individuals also have social identities based on their memberships in social groups (Hogg and Abrams 1988), and person identities constitutive of specific culturally recognized characteristics (Stets 1995; Stets and Burke 1994). Regardless of the basis for identity, the meanings associated with the identity generate identity standards that direct behavior as described above. Stets and Biga (2003) developed a model of environment identity, a person identity, consisting of “the set of meanings attached to the self as the person interacts with the natural environment” (p. 409). Environment identity is conceptualized along a continuum from anthropocentrism at one end, with the environment viewed solely as a resource to be used by humans, and ecocentrism at the other end, with humans and the environment viewed as interdependent.

PUTTING IT ALL TOGETHER

Cognitive sociology examines the relationship between culture and cognition. Zerubavel states that culture is the “locus of cognition” (1997:11). Indeed the relationship is reciprocal and reinforcing. People group themselves into cultures with similar worldviews that cognitively support their way of life. These cultures provide “plausibility structures” or groups of confirming others who validate the culture’s worldview and the identities of individuals it engenders (Berger 1967). Identities direct action which conforms to culturally shared meanings associated with those identities, a process which is also reciprocal and reinforcing. As illustrated in Figure 2.3, the six cognitive acts interconnect in the form of culturally specific socio-cognitive schemas, or “mindscapes” (Zerubavel 1997), which influence action through their constitutive relationship to

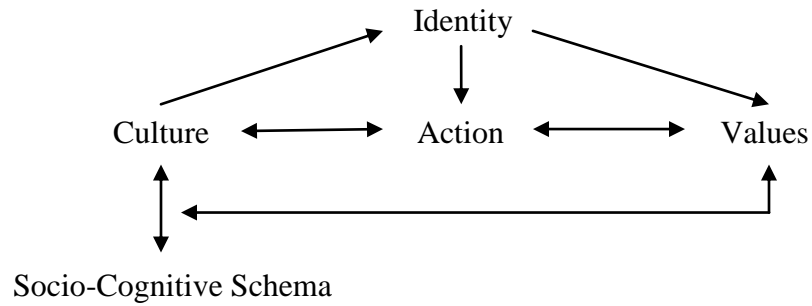


Figure 2.3 Value and Action Influences

culture and become reified in the process. Values evolve as a means of justifying the socio-cognitive schemas and actions that typify the culture and in turn become elements of the cultural repertoire. This figure shows the importance culturally derived socio-cognitive schemas and identities have in influencing action and ultimately values.

CHAPTER THREE

LITERATURE REVIEW

VALUES, BELIEFS, ATTITUDES

Empirical research into environmental behavior began in earnest in the 1970s and was undertaken from a marketing perspective with the goal of identifying environmentally conscious, or “green consumers” as a market niche. This type of research focuses on identifying values, beliefs and/or attitudes predictive of pro-environmental purchase behavior (Kinnear, Taylor and Ahmed 1974; Vinson, Scott and Lamont 1977; Webster 1975). Dunlap and Van Liere (1978) developed the new environmental paradigm, or NEP, a scale measuring pro-environmental orientation which has been subsequently improved and expanded (Dunlap, Van Liere, Mertig, and Jones 2000).

The 1990s brought renewed interest in environmental marketing research but the focus remained on values, beliefs and attitudes (Grunert and Juhl 1995; Minton and Rose 1997; Roberts 1996; Roberts and Bacon 1997; Schlegelmilch, Bohlen and Diamantopoulos 1996; Schwepker and Cornwell 1991; Shrum, McCarty and Lowrey 1995). Data from these studies were obtained for the most part from administering surveys.

During this period researchers broadened their scope and began to apply their theories to a range of pro-environmental behaviors (Ellen, Wiener and Cobb-Walgren 1991; Lee and Holden 1999; Thøgersen 1997). Surveys were still widely used although some researchers expanded their methodology to include scenarios simulating environmental dilemmas requiring participants to choose among behavioral options (Axelrod 1994; Seligman, Syme and Gilchrist 1994).

Stern and his colleagues (Stern, Dietz, and Guagnano 1995; Stern, Dietz, Kalof, and Guagnano 1995; Stern, Dietz, Abel, Guagnano, and Kalof 1999) developed the value-belief-norm theory to explain environmentally significant behavior. This theory takes personal values, environmental orientation, personal norms, beliefs about environmental conditions, and individual agency into consideration. Oreg and Katz-Gerro (2006) found support for this theory across a large cross-national sample.

Several authors (Kaiser and Gutscher 2003; Manetti, Pierro and Livi 2004; Oreg and Katz-Gerro 2006; Pouta and Rekola 2001) have based their environmental behavior research on the psychological theory of planned behavior (Ajzen and Fishbein 1980; 2005). The TPB uses intention, conceptualized as a composite of attitudes, norms, and perceived behavioral control, to predict behavior.

Scholars in this tradition continue their attempts to predict consumer and other pro-environmental behavior (Beil 2002; Follows and Jobber 2000). Researchers have attempted to find a link between ethical concepts (Chan, Wong and Leung 2008) or moral reasoning (Karpiak and Baril 2008) and the values and attitudes influencing environmental behavior. Haller and Hadler (2008) suggest social context influences individuals' environmental attitudes. In a cross-national study the authors focused on environmental fatalism and readiness to act in favor of the environment. At the national level, Haller and Hadler found readiness to act positively correlated and fatalism negatively correlated with level of economic development, supporting the idea that environmentalism is a "postmaterialist" value dependent upon the attainment of some threshold of material well-being.

According to this line of research, values and attitudes remain important concepts in understanding environmentally significant behavior. For purposes of this study I consider values

to be general principles or standards, and attitudes to be beliefs or feelings with regard to some specific item or matter. Together values, attitudes, and beliefs constitute an orientation toward something, or a worldview (Dunlap et al 2000). Based on prior research, I developed the following hypothesis:

H₁: Pro-environmental behavior will be positively related to pro-environmental orientation.

Many researchers have investigated potential links between gender and environmental orientation and behavior with conflicting results. Several studies found gender significant in that women are more likely to express higher levels of environmental concern (Arcury and Christianson 1990; Blaikie 1992; Maineri, Barnett, Valdero, Unipan, and Oskamp 1997) and pro-environmental behavior (Baldassare and Katz 1992; Maineri et al. 1997; Roberts 1993; Steel 1996) than men. Other studies, however, found no gender differences (Blocker and Eckberg 1997; Diamantopoulos, Schlegelmilch, Sinkovics, and Bohlen 2003; Gronhoj and Olander 2007). In a cross-national study Hunter, Hatch and Johnson (2004) found that in many nations, women were more likely than men to perform pro-environmental behaviors in the private sphere (recycling, buying organic food, driving less) but found no gender difference in the performance of public sphere behavior (joining an environmental group, signing a petition, taking part in a protest).

Many other variables have been hypothesized to influence environmental behavior. Stanley and Lasonde (1996) found that people were more likely to engage in environmentally friendly behavior when they had easy access to relevant information and the behavior did not require a financial cost. Roberts (1996) found “perceived consumer effectiveness” to be a significant predictor of pro-environmental behavior; in other words, if people believe their

individual action will make a difference in solving environmental problems they are more likely to perform it. Finger (1994), using the life-history method, found that past experiences with nature or exposure to environmental catastrophes influences environmental behavior. Both structural and social context appear to have an intervening effect by either facilitating or hindering pro-environmental behavior. Derksen and Gartrell (1993) found that positive attitudes toward the environment influenced recycling behavior but only for those with easy access to a recycling program.

Martensson and Pettersson (2003) analyzed life history narratives of individuals in Stockholm to uncover the factors influencing environmental orientation. Results indicate people were influenced by environmentally committed role models, the transition to parenthood, and the general public debate on environmental problems. The researchers also used hypothetical dilemmas to examine participants' rationales for environmentally significant action in the context of everyday life, finding pro-environmental action to be a private matter of individual choice and that individuals tend to undertake specific actions as "targets for environmental friendliness" to which they remained very loyal.

Gronhoj (2006) investigated environmentally significant behavior within the context of the family, examining how families communicate and make decisions about environmentally significant consumption practices. Gronhoj interviewed Danish parents regarding the content of communication between spouses as well as between parents and children, using four vignettes consisting of short descriptions of hypothetical choice situations involving water and energy use, transportation, and household waste. Results indicated that communication focused on problem solving and was usually prompted by concerns for time, taste, convenience, health, and economy and not environmental issues. Gronhoj noted that if only one family member was interested in

environmental issues family discussion of environmental issues was minimal. When couples did discuss an environmental issue it was in the context of the relationship. Most family discussions involving environmental issues occurred between parent and child and were educational in nature.

IDENTITY

Stets and Biga (2003) examined the influence of identity on environmental attitudes and behavior. Results from a survey administered to 437 university students indicate a positive relationship between the environment identity and pro-environmental attitudes and behavior. The authors found that gender was not related to pro-environmental behavior or the environment identity, but that women were more likely to report having an ecological worldview. They also found no correlation between espousing an ecological worldview and pro-environmental behavior. Haanpaa (2007) found green consumption decisions are driven by the desire to have a “green lifestyle” or identity.

Collier and Callero (2005) investigated the process by which high school students developed a commitment to recycling, or adopted the role of recycler. The process consists of three steps: recognition and understanding of the meaning of the role; awareness that the role can be used as a basis for identity; and agreement between the meaning of the role and the meaning of the self. Attitudes and behaviors linked to the role then become linked to the self; it is in this manner that “culture enters the person through cognitive schemata associated with social roles” (p. 55). Based on the above, I developed the following set of hypotheses:

H₂: Women will be more likely than men to report pro-environmental orientation

. H₃: Women will be more likely than men to report pro-environmental behavior.

H₄: Women will be more likely than men to report the environment identity.

H₅: Influence of experiences/role models/events will positively influence the environment identity.

H₆: The environment identity will positively influence pro-environmental orientation.

H₇: The environment identity will positively influence pro-environmental behavior.

Wade-Benzoni, Li, Thompson, and Bazerman (2007) found that “the self-concept of being an environmentalist” (p. 184) is positively associated with environmentally beneficial behaviors. Connolly and Prothero (2008) found green consumers often face dilemmas in their decision-making process because

...compromise and negotiation, which are involved in maintaining social relationships, can place pressure on one’s moral beliefs and on certain types of consumer practices, while at the same time, one’s beliefs or moral stance on specific practices can also challenge and pressure one’s personal relationships. (P. 125)

In these types of situations values associated with green or environmental identity may conflict with values associated with other identities therefore creating an environmental dilemma. Individuals must then choose their behavior according to which identity is most salient in the particular context.

Several researchers have taken an explicitly social constructionist perspective. Moisander and Pesonen (2002) examined two sets of data in order to analyze representations of green consumerism. Textual descriptions of green consumers written by Finnish business students reflect attitudes that it is consumers who have the means and responsibility for environmental protection while more radical approaches to environmentalism are marginalized as deviant. Life histories of Finnish eco-commune inhabitants reflect a search for community and renunciation of

the traditional nuclear family and a desire to change the world not by collective action but by individually “constructing ways of living that are more in harmony with nature” (p. 340).

Autio, Heiskanen, and Heinonen (2009) examined how images of green consumers are constructed by examining the narratives of young Finnish consumers. The authors identified three consumer subject positions: the “Antihero” who does not believe the individual can make a difference; the “Environmental Hero” who favors mainstream green behaviors like recycling and purchasing environmentally friendly products; and the “Anarchist” who is critical of consumer society and supports reducing consumption as a solution to environmental problems. The researchers point out that these narratives contain no temporal references.

Macnaghten (2003) working “for and with Greenpeace” examined individuals’ sentiments toward environmental issues in the UK. Images of global icons representing environmental threats were presented to focus groups. Participants considered the threats distant and abstract and felt detached and disempowered. Images representing human and nature interaction generated feelings of empathetic connection. Macnaghten describes a trend toward the ‘personalization’ of environmental concern in which, for the most part, people are likely to engage with environmental issues only when their life-world is affected.

GRID-GROUP CULTURAL THEORY

In their expansion of grid-group cultural theory Dake and Thompson (1993) empirically tested the principles of grid-group cultural theory using a sample of British households and found their consumption behavior reflected the cultural biases of the five cultural groups. In an attempt to discover what distinguishes environmental activists from the general public, Ellis and Thompson (1997) found grid-group cultural theory provided an effective explanation for environmental preferences. Researchers surveyed members of three environmental groups in the

northwestern United States and a random sample of residents in Salem, Oregon and a nearby rural community, finding a strong positive relationship between egalitarianism and environmentalism among both environmental activists and the general public and a strong negative relationship between individualism and environmentalism. Using regression analysis, Ellis and Thompson found that the cultural biases associated with egalitarianism and individualism explain the greatest amount of variance in environmental attitudes; they also found members of the general public sample tend to identify more as hierarchist and individualist than egalitarian.

Steg and Sievers (2000) applied grid-group cultural theory to a sample of Dutch citizens to examine the relationship between myths of nature and evaluation of policy measures aimed at addressing the environmental consequences of car use. As predicted by grid-group cultural theory, people subscribing to different myths of nature differed in the way they perceived the problems of car use and in their preferences for policy measures aimed at reducing these problems. Those subscribing to the view of nature as ephemeral (egalitarians) were more favorable toward policy measures reducing car use than those who view nature as perverse or tolerant (hierarchists), whereas those who view nature as capricious (fatalists) or as benign (individualists) considered policy measures unnecessary.

Martensson and Pettersson (2003) applied grid-group cultural theory in a survey of Swedish households investigating environmental attitudes and three environmentally significant behaviors in the context of everyday life (recycling, organic food, car travel). Hermits and egalitarians were more likely to engage in recycling behavior, contingent upon an available “recycling infrastructure;” egalitarians were more likely to purchase organically grown food; and household culture had no effect on extent of car use (measured as distance traveled). The study

found no difference in car use between environmentally committed households and environmentally “indifferent” households. Two thirds of car users in the sample acknowledged car use to be environmentally damaging, leading the authors to conclude that the individual benefits of car use outweigh any perceived negative consequences.

Based on these empirical studies grid-group cultural theory does seem to provide a framework conducive to understanding the relationship between environmental attitudes and environmentally significant behavior. Based on this research I developed the following set of hypotheses predicting that cultural group will be linked to pro-environmental orientation, pro-environmental behavior, and environment identity:

- H_{8(a)}: Fatalists will report very low levels of pro-environmental orientation.
- H_{8(b)}: Egalitarians will report high levels of pro-environmental orientation.
- H_{8(c)}: Hierarchists will report moderate levels of pro-environmental orientation.
- H_{8(d)}: Individualists will report low levels of pro-environmental orientation.

- H_{9(a)}: Fatalists will report very low levels of pro-environmental behavior.
- H_{9(b)}: Egalitarians will report high levels of pro-environmental behavior.
- H_{9(c)}: Hierarchists will report moderate levels of pro-environmental behavior.
- H_{9(d)}: Individualists will report low levels of pro-environmental behavior.

- H₁₀: Egalitarians will be more likely to report the environment identity than fatalists, hierarchists, or individualists.

COGNITIVE SOCIOLOGY

In searching for links between environmental attitudes and behavior several researchers have taken a socio-cognitive approach, investigating the processes through which people make environmentally significant decisions. McDonald and Oates (2006) interviewed British consumers regarding how they classified a set of 40 pro-environmental activities relative to perceived effort and perceived positive effect on the environment. Researchers generated a four

cell matrix arranging each activity according to “not much or a lot of effort” and “not much difference or a lot of difference” Participants varied significantly in their perceptions of effort required to perform the activities as well as the difference performing the activities would make on the environment. Only five of the activities were classified consistently in the same positions on the matrix.

Wagner-Tsukamoto and Tadajewski (2006) interviewed British and German consumers to find out how they assess the environmental friendliness of consumer products. Taking a position of “cognitive anthropology” in which cognition and behavior are assumed to be interrelated, researchers found consumers demonstrated varying levels of problem-solving skills: discerning environmentally relevant information from the shopping context, discriminating and prioritizing among green product attributes, and selectively attending to product life cycle information.

Sirsi, Ward and Reingen (1996) performed an ethnographic study of cognitive diversity among two “micro-cultures bound together by a desire for alternative foods” (349). Researchers compared how animal rights activists and macrobiotics classified food products as either acceptable or not acceptable for consumption differently. Researchers illustrated that participants’ belief systems were culturally based by constructing “socio-cognitive maps” illustrating the network of social ties connecting individuals with shared beliefs within the two cultures.

Connolly and Prothero (2003) conducted phenomenological interviews with a small sample of Irish consumers in order to investigate the meanings behind environmentally significant consumer decisions. None of the participants viewed their consumption patterns as contributing to environmental problems, confining environmental problems to issues of recycling

and waste. Personal experiences with nature influenced participants' perspectives on the environment as well as their actions. The meanings participants attached to products and behavior had more to do with their signifying value than their use value. Environmentally responsible consumption was used as a means of constructing and projecting a self identity. Researchers described one participant as using the environment as a commodity "to communicate certain meanings that create the identity he desires" (p. 286).

Norgaard (2006) investigated the disconnect between attitudes and behavior in her ethnography of a rural Norwegian community whose citizens failed to mount any public response in the face of undeniable evidence of global warming. Community members managed their emotions using the cognitive strategies of selective attention and perspectival selectivity, engaging in "collective avoiding" or, as Zerubavel (2002) would describe it, the "social organization of denial."

These studies illustrate a few of the ways in which cognition and culture are interrelated. Based on grid-group cultural theory I anticipated that each cultural group would construct a distinctive environmental socio-cognitive schema which led to the following qualitative research question:

RQ: How do members of these four cultural groups use the six cognitive acts to construct an environmental socio-cognitive schema?

Much of the prior research on environmental attitudes and behavior has been conducted at the individual level. The basic component of cultural theory is that much of what is assumed to be individual characteristics such as beliefs and values comes from social interaction; "people discover their preferences by establishing their social relations" (Dake and Thompson 1999: 417). Grid-group cultural theory requires a shift in perspective from "people are all the same" to "people

are different in a small number of ways” (p. 419). Prior research suggests a consensus of pro-environmental attitudes; yet underlying such broadly shared environmental concerns are quite different conceptions regarding the relationship between humans and the environment, what constitutes an environmental problem, as well as how environmental problems should be handled. I believed that partitioning the sample according to cultural group and then applying a social cognitive framework would reveal how members of each of these different thought communities construct their preferences, or attitudes and beliefs, so as to justify and maintain their preferred pattern of social relationships. This study was designed to elicit barriers to pro-environmental action and to uncover explanatory factors underlying the environmental attitude-behavior gap. Figure 3.1 presents a heuristic model of the factors influencing pro-environmental behavior.

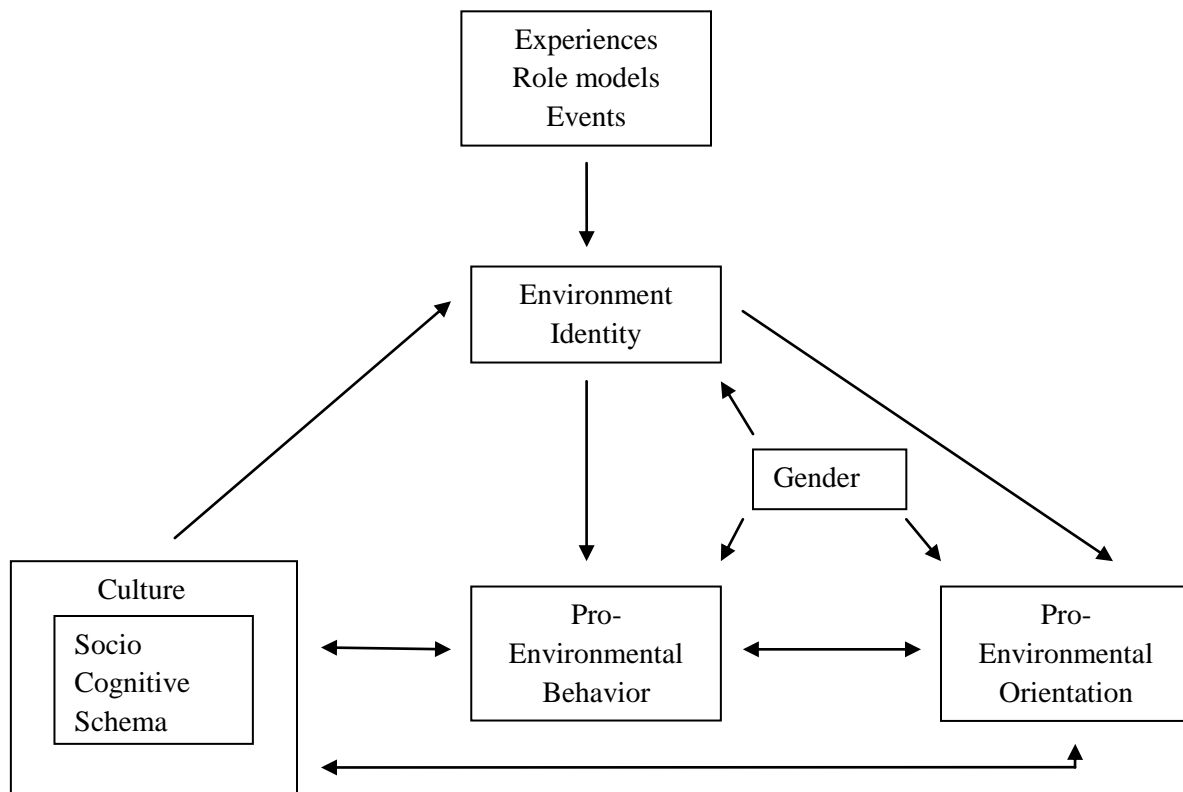


Figure 3.1 Factors Influencing Pro-Environmental Behavior

This study attempts to show that perceptions about environmental risks and responsibilities are embedded in one's cultural orientation rather than being the product of generalized psychological predispositions or a function of one's level of environmental awareness and/or information. It is my belief that an understanding of the environmental socio-cognitive schemas associated with each cultural group will better illuminate the processes underlying the relationships between the factors hypothesized to influence pro-environmental behavior.

CHAPTER FOUR

METHODS

This study was an embedded correlational mixed method design, in which both quantitative and qualitative data were collected at the same time through an on-line survey instrument consisting of both closed ended and open ended questions. Combining quantitative and qualitative research techniques allowed me to go beyond mere description of inter-group differences in environmental attitudes and environmentally significant behavior and to explain those differences. This technique enabled me to access a large nationally representative sample of actual consumers, those whose behavior is most relevant to answering the research question.

DATA COLLECTION

The survey instrument was administered through on-line survey tool *Zoomerang* in the summer of 2010. A total of 400 questionnaires was completed by a sample selected from the survey tool's nationally representative on-line panel. The sample size was determined via an *a priori* power analysis in order to provide acceptable statistical power (.80) for detecting a moderate correlation, $r = .30$, at the two-tailed .05 level of significance (Kraemer and Thiemann 1987; Onwuegbuzie and Collins 2007).

THE INSTRUMENT

The survey instrument consisted of seven parts and included 78 questions; 21 open ended and 57 closed ended. The first part presented the Informed Consent Form (Appendix A). After reading the consent form participants were asked the question: "If you agree to participate in this research please answer yes." Response choices included yes and no. Upon answering yes, participants were presented with the rest of the survey instrument (Appendix B). The second

part contained 21 open ended questions which allowed for responses of up to 350 words each. Parts Four through Six contained between seven and 15 questions each, with Likert-style response choices, that asked participants about their cultural and environmental attitudes and behavioral intentions. Part Seven contained 10 demographic questions, including whether or not the participant was a member of any environmental group.

THE SAMPLE

Of the 400 participants who completed the online survey, 57.5 percent were women. Participants were diverse regarding various demographic characteristics (See Table 4.1). Ages ranged from 18 to 84. Just over 75 percent of participants were white; 9.8 percent were black; 8.4 percent were Hispanic; and 4.0 percent were Asian. Most participants had at least some college education; only 14.8 percent had a high school education or less. Household income levels of participants varied as well; 17.1 percent of participant households reported annual income of under \$20,000; 26.6 percent reported annual income between \$20,001 and \$45,000; 27.5 percent reported income between \$45,001 and \$70,000; and 28.9 percent reported more than \$70,000 in annual income. Almost 55 percent of participants were married, while 39 percent were single. The average household size was 2.75. Just over 69 percent of participants had children. The majority (79.2 percent) of participants lived in an urban/suburban area. A small percentage of participants (9.2) reported belonging to an environmental organization. Two important differences between this sample and the U.S. population are in the level of educational attainment; 37.2 percent of Americans have a high school education or less, compared to 14.8 percent of the sample. This difference could be due to the use of an on-line data collection method. An additional difference is that 15.9 percent of Americans report belonging to an environmental organization (Dalton 2005), compared to 9.2 percent of the sample.

Table 4. 1 Sample Demographics

N=400

	<u>Sample</u>		<u>U.S.</u>
	<u>N</u>	<u>%</u>	<u>%</u>
<u>Age</u>			
18 - 25	62	15.6	15.4
26 - 35	97	24.3	17.8
36 - 45	80	19.9	19.0
46 - 55	68	16.8	19.1
56 - 65	54	13.6	14.3
66+	39	9.8	14.4
<u>Gender</u>			
Women	230	57.5	50.7
Men	170	42.5	49.3
<u>Race/Ethnicity</u>			
White	300	75.1	65.0
Black	39	9.8	12.4
Hispanic	34	8.4	15.1
Asian	16	4.0	4.4
Native American	4	0.9	0.8
Other	7	1.8	2.3
<u>Education</u>			
High School or Less	59	14.7	37.2
Some College	131	32.7	21.0
Associate's Degree	44	11.1	9.4
Bachelor's Degree	113	28.2	21.5
Graduate Degree	53	13.3	10.9
<u>HH Income</u>			
\$20,000 or less	68	17.0	18.9
\$20,001 - \$45,000	106	26.6	20.3
\$45,001 - \$70,000	110	27.5	24.5
\$70,001 - \$99,999	66	16.5	16.0
\$100,000 +	50	12.4	20.3
<u>Relationship Status</u>			
Single	157	39.3	39.0
Married	218	54.6	54.4
Cohabiting	25	6.1	6.6

Table 4.1 Sample Demographics Cont'd N = 400

	<u>Sample</u>		<u>U.S.</u>
	<u>N</u>	<u>%</u>	<u>%</u>
<u>Number of Children</u>			
None	163	40.5	40.1
One	57	14.3	25.8
Two	103	25.8	22.0
Three	46	11.6	8.6
More than Three	31	7.8	3.5
<u>Number in Household</u>			
One	69	17.3	25.8
Two	146	36.4	33.8
Three	72	17.9	16.5
Four	65	16.3	13.6
Five or More	48	12.1	10.3
<u>Area</u>			
Urban/Suburban	317	79.2	79.2
Rural	83	20.8	20.8
<u>Environmental Group</u>			
Yes	37	9.2	15.9
No	363	90.8	84.1

Source: US Census, Dalton (2005).

OPERATIONALIZATION OF QUANTITATIVE VARIABLES

The variables for this project assessed participants' beliefs, attitudes, and behaviors relative to the environment. Some variables were derived from a single questionnaire item, while others were constructed from a series of questionnaire responses that reflect the underlying factors of established attitudinal and behavioral scales.

Cultural group refers to Dake and Thompson's (1993) typology of the ways of conceptualizing resources and needs and the associated behavioral strategies for managing them in the context of everyday life. Rippl (2002), improving upon the original questionnaire, developed and validated a new instrument for assessing cultural group membership. Correlation

analysis demonstrates high goodness-of-fit indices (GFI) for the four cultural biases measured in this study: fatalist 0.99; egalitarian 0.96; hierarchical 0.98; and individualist 1.00. Attributes of this variable were derived from responses to Part Two of the survey instrument.

Pro-environmental orientation refers to individuals' values, attitudes, and beliefs toward the environment. Pro-environmental orientation was measured by the widely accepted revised New Ecological Paradigm Scale (Dunlap, Van Liere, Mertig, and Jones 2000). Originally developed in 1978 (Dunlap and Van Liere), the 15-item revised version has high internal consistency (alpha of .83) and its validity has been established by dozens of studies (see Dunlap et al. 2000). Attributes of this variable were derived from responses to Part Three of the survey instrument.

Environment identity refers to the meanings associated with an individual's relationship to the environment (Burke and Stets 2009; Stets and Biga 2003; Weigert 1997). Environment identity was measured by Stets and Biga's (2003) Environment Identity Scale, an 11-item bipolar scale with which respondents assessed their position in relation to the environment. This scale has an omega reliability of .91 (Stets and Biga 2003). Attributes of this variable were derived from responses to Part Four of the survey instrument.

I utilized two measures to assess participants' *pro-environmental behavior*. The first measure was a single indicator I constructed from summing the responses to the open-ended question in Part One of the survey instrument: "Which environmentally friendly behaviors do you perform on a regular basis?" The second measure was a seven-item scale (Dunlap and Scarce 1991) that reflects the degree to which respondents take action to protect the environment (although three of the items are behavioral intention items). Stets and Biga (2003) report omega

reliability for this scale of .68. Attributes for the Dunlap and Scarce scale were derived from responses to Part Five of the survey instrument.

The variable *experiences/role models/events* refers to participants' attribution of environmental influence from experiences, role models, or events. *Experiences/role models/events* is a categorical variable constructed from participants' responses to the open-ended question: "What experiences, role models, or events have influenced your feelings toward the environment?"

QUANTITATIVE METHODS OF DATA ANALYSIS

I coded and entered data from the 400 questionnaires into SPSS 17.0 during the Fall of 2010. The quantitative and qualitative data were analyzed separately and concurrently. I used descriptive statistics to organize and summarize the quantitative data. I used t-tests, and correlation and multiple regression analyses to examine the relationships between the variables proposed in Hypotheses One through Seven. I examined three regression equations, one with pro-environmental orientation as the dependent variable, one with pro-environmental behavior as the dependent variable and one with the environment identity as the dependent variable. In order to determine if the relationships between pro-environmental orientation, pro-environmental behavior, and environment identity differed according to cultural group, as proposed in Hypotheses Eight, Nine, and Ten, I used one way analysis of variance (ANOVA).

QUALITATIVE METHODS OF DATA ANALYSIS

The substantive theoretical goal of this study was to explain the gap between attitudes and behavior by examining the meanings people ascribe to the natural environment, factors that influence their performance of environmentally significant behavior and their explanations and justifications for such. An associated, yet more formal, theoretical goal of the study was to

examine how culture and cognition together construct social life. The pursuit of these goals required detailed analysis of people's words and expressions; their use of language. Language is fundamental to understanding social reality (Berger and Luckmann 1966), as it is an "objective repository of vast accumulations of meaning and experience, which it can then preserve in time and transmit to following generations" (p. 37).

Grounded theory methods are particularly suited to theoretical analysis of textual data. Utilizing GTM in conjunction with quantitative methods significantly increases the explanatory potential of the research program. Since their "discovery" in 1967 by Glaser and Strauss, GTM have been fine-tuned (Corbin and Strauss 1990), clarified (LaRossa 2005), updated (Charmaz 2006), and pushed around the postmodern turn (Clarke 2005). While there are differences of opinion regarding various aspects of GTM, according to LaRossa (2005), there are five key elements:

- a. Language is central to social life.
 - b. Words are the indicators upon which GTM-derived theories are formed.
 - c. Coding and explanation are built upon a series of empirical and conceptual comparisons.
 - d. Theories are sets of interrelated propositions, whereas propositions state how variables are related.
 - e. There is value in choosing one variable from among the many variables that a grounded theoretical analysis may generate and making that variable central when engaged in theoretical writing. It will serve as the backbone of a researcher's "story."
- (P. 838).

The textual data for GTM analysis came from participant responses to the 21 open ended survey questions. The length of the responses varied widely among participants; some wrote brief responses, some wrote quite lengthy responses, with the average length of response being six to seven sentences per question. Coding is the foundation of GTM; meticulous coding is of crucial importance to the research project. According to Strauss, "[t]he excellence of the research

rests in large part on the excellence of the coding” (1987:27). There are three generally accepted phases of coding: open, axial, and selective. Although open coding is the starting point of analysis, these phases are not rigidly ordered; the researcher traverses back and forth, recoding and reanalyzing and even collecting new data. Each coding phase contributes substantially to the development of theory.

Open Coding

During the open coding phase, the researcher closely examines the data using the variable-concept-indicator model. Glaser and Strauss assert that theory derives from an intimate relationship with the data (Strauss 1987), requiring the researcher to become immersed in the text, studying it line-by-line. This level of attention enables the researcher to consider potential connections and hypotheses, important elements of theory. Concepts are linked to indicators (words or series of words) which are subjected to constant comparison until the concept is specifically defined (LaRossa 2005). These concepts provide density and support for the developing theory. The act of comparison requires the researcher to fully define the concepts, differentiate between them and consider if and how concepts are related to each other -- a necessary step in theory construction. Variables are developed by dimensionalizing concepts, or arranging similar concepts in an array. These concepts and resulting variables form the nucleus of the theory. As Strauss quotes Glaser: “concepts and their dimensions have *earned* their way into the theory by systematic generation from data...” (1987: 26).

I began the open coding process by examining each response using the variable-concept-indicator model. Since data organization is crucial to successfully using GTM, I developed a funnel approach: I analyzed the responses to each question line-by-line, marking up the text, identifying indicators and their associated concepts. I then wrote a memo for each

participant's set of responses detailing concepts, possible variables, and ideas for potential linkages. One variable that became evident early on in the analysis was *volume of environmental discourse*; it appeared at least once in almost every set of responses. This variable has three concepts: low, medium, and high. Indicators include: "I haven't heard much about"; "my coworkers talk about these issues sometimes"; "I hear something related to it every day." Table 4.2 provides an illustration of the variable-concept-indicator model for this variable.

Table 4.2 Indicator-Concept-Variable Model

Variable:	Volume of Environmental Discourse
Concept (a):	Low
Indicator:	People do not hear that much about I haven't heard much about
Concept (b):	Medium
Indicator:	I have heard some on this My coworkers talk about these issues sometimes In the news off and on for years
Concept (c):	High
Indicator:	I hear it all the time on the news Everybody has been talking about it I hear something related to it everyday The media is infatuated with this story All over the news Almost every day on the news My father talks about it constantly Everyday CNN has a story on it DiCaprio's twitter keeps talking about it

Axial Coding

During axial coding hypotheses are developed and statements about relationships between variables are explored. It is in discovering how the variables are related that, in GTM, theory is generated. (GTM were designed to generate *explanatory* hypotheses). The more linkages there are between variables, the denser the theory is (Strauss 1987). Since axial coding is often performed simultaneously with open coding, theory is verified as the tentative linkages are evaluated during successive phases of collecting, coding, and comparing new data. Integration occurs as linkages become more apparent. Since establishing relationships between variables results in theory and it is during axial coding that these relationships are revealed, axial coding can be considered to be “the phase at which GTM research begins to fulfill its theoretical promise” (LaRossa 2005: 849).

One at a time, focal variables are temporarily placed at the center of analysis, and potential linkages with other variables are sought (LaRossa 2005). As is often the case, the process of open coding generated preliminary suggestions about possible relationships which I kept in the back of my mind while I followed the procedures specified by Glaser (1978): searching for causes, contexts, contingencies, consequences, covariances, and conditions; paying attention to process; and looking out for strategies and tactics. In order to more easily visualize the potential relationships among variables, I wrote the variables on construction paper which I then cut out and manipulated like pieces of a jigsaw puzzle. As I considered various variables in turn, many relationships appeared, such as:

1. Level of trust in sources of environmental information influences level of environmental knowledge.
2. Level of anthropocentrism influences ways in which the environment has significance.

3. Level of environmental consciousness affects perception of current environmental conditions and perception of future environmental conditions.

Selective Coding

Selective coding takes place as the researcher crafts the storyline supported by the data. The crucial component during this phase of GTM is the selection of the core variable. According to Glaser, as quoted in Strauss (1987), the core variable (category) accounts for most of the variation within a phenomenon. Characteristics of the core variable include centrality, frequent appearance in the data, easy relation to other variables (categories), as well as having a clear implication for a more abstract theory (36). The core variable should efficiently integrate the theory. With these criteria in mind, I returned to my preliminary construction paper model to determine which variables had “the most connections” (LaRossa 2005:851).

I identified the variable *proximity of environmental issues* as the core variable. This variable refers to the distance participants perceive themselves to be from environmental issues, from near to far. This variable arises from the cognitive act of focusing – making one thing the center of interest while relegating other things to a position of less interest. Environmental issues can be perceived as near, and positioned in the foreground, or far away, and positioned in the background. According to Zerubavel (1997) our “mental horizons” proscribe the limits of that to which we pay attention. Several respondents discussed taking a broader perspective, for example:

It amazes me daily and also concerns me each time I take out the trash. I do not know where it is all going to go and when I look at it from a bigger picture it is a major concern of mine.

We are so consumed by our own little worlds and forget the “bigger picture.”

These environmental horizons have a temporal frame, extending as far as participants' perceptions of the future. Participants had various ways of chronometricalizing (LaRossa and Reitzes 2001) the future: a few years, decades, generations, lifetimes, centuries, eons. This distance was often expressed in terms of the extent to which respondents have been or expect to be affected by environmental issues. Some perceived environmental issues to be close at hand, having already experienced them:

I believe that chemical dumping is especially important. It can cause many problems in humans, wildlife, and marine life. My family was personally affected by chemical dumping in Paris Island, North Carolina. My father was diagnosed with bladder cancer due to contaminated water where he did his Marine Corps basic training. The drinking water was contaminated and so was the water the dry cleaners used to clean the marines' uniforms. This is a major environmental issue that has affected me and is still affecting people's lives today.

Others perceived environmental issues to be "so far from reach [they have] no immediate effect on me." As befitting a core variable, the variable *proximity of environmental issues* is central to the model of environmentally significant behavior. It appears frequently in the data, is related to a significant number of other variables, and provides "a considerable degree of cumulative integration" (Strauss 1987:74).

I chose a mixed method design for this study because I felt it would generate a unique data set especially fruitful for examining the attitude-behavior gap relative to the environment. Prior studies have either analyzed quantitative data from large samples or qualitative data from small samples. I believe combining the two methods through the use of the on-line survey tool *Zoomerang* enabled me to capture data that is both complex and revealing and at the same time provides information about the distribution of responses in a nationally representative population.

CHAPTER FIVE

QUANTITATIVE ANALYSIS PART I: DESCRIPTIVE STATISTICS

Descriptive statistics were applied to the sample as a whole (See Table 5.1). The mean score on the scale for *pro-environmental orientation*, with possible values that range from 15 to 75, was 54.44. More than half (52.9 percent) of participants' scores were in the third quartile of the scale (between 45 and 59), while another 30.6 percent of scores were in the top quartile (between 60 and 75). The mean score for the entire sample of this study, averaged across the 15 items, was 3.63 out of a possible 5.00. Compared to the averaged mean scores of several recent studies, (Cordano, Welcomer, and Sherer 2003, $M = 4.70$), (LaLonde and Jackson 2002, $M = 4.19$), and (Rauwald and Moore 2002, $M = 3.81$), values for the variable, *pro-environmental orientation*, in this study were relatively low. The independent-samples t-test revealed no significant difference in scores for men ($M = 53.21$, $SD = 11.67$) and women [$M = 55.35$, $SD = 9.33$; $t(271.76) = 1.83$, $p = .07$]. The magnitude of the differences in the means was very small ($\eta^2 = .008$) (See Table 5.2). This preliminary analysis indicates a lack of support for Hypothesis Two, which examined the influence of gender on pro-environmental orientation.

I was surprised that pro-environmental orientation was this low given the timing of the project. Survey data were collected between July 13 and July 31, 2010, amidst ongoing news coverage of the BP Oil Spill in the Gulf of Mexico. This oil spill began on April 20 with the explosion of the Deepwater Horizon oil rig and continued until July 15, discharging an estimated 185 million gallons of oil into the gulf (Crone and Tolstoy 2010). The oil spill dominated mainstream news coverage during the 100-day period from April 20 through July 28. According to an extensive media analysis performed by the Pew Research Center's Project for Excellence in Journalism, the story of the oil spill represented "an extraordinary run of coverage," accounting

Table 5.1 Descriptive Statistics N= 400

Means and Standard Deviations		
	M	SD
Pro-environmental Orientation	54.44	10.43
Environment Identity	43.23	7.15
Pro-environmental Behavior Scale	8.39	2.33
Pro-environmental Behavior Text	2.41	2.18
Frequencies		
	%	N
<u>Pro-environmental Orientation</u>		
15 - 29	1.5	6
30 - 44	15.0	60
45 - 59	52.9	212
60 - 75	30.6	122
<u>Environment Identity</u>		
11 -21	2.0	8
22 - 32	10.4	42
33 - 43	36.7	147
44 - 55	50.9	203
<u>Pro-environmental Behavior Scale</u>		
2 - 4	5.5	22
5 - 7	28.5	114
8 - 10	48.6	195
11 - 13	17.3	69
<u>Pro-environmental Behavior Text</u>		
0	9.8	39
1	31.5	127
2	22.3	89
3	13.3	53
4	10.7	43
5	6.6	26
6 +	5.8	23

for 22 percent of the newshole for the 100-day period and 38 percent of the newshole during the four week time period from May 24 to June 20 (2010:1). The term *newshole* refers to the amount

of print-space or air-time available for news reporting (Yee 2003). The disaster commanded a significant amount of television coverage: 29 percent of the newshole for network channels and 31 percent of the newshole for cable channels (Pew 2010). CNN alone devoted 42 percent of its newshole to the oil spill during the period from April 20 to July 28 (Pew 2010). During the period in which data were collected, news coverage of the oil spill was still significant, although rapidly declining, accounting for 20 percent of the newshole during the week beginning July 12 and 12 percent during the week beginning July 19. Figure 5.1 illustrates the media coverage as a percentage of newshole during the period April 20 to July 26.

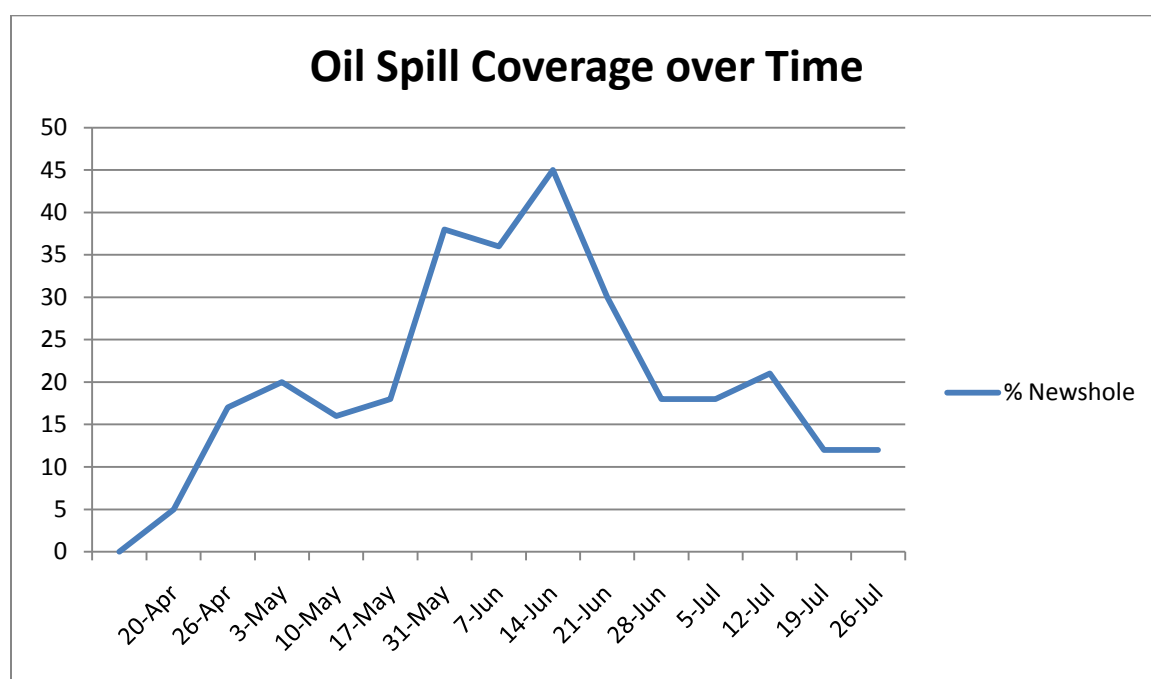


Figure 5.1 Oil Spill Coverage over Time

Source: Pew Research Center's Project for Excellence in Journalism (2010)

Pew researchers characterized public interest in the oil disaster as “extremely high” from April 26th on, as evidenced by survey research in which 44 percent to 59 percent of respondents reported that they were following events in the Gulf very closely (Pew 2010). Although news

coverage of the oil spill leveled off in July, the percentage of those paying very close attention to the story remained near peak levels. I had anticipated that the volume of media coverage of this environmental disaster might act as a priming agent in raising participants' levels of pro-environmental orientation; however that appears not to have been the case.

The mean score on the scale for *environment identity*, with possible values that range from 11 to 55, was 43.23. More than one third (36.7 percent) of participants' scores were in the third quartile of the scale (between 33 and 43), while another 50.9 percent of scores were in the top quartile (between 44 and 55). The mean score for the entire sample of this study, averaged across the 11 items, was 3.93 out of a possible 5.00, consistent with Stets and Biga's (2003) averaged mean score of 3.99. The independent-samples t-test revealed no significant difference in the mean scores for men ($M=42.41$, $SD=7.00$) and women [$M=43.83$, $SD=7.22$; $t(344.0)=1.84$, $p=.07$]. The magnitude of the differences in the means was very small (eta squared=.008). (See Table 5.2). This preliminary analysis indicates a lack of support for Hypothesis Four which examined the influence of gender on environment identity.

The mean score on the Dunlap and Scarce environmental behavior scale, with possible values that range from 2 to 13, was 8.39. About one third of participants' scores were in the bottom two quartiles (7 or less), 48.6 percent were in the third quartile (between 8 and 10), and 17.3 percent were in the top quartile (between 11 and 13). These scores are consistent with those found in other recent studies (Hunter, Hatch, and Johnson 2004; Stets and Biga 2003). The independent-samples t-test revealed no significant difference in the mean scores for men ($M= 8.41$, $SD=2.53$) and women [$M=8.38$, $SD=2.18$; $t(344.0)=0.15$, $p=.88$]. The magnitude of the differences in the means was very small (eta squared=.0001). (See Table 5.2). This

preliminary analysis indicates a lack of support for Hypothesis Three which examined the influence of gender on pro-environmental behavior.

Since the purpose of this study was to examine the gap between pro-environmental attitudes and pro-environmental behavior, the measurement of the concept pro-environmental behavior was of crucial importance, requiring a valid measure that effectively reflected the meaning of the concept. It is my contention that three of the seven items on the Dunlap and Scarce scale measure behavioral intent, such as “I would be willing to give up convenience products and services I now enjoy if it meant helping to preserve our natural environment.” However, to better address the research question, I wanted to examine how much pro-environmental behavior participants actually perform and so I used an additional behavior-based measure of pro-environmental behavior consisting of a single indicator constructed by adding the number of participants’ responses to the open ended question: “Which environmentally friendly behaviors do you perform on a regular basis?” Scores on this measure ranged from 0 to 20, with a mean of 2.41. The independent-samples t-test revealed there was a significant difference in scores for men ($M=1.85$, $SD=1.40$) and women [$M=2.83$, $SD=2.54$; $t(320.7)=4.59$, $p<.001$]. The magnitude of the differences in the means was moderate (eta squared=.050) (See Table 5.2). The mean score for women (2.83) was 53 percent higher than that for men (1.85) ($p<.001$). This preliminary analysis contradicts the finding of a lack of support for Hypothesis Three discussed earlier and indicates support for Hypothesis Three when the alternative measure of pro-environmental behavior is used.

In order to investigate the relationship between the pro-environmental behavior variable measured by the Dunlap and Scarce scale and that generated by the responses to the open ended survey question, I calculated the Pearson product moment correlation coefficient. There was a

weak, positive relationship between the two variables ($r = .215, p < .01$). The coefficient of determination indicates that the two variables share only 4.6 percent of their variance. In this study, both measures of the concept pro-environmental behavior, the Dunlap and Scarce scale and the measure constructed from the open-ended responses, were used independently for analysis and will be referred to as *pro-environmental behavior scale*, and *pro-environmental behavior text*.

Table 5.2 T-Tests by Gender

	<u>N</u>	<u>Mean</u>	<u>SD</u>	<u>t</u>	<u>Sig</u>		
<u>Pro-environmental Orientation</u>							
Men	170	53.21	11.67	1.83	0.069		
Women	230	55.35	9.33				
Equal variances not assumed							
<u>Environment Identity</u>							
Men	170	42.41	7.00	1.84	0.067		
Women	230	43.83	7.22				
Equal variances assumed							
<u>Pro-environmental Behavior Scale</u>							
Men	170	8.41	2.53	0.15	0.881		
Women	230	8.38	2.18				
Equal variances assumed							
<u>Pro-environmental Behavior Text</u>							
Men	170	1.85	1.40	4.59	0.000	***	
Women	230	2.83	2.54				
Equal variances not assumed							

* $p<.05$, ** $p<.01$,*** $p<.001$

* $p < .05$, ** $p < .01$, *** $p < .001$

As illustrated in Table 5.3, close to 10 percent of participants reported not performing any environmentally friendly behaviors, 31.5 percent reported one behavior, 22.3 percent reported two behaviors, 13.3 percent reported performing three behaviors, 10.7 percent reported

four behaviors, 6.6 percent reported five behaviors, and 5.8 percent reported performing six or more environmentally friendly behaviors.

As shown in Table 5.4, recycling was by far the most frequently reported behavior: 63 percent of participants recycled, a figure that is consistent with a recent Harris poll in which 68 percent of respondents indicated that they always or often recycle (Harris 2009). Of those who reported performing only one behavior, 68 percent reported recycling. The next most frequently cited behaviors were conserving electricity (70 participants), driving less (54 participants), and

Table 5.3 Number of
Pro-Environmental Behaviors

Number of Behaviors	%	N
0	9.8	39
1	31.5	126
2	22.3	89
3	13.3	53
4	10.7	43
5	6.6	25
6	1.4	6
7	1.3	5
8	0.9	4
9	0.9	4
10	0.9	4
12	0.2	1
20	0.2	1

conserving water (42 participants). Other reported environmentally friendly behaviors include re-using items (28 participants), using energy efficient light bulbs (27 participants), not littering (24 participants), using cloth shopping bags (21 participants), and buying environmentally friendly appliances (20 participants.) Twenty participants said they car-pooled, seventeen said they chose to walk instead of drive, fifteen said they took public transportation, and thirteen said they drove an energy efficient car. The category “other various” contains assorted behaviors

reported infrequently, including: buying locally produced products (5 participants), using less plastic (5 participants), using rain water for irrigation (4 participants), planting trees

Table 5.4 Regularly Performed Pro-
Environmental Behaviors

<u>Behavior</u>	<u>Participants Reporting</u>
Recycling only	85
Recycling also	167
Conserving electricity	70
Driving less	54
Conserving water	42
Re-using items	28
Energy efficient light bulbs	27
Not littering	24
Cloth shopping bags	21
Car-pooling	20
Energy efficient appliances	20
Using "green" household products	19
Walking	17
Public transportation	15
Pick up litter	15
Composting	14
Energy efficient car	13
Limiting consumption	10
Riding bike	10
Using less paper	10
Energy saving home improvements	10
Growing own food	9
Purchasing organic food	9
Using few disposable products	9
Properly disposing of batteries	9
Educating others	7
Other various	<u>61</u>
Total reported behaviors	795

(4 participants), buying used items (4 participants), being a vegetarian (3 participants), not having children (1 participant), not owning a car (1 participant), voting (1 participant), and praying (1 participant).

The New Ecological Paradigm Scale, which assesses pro-environmental orientation, contains one factor that I examined individually. This factor was measured by the level of agreement with the following statement: “The so-called ecological crisis facing humankind has been greatly exaggerated.” Responses were coded: from 1) Strongly agree to 5) Strongly Disagree. Almost one quarter of participants (23.7 percent) agreed with the statement, while an additional 21.4 percent neither agreed nor disagreed. Less than 55 percent of participants disagreed that the ecological crisis has been exaggerated.

Declines in public confidence about the evidence for environmental deterioration have been documented in both the United States and in Britain. A recent study conducted by the Yale Project on Climate Change and the George Mason University Center for Climate Change Communication (Leiserowitz, Maibach, and Roser-Renouf 2010) found the percentage of respondents answering yes to the question: “Do you think that global warming is happening?” in 2010 (57 percent) has declined 20 percent compared to the percentage of respondents answering yes to the question in 2008 (71 percent). Similar results were found in a British study (Spence, Venables, Pidgeon, Pootinga, and Demski 2010) in which respondents who answered yes to the question: “As far as you know, do you personally think the world’s climate is changing?” decreased from 91 percent in 2005 to 78 percent in 2010. Additionally, 40 percent of British respondents agreed with the statement: “The seriousness of climate change is exaggerated.”

According to Jacques and his colleagues (Jacques 2006, 2008; Jacques, Dunlap, and Freeman 2008), such declining confidence can be attributed to *environmental skepticism*, “an ideological force marshaled to defend modern capitalist accumulation and its attendant institutions through a conservative counter-movement that opposes the growing global

environmental movements” (Jacques 2008:8). Proponents of environmental skepticism view environmental issues such as threats to biodiversity or global warming as false, manufactured in order to generate fear. Counter intuitively, the term, environmental skepticism, does not reflect a position of withholding judgment until more compelling evidence is provided. Instead, environmental skepticism is a “project” that repudiates mainstream environmental claims and supports contemporary conservative values and issues, with the goal of forestalling environmental policy-making and regulation (Jacques, Dunlap, and Freeman 2008).

The discourse of environmental skepticism is an example of the social construction of “non-problematicity” (Freudenburg 2000; McCright and Dunlap 2000, 2003), in contrast to the social construction of social problems (Spector and Kitsuse 1987). McCright and Dunlap (2003) illustrate the process by which a countermovement attempts to “delegitimize a social problem once it has already gained a place on the agenda” (p. 353). Powerful interests manage to define such conditions as non-problematic by the strategic use of “diversionary reframing” in which negative environmental conditions are redefined as non-problematic. McCright and Dunlap (2000, 2003) demonstrate how a conservative countermovement successfully challenged the established problematicity of global warming, first, by claiming that the scientific evidence for global warming is weak, if not false; and secondly, by arguing that the net effect of global warming would be beneficial should it occur.

The variable *experiences/role models/events* refers to the level and types of influence that have affected participants’ feelings toward the environment. More than 21 percent of participants reported that their feelings toward the environment have not been influenced at all by other

individuals, personal experiences, or particular events (See Table 5.5). Just under 49 percent of participants reported having one influence, 19.4 percent reported two influences, and 10.7 percent reported that several factors influenced their feelings toward the environment.

Table 5.5 No. of Experiences/Role Models/Events

<u>Number of Influences</u>	<u>%</u>	<u>N</u>
0	21.1	84
1	48.8	195
2	19.4	78
3	7.8	31
4	2.0	8
5	0.3	1
6	0.6	2

Participants varied widely in their responses to the question: “What experiences, role models, or events have influenced your feelings toward the environment?” (See Table 5.6). The most frequently cited influences were personal observation of environmental deterioration (46) and childhood experiences (45), either in the context of growing up (34) or participating in Boy or Girl Scouts (11). Other frequently cited influences include family members (39) and media (39). Only 33 out of 400 participants cited the BP Oil spill as having an influence on their feelings toward the environment which again is surprising, given the substantial amount of media coverage the spill generated during the period in which data were collected. The spill was sixth on the list of experiences/role models/events. Some participants (37) reported being influenced by classes they had taken in high school or college. Some participants (24) cited Al Gore and his work on global climate change as an influence. Several other well-known activists

Table 5.6 Types of Influences of Experiences/Role Models/Events

<u>Influence</u>	<u>Participants Reporting</u>
Observation of deterioration	46
Family members	39
High school or college classes	37
Media	37
Childhood experiences	34
BP Oil spill	33
Outdoor activities	26
Al Gore	24
Other well-known activists	22
Historical events or disasters	12
Boy or Girl Scouts	11
Travel	10
Love of animals	10
Religion	9
Friends	9
Environmental organizations	7
Other various	<u>33</u>
Total reported influences	398

were cited as well (22). Only a few participants (7) mentioned being influenced by environmental organizations.

I had no way of predicting ahead of time the distribution of participants among the four attributes of the variable *cultural group*. Participants were sorted into cultural groups according to their responses to Part Two of the survey instrument. The most populated category of cultural group was hierarchist (43.5 percent), followed by individualist (34.1 percent), and egalitarian (21.4 percent) (See Table 5.7). The least populated cultural group was the fatalist; about one percent of participants (5) were assessed as belonging to the fatalist cultural group. As a result, this category did not meet the sample size requirement determined via the *a priori* power

Table 5.7 Distribution of Cultural Groups

<u>Cultural Group</u>	<u>%</u>	<u>N</u>
Hierarchist	43.5	174
Individualist	34.1	135
Egalitarian	21.4	86
Fatalist	1.0	5

analysis in order to provide an acceptable level of statistical analytical power. The participants falling into the cultural group category of fatalist have been eliminated from the sample for analysis of group variances.

CHAPTER SIX

QUANTITATIVE ANALYSIS PART II: RESULTS OF HYPOTHESES TESTS

This chapter presents the correlations among variables and the results of additional quantitative analyses performed relative to the proposed hypotheses. Hypothesis One examined the relationship between pro-environmental behavior and pro-environmental orientation. Hypotheses Two, Three, and Four examined the influence of gender on pro-environmental orientation, pro-environmental behavior, and environment identity. Hypothesis Five examined the influence of experiences/role models/events on environment identity. Hypotheses Six and Seven examined the relationships between environment identity and pro-environmental orientation and pro-environmental behavior. Hypotheses Eight, Nine, and Ten examined differences among cultural groups regarding pro-environmental orientation, pro-environmental behavior, and environment identity.

CORRELATION ANALYSIS

Table 6.1 presents the correlations among the variables. Being female was positively related to pro-environmental behavior when measured by textual response. Gender also influenced the belief that the environmental crisis is exaggerated. As the bivariate crosstabulations in Table 6.2 show, men were more likely than women to agree with the statement that the environmental crisis is exaggerated. Age was positively associated with pro-environmental orientation, environment identity, and both pro-environmental behavior variables. Race appeared to influence cultural group and pro-environmental behavior text as illustrated by the bivariate crosstabulations presented in Tables 6.3 and 6.4.

Table 6.1 Correlations of Variables N=400

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender	1.00														
2. Age	-0.08	1.00													
3. Race/Ethnicity	0.04	-0.01	1.00												
4. Education	0.11 *	0.12 *	-0.03	1.00											
5. Household Income	-0.04	0.09	-0.09	0.40 **	1.00										
6. Number of Children	0.01	0.39 **	-0.03	-0.01	0.14 **	1.00									
7. Household Size	0.07	-0.27 **	0.11 *	-0.08	0.20 **	0.41 **	1.00								
8. Crisis Exaggerated	0.16 **	0.11 *	-0.01	0.11 *	-0.04	0.04	-0.04	1.00							
9. Experiences/role models/events	0.07	0.02	0.02	0.18 **	0.03	0.05	-0.05	0.21 **	1.00						
10. Member of Environmental Group	0.03	0.04	0.05	0.09	-0.01	-0.03	-0.01	0.15 **	0.14 **	1.00					
11. Cultural Group	-0.08	-0.07	-0.17 **	0.01	0.12 *	-0.10	-0.02	-0.23 **	-0.10	0.02	1.00				
12. Pro-environmental Orientation	0.10	0.14 *	0.05	-0.02	-0.13 *	0.01	-0.13 *	0.69 **	0.15 **	0.17 **	-0.34 **	1.00			
13. Pro-environmental Behavior Text	0.22 **	0.15 **	0.14 **	0.17 **	0.05	0.00	-0.08	0.26 **	0.35 **	0.12 *	-0.20 **	0.24 **	1.00		
14. Pro-environmental Behavior Scale	-0.01	0.18 **	-0.02	0.11 *	0.03	0.11 *	-0.05	0.42 **	0.23 **	0.30 **	-0.09	0.44 **	0.22 **	1.00	
15. Environment Identity	0.10	0.25 **	0.10	0.11	-0.05	0.12 *	-0.08	0.51 **	0.22 **	0.23 **	-0.30 **	0.63 **	0.29 **	0.51 **	1.00

Table 6.2 Crosstabulations of Belief that Environmental Crisis is Exaggerated by Gender

	Strongly				Strongly	
	<u>Agree</u>	<u>Agree</u>	<u>Neither</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Total</u>
Men	64.5	62.7	36.5	27.3	46.4	42.5
Women	<u>35.5</u>	<u>37.3</u>	<u>63.5</u>	<u>72.7</u>	<u>53.6</u>	<u>57.5</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0

Pearson $\chi^2 = 26.275$ ($p < .001$)
 Lambda = .042

Table 6.3 Crosstabulations of Cultural Group by Race/Ethnicity

	<u>Egalitarian</u>	<u>Hierarchist</u>	<u>Individualist</u>	<u>Total</u>
Black	18.7	9.5	5.6	9.8
White	45.3	81.6	82.3	75.1
Hispanic	21.9	5.7	4.8	8.4
Asian and Other	<u>14.1</u>	<u>3.2</u>	<u>7.3</u>	<u>6.7</u>
Total	100.0	100.0	100.0	100.0

Pearson $\chi^2 = 42.079$ ($p < .001$)
 Cramer's V = .247

Table 6.4 Crosstabulations of Pro-Environmental Behavior Text by Race/Ethnicity

	<u>0 - 1</u>	<u>2 - 3</u>	<u>4 - 5</u>	<u>6 +</u>	<u>Total</u>
Black	11.2	9.8	5.0	15.0	9.8
White	76.9	74.0	78.3	60.0	75.1
Hispanic	7.7	7.3	10.0	15.0	8.4
Asian and Other	<u>4.2</u>	<u>8.9</u>	<u>6.7</u>	<u>10.0</u>	<u>6.7</u>
Total	100.0	100.0	100.0	100.0	100.0

Pearson $\chi^2 = 63.29$ ($p < .01$)
 Lambda = .004

Education appeared to be related to both measures of pro-environmental behavior.

Household income appeared to influence pro-environmental orientation and cultural group. The bivariate crosstabulations in Table 6.5 illustrate the relationship between household income and

cultural group. The number of children participants had was positively related to pro-environmental behavior as measured by the Dunlap and Scarce scale and environment identity. As household size increased, pro-environmental orientation decreased. Participants' belief that the environmental crisis is exaggerated was positively related to the influence of experiences/role models/events, membership in an environmental group, pro-environmental orientation, both measures of pro-environmental behavior, and environment identity. Due to the ordering of the responses on the survey instrument from 1) strongly agree to 5) strongly disagree, these positive relationships indicate that participants who were members of an environmental group and who had higher values of pro-environmental orientation, both measures of pro-environmental behavior, and environment identity were more likely to believe that the environmental crisis is not exaggerated. This belief was also influenced by cultural group as illustrated by the bivariate crosstabulations in Table 6.6.

Table 6.5 Crosstabulations of Cultural Group by Household Income

	<u>Egalitarian</u>	<u>Hierarchist</u>	<u>Individualist</u>	<u>Total</u>
≤ \$20,000	21.9	15.2	16.9	17.0
\$20,001 - \$45,000	34.4	20.9	29.8	26.6
\$45,001 - \$70,000	32.8	31.0	20.2	27.5
\$70,001 - \$99,999	3.1	20.9	17.8	16.5
\$100,000 +	<u>7.8</u>	<u>12.0</u>	<u>15.3</u>	<u>12.4</u>
	100.0	100.0	100.0	100.0
Pearson Chi ² = 19.744 (<i>p</i> < .05)				
Lambda = .021				

Table 6.6 Crosstabulations of Belief that Environmental Crisis Is Exaggerated by Cultural Group

	Strongly				Strongly	
	<u>Agree</u>	<u>Agree</u>	<u>Neither</u>	<u>Disagree</u>	<u>Disagree</u>	<u>Total</u>
Egalitarian	9.6	11.8	9.5	16.0	36.9	21.7
Hierarchist	45.2	33.3	59.5	53.8	31.0	44.1
Individualist	<u>45.2</u>	<u>54.9</u>	<u>31.0</u>	<u>30.2</u>	<u>32.1</u>	<u>34.2</u>
Total	100.0	100.0	100.0	100.0	100.0	100.0
Pearson $\chi^2 = 39.502$ ($p < .001$)						
Lambda = .058						

The variable measuring the influence of experiences/role models/events was positively related to membership in an environmental group, pro-environmental orientation, both measures of pro-environmental behavior, and environment identity. Membership in an environmental group was related to pro-environmental orientation, both measures of pro-environmental behavior, and environment identity. Cultural group was related to pro-environmental orientation, pro-environmental behavior text, and environment identity as shown by the bivariate crosstabulations in Tables 6.7, 6.8, and 6.9. Pro-environmental orientation, both measures of pro-environmental behavior, and environment identity were all positively related to each other.

Table 6.7 Crosstabulations of Pro-environmental Orientation by Cultural Group

	<u>15 - 29</u>	<u>30 - 44</u>	<u>45 - 59</u>	<u>60 - 75</u>	<u>Total</u>
Egalitarian	0.0	1.7	7.2	57.9	21.7
Hierarchist	50.0	69.5	54.1	14.0	44.1
Individualist	<u>50.0</u>	<u>28.8</u>	<u>38.7</u>	<u>28.1</u>	<u>34.2</u>
Total	100.0	100.0	100.0	100.0	100.0
Pearson $\chi^2 = 49.504$ ($p < .001$)					
Lambda = .040					

Table 6.8 Crosstabulations of Pro-Environmental Behavior Text by Cultural Group

	<u>0 - 1</u>	<u>2 - 3</u>	<u>4 - 5</u>	<u>6 +</u>	<u>Total</u>
Egalitarian	9.0	22.8	23.3	45.0	21.7
Hierarchist	46.9	46.3	48.3	25.0	44.1
Individualist	<u>44.1</u>	<u>30.9</u>	<u>28.4</u>	<u>30.0</u>	<u>34.2</u>
Total	100.0	100.0	100.0	100.0	100.0
Pearson Chi ² = 46.637 (<i>p</i> < .01)					
Lambda = .038					

Table 6.9 Crosstabulations of Environment Identity by Cultural Group

	<u>11 - 21</u>	<u>22 - 32</u>	<u>33 - 43</u>	<u>44 - 55</u>	<u>Total</u>
Egalitarian	0.0	2.4	8.8	36.4	21.7
Hierarchist	87.5	78.0	45.3	34.3	44.1
Individualist	<u>12.5</u>	<u>19.6</u>	<u>45.9</u>	<u>29.3</u>	<u>34.2</u>
Total	100.0	100.0	100.0	100.0	100.0
Pearson Chi ² = 30.535 (<i>p</i> < .001)					
Lambda = .012					

As indicated, the bivariate analyses suggest several interesting relationships among social background factors and environmental attitudes and behavior. Older participants had higher levels of pro-environmental orientation, pro-environmental behavior and environment identity. Due to their life course position, older people are more likely to express concern for their grandchildren, worry about the future, and exhibit an increased interest in “soft” values (Finger 1994; Martensson and Pettersson 2003). Women reported performing a higher number of pro-environmental behaviors than men, a difference that can be attributed to the enduring gender based division of labor. The most frequently performed pro-environmental behaviors were recycling, conserving electricity and water, and variations on shopping behavior, activities which are all closely linked to domestic responsibilities. Whites and those with higher levels of household income were more likely be classified as hierarchists and individualists. Blacks and

Hispanics were more likely to be classified as egalitarians, as were participants having lower levels of household income. This demographic sorting is not surprising, given that hierarchists are protective of traditional social roles and statuses, individualists espouse the free market system as an institutional form of social ordering, and egalitarians reject social stratification and favor collective action to equalize wealth and power differentials (Kahan 2003). Of the three cultural groups, egalitarians reported performing the highest number of pro-environmental behaviors and the highest levels of both pro-environmental orientation and environment identity. Because egalitarians are committed to a more equitable distribution of resources they tend to be more sensitive to environmental risks and consequently support the regulation of those commercial enterprises that produce such wide disparities in wealth and power.

REGRESSION ANALYSIS

I used multiple regression analysis to assess the strengths of the relationships between pro-environmental orientation, pro-environmental behavior, environment identity, gender, and influence of experiences/role models/events. I examined four regression equations: one with *pro-environmental orientation* as the dependent variable; one with *pro-environmental behavior scale* as the dependent variable; one with *pro-environmental behavior text* as the dependent variable; and one with *environment identity* as the dependent variable.

In Equation One, Model One, I regressed pro-environmental orientation on various independent variables (See Table 6.10). There was a very significant positive relationship between environment identity and pro-environmental orientation ($b = .767, p < .001$). There was also a very significant positive relationship between pro-environmental behavior scale and pro-environmental orientation ($b = .864, p < .001$). As participants' levels of environment identity and pro-environmental behavior scale increased, so did their levels of pro-environmental

orientation. In Model Two I added a set of dummy variables to examine the relationship between the categorical variable cultural group and pro-environmental orientation, with egalitarian as the omitted group. This relationship was also very significant ($p < .001$). Members of both the hierarchist cultural group ($b = -6.263$) and the individualist cultural group ($b = -5.476$) had lower levels of pro-environmental orientation than members of the egalitarian cultural group. When controlling for cultural group, the effects of environment identity decreased 11.6 percent ($b = .678$), while the effects of environment behavior scale remained relatively unchanged ($b = .868$). The adjusted R Square of Model Two was .465, indicating that these three variables explain 46.5 percent of the variance in pro-environmental orientation. Comparing standardized coefficients, we can see that environment identity ($\beta = .465$) had a substantially larger effect on pro-environmental orientation than both cultural groups, hierarchist ($\beta = -.299$), individualist ($\beta = -.252$), and pro-environmental behavior scale ($\beta = .192$).

Hypothesis One was therefore supported: pro-environmental behavior, as measured by the Dunlap and Scarce scale, was positively related to pro-environmental orientation. As suggested by the independent samples t-tests Hypothesis Two was not supported: women do not appear to be more likely than men to report pro-environmental orientation. Hypothesis Six was supported: environment identity positively influences pro-environmental orientation.

In Equation Two, I regressed pro-environmental behavior scale on various independent variables (See Table 6.11). Collinearity diagnostics showed no evidence of multicollinearity between the two variables pro-environmental behavior scale and pro-environmental behavior text. There was a very significant positive relationship between environment identity and environmental behavior scale ($b = .099, p < .001$). There was also a very significant positive relationship between

pro-environmental orientation and environmental behavior scale ($b = .053, p < .001$). As participants' levels of environment identity and pro-environmental orientation increased, so did their levels of pro-environmental behavior as measured by the Dunlap and Scarce scale.

The relationship between environmental group membership and pro-environmental behavior scale was also highly significant ($b = 1.394, p < .001$). Participants who were members of an environmental group scored, on average, almost 1.4 points higher on the Dunlap and Scarce environmental behavior scale compared to participants who were not members of an environmental group. This equation also revealed a significant positive relationship between influence of experiences/role models/events and environmental behavior scale ($b = .218, p < .05$). I added the cultural group variables in a second model, however their effects were not significant. The adjusted R Square of Equation Two was .338, indicating that these four variables explain 33.8 percent of the variance in pro-environmental behavior scale. Comparing standardized coefficients, we can see that environment identity ($\beta = .308$) has the largest effect on pro-environmental behavior scale, followed by pro-environmental orientation ($\beta = .238$), and influence of experiences/role models/events ($\beta = .096$). Hypothesis Seven was supported so far: environment identity positively influences pro-environmental behavior when measured by the Dunlap and Scarce scale.

In Equation Three I regressed pro-environmental behavior text on various independent variables (See Table 6.12). There was a very significant positive relationship between influence of experiences/role models/events and pro-environmental behavior text ($b = .606, p < .001$). There was also a very significant relationship between gender and pro-environmental behavior text ($b = .844, p < .001$). On average, women performed .8 more environmentally friendly behaviors than men. This equation also indicates a significant positive relationship between age and pro-

environmental behavior text ($b = .205, p < .01$). In Model Two, I added the cultural group variables, which indicated a significant relationship between cultural group (for individualists) and pro-environmental behavior text ($b = -.688, p < .05$). Members of the individualist cultural group reported performing fewer environmentally friendly behaviors than members of the egalitarian cultural group. When controlling for cultural group, the effects of influence decreased 2.2 percent ($b = .593$), the effects of age increased 1.5 percent ($b = .208$), and the effects of gender increased 2.6 percent ($b = .866$). There was no significant relationship between environment identity and pro-environment behavior text in either model, indicating support for Hypothesis Seven is actually mixed when both pro-environmental behavior variables are taken into account. The adjusted R Square of Model Two was .221, indicating that these four variables explain 22.1 percent of the variance in pro-environmental behavior as measured by the scale constructed by adding the number of participants' responses to the open ended question: "Which environmentally friendly behaviors do you perform on a regular basis?"

Comparing standardized coefficients, we can see that influence of experiences/role models/events ($\beta = .277$), has a much stronger effect on pro-environmental behavior text than both individualist cultural group ($\beta = -.151$), and age ($\beta = .148$). Support for Hypothesis Three was mixed. Women are not more likely than men to report pro-environmental behavior when the variable is measured by the Dunlap and Scarce environmental behavior scale. However, women are more likely than men to report pro-environmental behavior when the variable is measured by adding the number of participants' responses to the open ended behavior question.

In Equation Four, Model One, I regressed environment identity on various independent variables (See Table 6.13). There was a very significant positive relationship between pro-environmental behavior scale and environment identity ($b = .702, p < .001$). There was also a very

significant positive relationship between pro-environmental orientation and environment identity ($b = .328, p < .001$). There was a significant positive relationship between age and environment identity ($b = .509, p < .05$). In Model Two, I added the cultural group variables, which indicated a significant relationship between cultural group (for individualists) and environment identity ($b = -1.893, p < .05$). Members of the individualist cultural group reported lower scores on the environment identity scale than members of the egalitarian cultural group. When controlling for cultural group, the effects of pro-environmental behavior scale increased 4.3 percent ($b = .732$), the effects of pro-environmental orientation decreased 7.6 percent ($b = -.303$), and the effects of age increased 5.3 percent ($b = .536$). The adjusted R Square of Equation Four was .492, indicating that these four variables explain 49.2 percent of the variance in environment identity.

Comparing standardized coefficients, we can see that pro-environmental orientation ($\beta = .441$) has the largest effect on environment identity, followed by pro-environmental behavior scale ($\beta = .236$), individualist cultural group ($\beta = -.127$), and age ($\beta = .117$). Hypothesis Four was not supported: women do not report higher levels of environment identity than men. Hypothesis Five was also not supported: influence of experiences/role models/events does not appear to predict environment identity.

Table 6.10 Unstandardized and Standardized
Coefficients From Regression of Pro-Environmental
Orientation on Selected Variables

Independent Variable	<u>Pro-Environmental Orientation</u>			
	<u>Model 1</u>		<u>Model 2</u>	
	<u>b</u>	<u>B</u>	<u>b</u>	<u>B</u>
Environment Identity	.767*** (.073)	.526	.678*** (.074)	.465
Pro-environmental Behavior Scale	.864*** (.226)	.192	.868*** (.219)	.192
Cultural Group: Hierarchist			-6.263*** (1.279)	-.299
Individualist			-5.476*** (1.336)	-.252
Constant	16.167		25.330	
R ²	.428		.465	
Note: Numbers in parentheses are standard errors. Egalitarian is the omitted category for Cultural Group.				
* $p < .05$ ** $p < .01$ *** $p < .001$				

Table 6.11 Unstandardized and Standardized Coefficients From Regression of Pro-Environmental Behavior Scale on Selected Variables

Independent Variable	Pro-Environmental Behavior Scale	
	<u>b</u>	<u>B</u>
Environment Identity	.099*** (.020)	.308
Pro-environmental Orientation	.053*** (.013)	.238
Experiences/Role Models/Events	.218* (.110)	.096
Membership in Environmental Group	1.394*** (.364)	.175
Constant	2.675	
R ²	.338	
Note: Numbers in parentheses are standard errors.		
* $p < .05$ ** $p < .01$ *** $p < .001$		

Table 6.12 Unstandardized and Standardized Coefficients From Regression of Pro-Environmental Behavior Text on Selected Variables

Independent Variable	<u>Pro-Environmental Behavior Text</u>			
	<u>Model 1</u>		<u>Model 2</u>	
	<u>b</u>	<u>B</u>	<u>b</u>	<u>B</u>
Experiences/Role Models/Events	.606*** (.109)	.283	.593*** (.109)	.277
Age	.205** (.076)	.050	.208** (.076)	.148
Women	.844*** (.216)	.192	.866*** (.217)	.197
Cultural Group: Individualist			-.688* (.343)	-.151
Constant	-2.057		-.816	
R ²	.215		.221	
Note: Numbers in parentheses are standard errors. Egalitarian is the omitted category for Cultural Group.				
* $p < .05$ ** $p < .01$ *** $p < .001$				

Table 6.13 Unstandardized and Standardized Coefficients From Regression of Environment Identity on Selected Variables

Independent Variable	Environment Identity			
	<u>Model 1</u>		<u>Model 2</u>	
	<u>b</u>	<u>B</u>	<u>b</u>	<u>B</u>
Age	.509* (.199)	.111	.536** (.201)	.117
Pro-environmental Orientation	.328*** (.031)	.479	.303*** (.033)	.441
Pro-environmental Behavior Scale	.702*** (.144)	.226	.732*** (.144)	.236
Cultural Group: Individualist			-1.893* (.909)	-.127
Constant	17.951		20.970	
R ²	.489		.492	
Note: Numbers in parentheses are standard errors. Egalitarian is the omitted category for Cultural Group.				
* $p < .05$ ** $p < .01$ *** $p < .001$				

The results of the regression analyses illuminate some of the factors that influence environmental attitudes and behavior. Figure 6.1 presents a revised heuristic model of the factors influencing pro-environmental behavior. The dashed lines indicate the relationship holds for only one of the measures of pro-environmental behavior. Cultural group influences environment identity. Influence of experiences/role models/events affects both measures of pro-environmental behavior. Membership in an environmental group affects pro-environmental behavior scale. Many

of these relationships are reciprocal and reinforcing. The relationships between environment identity and both pro-environmental behavior scale and pro-environmental orientation are reciprocal. Cultural group influences pro-environmental orientation, and the relationship between pro-environmental orientation and pro-environmental behavior scale is reciprocal. Cultural group influences pro-environmental behavior text.

The reciprocal quality of these relationships illustrates the interdependence of culture, environmentally significant behavior and environmental orientation. Individuals adopt a particular environmental orientation and engage in a particular level of pro-environmental behavior, not as a result of a rational assessment of environmental risks, but because of the meaning that the environment has for them - and environmental meanings are culturally driven. Because egalitarians are driven by the ideals of equality and fairness, they view the environment as ephemeral, existing in a delicate and precarious balance. Egalitarians embrace the simple life and believe everyone else should as well. Individualists view the environment as home or nature, and because they are committed to individual autonomy and a free market ideology, they view the environment as resilient and able to recover from exploitation. To hierarchists, the environment represents natural resources, which are to be distributed according to status claims determined by expert and objective governmental authorities. The culturally specific meanings associated with the environment allow members of each group to justify behavioral strategies that advance the way of life to which they are committed, whether it be conspicuous consumption, organizing to reduce inequality, or supporting increased government regulation. Grid group cultural theory explains why environmental issues are more relevant to some individuals than to others. Cognitive sociology explains how cultural orientations operate as mental filters mediating individuals' perceptions of the environment (Zerubavel 1997). Conflicting assessments of environmental

conditions and future consequences are not so much about empirical disagreements than they are about competing cultural visions (Kahan 2003).

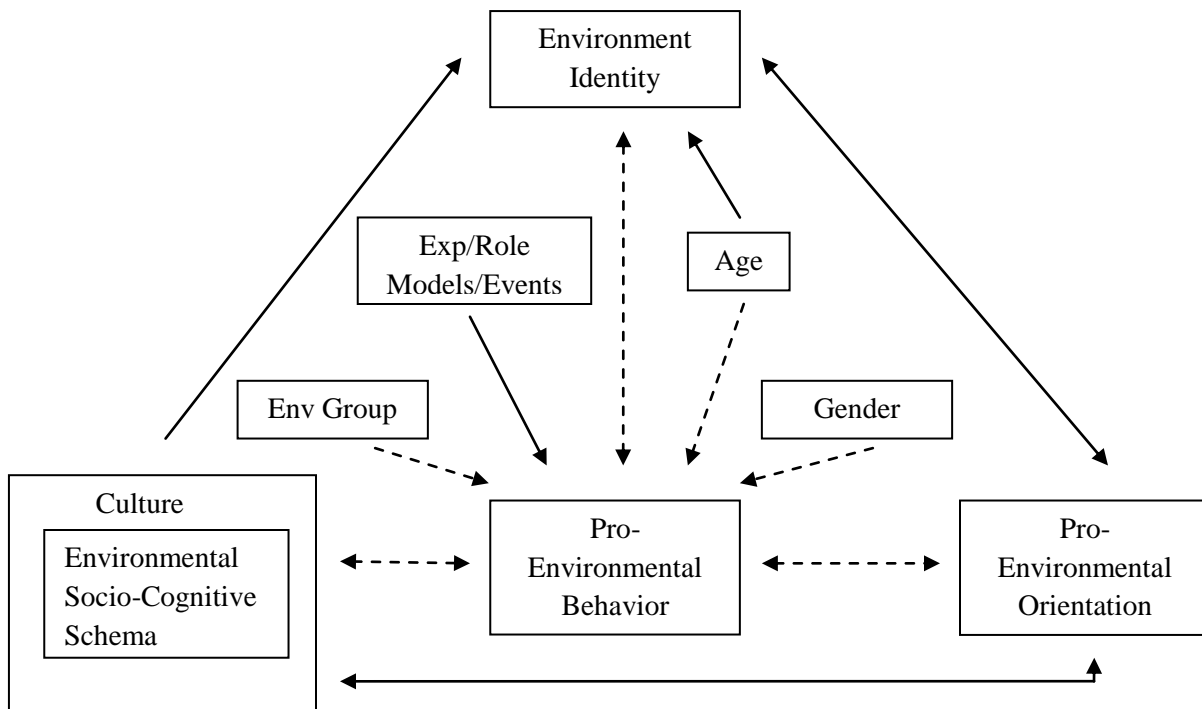


Figure 6.1 Factors Influencing Pro-Environmental Behavior

ANOVA

I conducted a one-way between groups analysis of variance (ANOVA) in order to examine whether pro-environmental orientation, pro-environmental behavior, and environment identity differed significantly according to cultural group. I hypothesized that individualists would report low levels of pro-environmental orientation and pro-environmental behavior, hierarchists would report moderate levels of pro-environmental orientation and pro-environmental behavior, and egalitarians would report high levels of pro-environmental

orientation and pro-environmental behavior. The study also hypothesized that egalitarians would report higher levels of environment identity than the other cultural groups.

The F value for the one-way ANOVA examining differences among the three cultural groups on pro-environmental orientation was significant [$F(2,392) = 82.2, p < .001$]. The effect size, calculated using eta squared, was .30; a large effect. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between egalitarians and hierarchists was significant ($MD = 14.74, p < .001$). The mean difference between egalitarians and individualists was also significant ($MD = 11.14, p < .001$), as was the mean difference between hierarchists and individualists ($MD = 3.60, p < .01$). The mean scores for each group were: egalitarians ($M = 64.24, SD = 7.66$); hierarchists ($M = 49.51, SD = 8.38$); and individualists ($M = 53.10, SD = 9.86$). See Tables 6.14 and 6.15 for results of the ANOVA and Tukey HSD Post Hoc Tests.

Support for Hypothesis Eight was therefore mixed. Hypothesis Eight stated that individualists would report very low levels of pro-environmental orientation, hierarchists would report moderate levels of pro-environmental orientation, and egalitarians would report high levels of pro-environmental orientation. Results from the ANOVA and Tukey analyses indicate that egalitarians did indeed report high levels of pro-environmental orientation, but it was the hierarchists who reported low levels of pro-environmental orientation and the individualists who reported moderate levels of pro-environmental orientation.

The F value for the one-way ANOVA examining differences among the three cultural groups on pro-environmental behavior scale was significant [$F(2, 392) = 30.85, p < .001$]. The effect size, calculated using eta squared, was .14; a large effect. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between egalitarians and hierarchists was significant ($MD = 2.10, p < .001$). The mean difference between egalitarians and individualists

was also significant ($MD = 1.43, p < .001$), as was the mean difference between hierarchists and individualists ($MD = .68, p < .05$). The mean scores for each group were: egalitarians ($M = 9.91, SD = 1.73$); hierarchists ($M = 7.80, SD = 1.90$); and individualists ($M = 8.48, SD = 2.35$). See Tables 6.14 and 6.15 for results of the ANOVA and Tukey HSD Post Hoc Tests.

The F value for the one-way ANOVA examining differences among the three cultural groups on pro-environmental behavior text was significant [$F(2, 392) = 22.78, p < .001$]. The effect size, calculated using eta squared, was .10; a medium effect. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between egalitarians and hierarchists was significant ($MD = 1.82, p < .001$). The mean difference between egalitarians and individualists was also significant ($MD = 1.02, p < .01$), as was the mean difference between hierarchists and individualists ($MD = .80, p < .01$). The mean scores for each group were: egalitarians ($M = 3.66, SD = 2.10$); hierarchists ($M = 1.84, SD = 2.22$); and individualists ($M = 2.64, SD = 1.81$). See Tables 6.14 and 6.15 for results of the ANOVA and Tukey HSD Post Hoc Tests.

The results of the ANOVA and Tukey HSD Post Hoc Tests for pro-environmental behavior were consistent for both behavioral variables, pro-environmental behavior scale and pro-environmental behavior text. Support for Hypothesis Nine was mixed, in a manner that parallels that of Hypothesis Eight. Hypothesis Nine stated that individualists would report very low levels of pro-environmental behavior, hierarchists would report moderate levels of pro-environmental behavior, and egalitarians would report high levels of pro-environmental behavior. Results from the ANOVA and Tukey analyses indicate that egalitarians did indeed report high levels of pro-environmental behavior, but as with pro-environmental orientation, it was the hierarchists who reported low levels of pro-environmental behavior and the individualists who reported moderate levels of pro-environmental behavior.

The F value for the one-way ANOVA examining differences among the three cultural groups on environment identity was significant [$F(2, 392) = 34.34, p < .001$]. The effect size, calculated using eta squared, was .17; a large effect. Post-hoc comparisons using the Tukey HSD test indicated that the mean difference between egalitarians and hierarchists was significant ($MD = 8.81, p < .001$). The mean difference between egalitarians and individualists was also significant ($MD = 6.31, p < .001$), as was the mean difference between hierarchists and individualists ($MD = 2.50, p < .05$). The mean scores for each group were: egalitarians ($M = 48.76, SD = 5.90$); hierarchists ($M = 39.95, SD = 9.90$); and individualists ($M = 42.44, SD = 7.05$). See Tables 6.14 and 6.15 for results of the ANOVA and Tukey HSD Post Hoc Tests. Hypothesis Ten was supported: egalitarians reported higher levels of environment identity than hierarchists or individualists.

Table 6.14 Results of One-Way Analyses of Variance

		Sum of Squares	df	Mean Square	F	Sig
Pro-environmental Orientation	Between Groups	12646.86	2	6323.43	82.22	.000
	Within Groups	30147.91	392	76.91		
	Total	42794.77				
Pro-environmental Behavior Scale	Between Groups	254.42	2	127.21	30.85	.000
	Within Groups	1616.31	392	4.12		
	Total	1870.73				
Pro-environmental Behavior Text	Between Groups	193.7	2	96.85	22.78	.000
	Within Groups	1666.97	392	4.25		
	Total	1860.67				
Environment Identity	Between Groups	4480.07	2	2240.03	34.34	.000
	Within Groups	25571.74	392	65.23		
	Total	30051.81				

Table 6.15 Results of Tukey HSD Post Hoc Test of Analyses of Variance

Dependent Variable	(I) Culture	(J) Culture	Mean Difference (I - J)	Std Error	Sig	95% Confidence Interval	
						Lower Bound	Upper Bound
Pro-environmental Orientation	Egalitarian	Hierarchist	14.738*	1.156	.000	12.02	17.46
		Individualist	11.140*	1.210	.000	8.29	13.99
	Hierarchist	Egalitarian	-14.738*	1.156	.000	-17.49	-12.02
		Individualist	-3.598*	1.006	.001	-5.96	-1.23
	Individualist	Egalitarian	-11.140*	1.210	.000	-13.99	-8.29
		Hierarchist	3.598*	1.006	.001	1.23	5.96
Pro-environmental Behavior Scale	Egalitarian	Hierarchist	2.102*	.268	.000	1.47	2.73
		Individualist	1.425*	.280	.000	.77	2.08
	Hierarchist	Egalitarian	-2.102*	.268	.000	-2.73	-1.47
		Individualist	-.677*	.233	.011	-1.22	-.13
	Individualist	Egalitarian	-1.425*	.280	.000	-2.08	-.77
		Hierarchist	.677*	.233	.011	.13	1.22
Pro-environmental Behavior Text	Egalitarian	Hierarchist	1.818*	.272	.000	1.18	2.46
		Individualist	1.018*	.285	.001	.35	1.69
	Hierarchist	Egalitarian	-1.818*	.272	.000	-2.46	-1.18
		Individualist	-.800*	.237	.002	-1.36	-.24
	Individualist	Egalitarian	-1.018*	.285	.001	-1.69	-.35
		Hierarchist	.800*	.237	.002	.24	1.36
Environment Identity	Egalitarian	Hierarchist	8.808*	1.065	.000	6.30	11.31
		Individualist	6.311*	1.114	.000	3.69	8.93
	Hierarchist	Egalitarian	-8.808*	1.065	.000	-11.31	-6.30
		Individualist	-2.496*	.926	.020	-4.68	-.32
	Individualist	Egalitarian	-6.311*	1.114	.000	-8.93	-3.69
		Hierarchist	2.496*	.926	.020	.32	4.68
* The mean difference is significant at the .05 level.							

Table 6.16 on the following page presents a summary of the results of the hypotheses testing.

Table 6.16 Summary of Results of Hypotheses Testing

	Hypothesis	Method of Analysis	Results
H ₁	Pro-environmental behavior will be positively related to pro-environmental orientation	Regression	Mixed
H ₂	Women will report higher levels of pro-environmental orientation than men	T Tests Regression	Not Supported
H ₃	Women will report higher levels of pro-environmental behavior than men	T Tests Regression	Mixed
H ₄	Women will report higher levels of environment identity than men	T Tests Regression	Not Supported
H ₅	Influence of experiences/role models/events will positively influence environment identity	Regression	Not Supported
H ₆	Environment identity will positively influence pro-environmental orientation	Regression	Supported
H ₇	Environment identity will positively influence pro-environmental behavior	Regression	Mixed
H ₈	Individualists will report low levels of pro-environmental orientation. Hierarchists will report moderate levels of pro-environmental orientation. Egalitarians will report high levels of pro-environmental orientation.	ANOVA	Mixed
H ₉	Individualists will report low levels of pro-environmental behavior. Hierarchists will report moderate levels of pro-environmental behavior. Egalitarians will report high levels of pro-environmental behavior.	ANOVA	Mixed
H ₁₀	Egalitarians will report higher levels of environment identity than Hierarchists or Individualists.	ANOVA	Supported

DISCUSSION

Hypothesis One proposed a relationship between pro-environmental behavior and pro-environmental orientation. Multivariate regression analysis supported this hypothesis: pro-environmental behavior, as measured by the Dunlap and Scarce scale, was positively related to pro-environmental orientation. This finding is consistent with other studies (Clark et al. 2003; Reid et al. 2010; Stets and Biga 2003). However, there was not a significant relationship between pro-environmental behavior and pro-environmental orientation when behavior was measured by summing participants' responses to the open-ended question: "Which environmentally friendly behaviors do you perform on a regular basis?"

Hypotheses Two, Three, and Four proposed relationships between gender and pro-environmental orientation, environment identity and both measures of pro-environmental behavior. The results of independent-samples t-tests and regression analysis indicated a lack of support for a relationship between gender and pro-environmental orientation (Hypothesis Two) and environment identity (Hypothesis Four). When pro-environmental behavior was measured by the Dunlap and Scarce scale, independent-samples t-tests and regression analysis indicated a lack of support for Hypothesis Three: women did not report higher scores than men on the pro-environmental scale. However, when pro-environmental behavior was measured by summing participants' responses to the open-ended question: "Which environmentally friendly behaviors do you perform on a regular basis?" both independent-samples t-tests and regression analysis supported Hypothesis Three: women reported regularly performing more pro-environmental behaviors than men. Other research findings have been mixed as well. Some researchers have found a relationship between gender and pro-environmental orientation (Arcury and Christianson 1990; Blaikie 1992; Clark, Kotchen, and Moore 2003; Maineri, Barnett, Valdero, Unipan, and Oskamp 1997; Stets and Biga 2003), while others (Blocker and Eckberg 1997; Diamantopoulos,

Schlegelmilch, Sinkovics, and Bohlen 2003; Gronhoj and Olander 2007; Shen and Saijo 2008) found no such relationship. Likewise, some researchers have found a relationship between gender and pro-environmental behavior (Baldassare and Katz 1992; Clark et al. 2003; Maineri et al. 1997; Roberts 1993; Steel 1996), while others (Blocker and Eckberg 1997; Diamantopoulos et al. 2003; Gronhoj and Olander 2007; Stets and Biga 2003) found no relationship. Consistent with the current study, Stets and Biga (2003) found no relationship between gender and environment identity. So, it remains unclear just what effect (if any) gender has on environmental attitudes and behavior.

Hypothesis Five proposed a relationship between the influence of experiences/role models/events and the environment identity. Regression analysis indicated a lack of support for this hypothesis: there does not appear to be a relationship between influences/role models/events and the environment identity. I am not aware of any previous research that has examined the relationship between the influence of experiences/role models/events on the environment identity, however, Finger (1994) found that past experiences with nature or exposure to environment catastrophe influenced environmental behavior.

Hypotheses Six and Seven examined the relationships between environment identity and pro-environmental orientation and pro-environmental behavior. The results of regression analysis supported Hypothesis Six; environment identity positively influences pro-environmental orientation. As participants' levels of environment identity increased, so did their levels of pro-environmental orientation. Regression analysis indicated that environment identity positively influences pro-environmental behavior when measured by the Dunlap and Scarce environmental scale. This finding corroborates identity theory's assertion of a correspondence between identity and behavior. However, support for Hypothesis Seven was mixed because regression analysis

did not indicate a relationship between environment identity and pro-environmental behavior when measured by summing participants' responses to the open-ended question: "Which environmentally friendly behaviors do you perform on a regular basis?" Stets and Biga (2003) found positive relationships between both environment identity and environmental attitudes and behavior. Other researchers (Haanpaa 2007; Wade-Benzoni, Li, Thompson and Bazerman 2007) found a positive relationship between the concept of environmental identity and pro-environmental behavior.

As discussed in Chapter Five, the measurement of pro-environmental behavior was of utmost importance to this study. Comparing the relationships between the two pro-environmental variables, *pro-environmental behavior scale* and *pro-environmental behavior text*, and other variables, we see that:

1) Pro-environmental behavior scale is related to environment identity, influence of experiences/role models/events, membership in an environmental group, and pro-environmental orientation.

2) Pro-environmental behavior text is related to age, influence of experiences/role models/events, gender (female), and cultural group (individualist).

The only relationship the two variables have in common is with influence of experiences/role models/events. The question then is, what do these variables actually measure? I contend that the variable *pro-environmental behavior text*, simplistic as it may be, captures the concept of the performance of pro-environmental behavior at a concrete level because participants describe what they actually do. I also contend that the variable *pro-environmental scale* captures the concept of the performance of pro-environmental behavior at an abstract level because participants report what they might be willing to do. What the pro-environmental scale

variable fails to capture is the gap between intention and action, or the cost of action, in terms of time, money, or effort. Rational actors seek to avoid, or minimize costs, favoring less demanding actions over more demanding ones, and pro-environmental behavior is “notorious for its remarkable variability in difficulty” (Kaiser, Oerke, and Bogner 2007: 244). As the data from this study indicate, people are much more likely to recycle than to carpool or use public transportation.

Pro-environmental behavior scale is strongly related to pro-environmental orientation, while pro-environmental behavior text is not. Perhaps pro-environmental behavior scale represents some of the same attitudes as those represented by pro-environmental orientation. Pro-environmental behavior scale and pro-environmental behavior text are not related to each other; they do not capture the same information. In order to more fully grasp the relationship between pro-environmental orientation and pro-environmental behavior, a more accurate measure of pro-environmental behavior is needed, such as an index with several indicators of actual performance of pro-environmental behavior each reflecting varying degrees of cost.

Hypotheses Eight, Nine, and Ten examined differences among cultural groups regarding pro-environmental orientation, pro-environmental behavior, and environment identity. Tests of these hypotheses provide support for grid-group cultural theory’s assertion that fundamental differences exist among cultural groups. Members of the hierarchist culture had low levels of pro-environmental orientation, pro-environmental behavior, and environment identity. Members of the individualist culture had moderate levels of pro-environmental orientation, pro-environmental behavior, and environment identity. Members of the egalitarian culture had high levels of pro-environmental orientation, pro-environmental behavior, and environment identity.

Clearly, members of the three different cultural groups have their own points of view regarding the environment and environmentally significant behavior.

CHAPTER SEVEN

QUALITATIVE ANALYSIS PART I:
VARIABLES, THE ENVIRONMENTAL SOCIO-COGNITIVE SCHEMA, AND THE
MODEL OF ENVIRONMENTALLY SIGNIFICANT BEHAVIOR

In this chapter I present the variables derived from the use of grounded theory methods. I explain the *environmental socio-cognitive schema* and describe how I developed it. Finally I present the resulting model of environmentally significant behavior.

Through the process of open coding I identified 40 fully saturated significant variables which are listed in Table 7.1. A discussion of these variables follows.

Table 7.1 Significant Variables

Variable Cluster	Variable Name
Environmental Discourse	Volume of Environmental Discourse
	Level of Conflict Surrounding Environmental Discourse
Environmental Knowledge	Level of Trustworthiness of Environmental Information
	Level of Environmental Knowledge
	Level of Understanding of Environmental Issues
Significance of the Environment	Ways in Which the Environment has Significance
	Types of Environmentally Significant Experiences
	Types of Environmentally Significant Memories
	Number of Environmentally Significant Memories
	Types of Environmentally Significant Images
	Level of Anthropocentrism
Environmental Consciousness	Level of Environmental Consciousness
	Scope of Environmental Consciousness
	Level of Environmental Organization
	Intensity of Environmental Concern
	Scope of Environmental Concern
Environmental Conditions	State of Current Environmental Conditions
	State of Future Environmental Conditions
	Ways in Which Environmental Conditions Have Changed

Table 7.1 Significant Variables Continued

Variable Cluster	Variable Name
Proximity	Proximity of Environmental Issues
Environmental Issues	Types of Environmental Issues Level of Importance of Environmental Issues Sense of Urgency Regarding Environmental Issues Resolvability of Environmental Issues Capability to Resolve Environmental Issues Length of Time Required for Resolution of Environmental Issues
Environmental Solutions	Responsibility for Resolution of Environmental Issues Types of Solutions for Environmental Issues Level of Agreement on Resolution Strategies
Environmental Behavior	Types of Pro-environmental Behavior Types of Environmentally Harmful Behavior Frequency of Performance of Pro-environmental Behavior Level of Commitment to Performing Pro-environmental Behavior Level of Effort Required of Pro-environmental Behavior Level of Efficacy of Pro-environmental Behavior Types of Subjective Norms Regarding the Performance of Pro-environmental Behavior Situational Context of Environmentally Significant Behavior Types of Barriers to the Performance of Pro-environmental Behavior
Feelings	Types of Feelings Intensity of Feelings

VARIABLES

Environmental Discourse

The variable cluster, *environmental discourse*, includes the variables *volume of environmental discourse* and *level of conflict surrounding environmental discourse*. Close to 75

percent of respondents characterized environmental discourse as ubiquitous: “global warming is discussed in all forms of mass media”; “the greenhouse effect is all over the news”; “we are always hearing about global warming from public figures and celebrities”; “almost every day on the news I see random commercials about the environment.” But they also described this discourse as fraught with conflict: “the environment is a heated topic because of the controversy surrounding it”; “people everywhere argue whether global warming is manmade or whether it would exist without humans”; “some people resist the idea of environmental issues because they do not believe there are issues”; “I feel like I’m being pulled in two directions.” About one third of respondents believed environmental discourse had been politicized: “it has become a big part of political campaigns”; “it is hard to find information that is not politically motivated”; “certain people on Capitol Hill may disagree”; “the Republicans refuse to believe that there are any problems with the environment and try to brainwash viewers into believing that.”

Environmental Knowledge

This variable cluster includes the variables *level of trustworthiness of environmental information*, *level of environmental knowledge*, and *level of understanding of environmental issues*. In general, most respondents (67 percent) had low levels of trust regarding sources of environmental information: “I guess you never know these days who to trust”; “everyone lies to get their point across”; “every news source has a biased view and people try to persuade you to one side of the argument so no one will give you a 100 percent truth”; “I don’t trust most sources”; “it is hard to say you can trust anyone...because to me it seems everyone in some way or another is in it for their own personal reasons;” and “information from the news must be taken with a grain of salt.” Yet some respondents (14) viewed some sources of information as trustworthy: “they seem to be reputable and reliable sources I may trust”; “I trust their

judgment”; and “they are a legitimate source.” It appeared that many respondents (36) vastly overrated their ability to discern the validity of environmental information, as in the case of this respondent: “I believe you should always trust your personal experiences above all else because you can see first-hand how bad the situation is and it can’t be slanted or biased in any way.”

Although respondents possessed varying levels of environmental knowledge, most (78 percent) reported low levels of such knowledge: “I honestly do not know much of anything about these issues”; “It is safe to say that I am ignorant”; “I have heard some about this but I am not completely educated on it”; and “I am not up to date on the details.” A few respondents (9) reported being knowledgeable about one issue, but nothing much else: “I know quite a bit about recycling, but I don’t know anything about global warming.” High levels of knowledge were attributed only to researchers and scientists, “experts on these issues”; “who have spent their whole lifetimes studying.”

Respondents also reported a lack of understanding of environmental issues: “most of the things I have heard are slightly over my head.” Much of this confusion was said to be due to the level of conflict surrounding environmental discourse: “The green house effect? Does it exist? I read opinions on both sides of the issue and have to wonder why there is such a discrepancy and wonder what do we actually need to be doing to help our environment”; and “confusion is my first thought. I know that there is a great need to do our parts individually to make every effort to protect the world in which we live, but I also know that the information being given to us is contradictory, and occasionally motivated by scientists and politicians who have their own agenda.”

Significance of the Environment

This variable cluster includes the variables *ways in which the environment has significance, types of environmentally significant experiences, types of environmentally significant memories, number of environmentally significant memories, types of environmentally significant images, and level of anthropocentrism*. Respondents were quite varied in their descriptions of what the environment means to them. The environment had significance to respondents in five domains: (1) home -- “our habitat where the entire human population resides”; “the little terrarium/aquarium we call home”; (2) resource -- “providing us with shelter, food, water and other necessities”; (3) nature -- “the trees reaching for the skies and the bugs digging in the dirt with everything in between”; (4) spiritual symbol -- “proof of God”; “how great God is and how magnificent He is that He would put together such a phenomenon”; and (5) ideological symbol -- “purity and innocence”; “unity: where all nations, races and ethnicities are mixed together in a beautiful swirl of life”; and “we may be at war with other countries but in the end we are all one earth.”

Many respondents (32) reported being influenced by their experiences with individuals, participating in nature activities, environmentally significant events, or global travel: “my aunt... has influenced my feelings toward the environment; she encouraged me to recycle before I even understood the concept”; “I have been in Outdoors Club for five years, so that has definitely made an impact on how I see the environment”; “the impact of the Exxon Valdez oil spill is prominent in my mind”; “the first time I went to Nicaragua was the most eye-opening experience. I witnessed excessive waste everywhere, the smells of burning trash, and the state of destitution in which the Nicas lived. This experience made me aware of how important environmental conservation is to humanity and the planet as a whole.”

Many respondents (42) described personal memories of moments in which the environment was made meaningful to them:

I remember as an elementary student during career week my dad came in to talk to my class. He brought with him 30 pine trees and passed them out after giving an “[I]love you earth” speech. I was so embarrassed, but looking back now I totally appreciate my dad’s love for the earth.

When I was around 10 years old, my grandfather had open heart surgery at Crawford Long Hospital in Atlanta. It was early in the morning around seven when I looked out of the waiting room window and saw how foggy it was outside. I told my mom to look out the window and look at the cloud that had fallen to the ground because I wanted to show off what I learned in school regarding fog – a low cloud. She corrected me and told me that it was not fog, in fact it was smog, a form of pollution. I asked her how this happens and she told me it was from people’s cars and trucks and from factories. She then told me how bad smog was and what was happening to the environment because of all the pollution.

When I was in elementary school, maybe second grade, my teacher left school for a few weeks to visit the South American rainforests. When she came back she told our class how shocked she was to see all the destruction that was taking place in the South American rainforests. She said people were cutting down the trees to build homes and use the trees for paper. Her statement at first did not fully bother me until she said the living creatures such as birds and animals were being forced out of their homes and were dying because they did not have any place to live. This really upset me because I love animals very much and do not like to see them without homes or think of them dying. I took my paper and crumpled it up and told my teacher I was never going to write anything down again because I did not want those poor animals to live without homes or to die. She laughed at me and explained to me that it was okay to write on the paper, but it was not okay for me to use paper for unnecessary reasons.

Some respondents (18) described socially mediated memories of historic environmental events:

I can still remember the effects from the Exxon oil spill many years ago. Seeing the animals covered in oil and dying was a very sad sight.

I recall the terrible consequences of the chemical dumping that occurred in the area known as Love Canal. Those families really suffered. It took so long for the authorities to do anything.

Respondents gave many examples of images that made them think of the environment. Trees were cited frequently, as were other images of nature, and animals. One specific animal, the polar bear, seems to have come to symbolize the environment: “polar bears sitting on melting ice caps”; “polar bears remind me of the environment because they are an endangered species due to the condition of our environment.” The most frequently cited image that evoked thoughts of the environment was the recycling symbol: “when I think of the environment the first image I think of is the recycling triangle. You know, the triangle made out of green arrows. For some reason when I think of the environment I think of environmental problems. I think the reason this image comes to mind is because it is constant”; “the recycling symbol reminds me of the environment because it represents all the things people can do to help the world. It signifies everything that is done to reduce energy use, reuse resources and recycle. All of which lead to a better environment for us all to live in.” Respondents also referred to iconic images such as Captain Planet, Smokey the Bear, and “the ‘Crying Indian’ commercial which had a Native American shedding a tear about littering.” According to one respondent:

A picture of the nuclear test bomb at Bikini Atoll is really significant to me when thinking about the environment, for it is a historical image symbolizing the beginning of an age of nuclear warfare. Nuclear warfare does not only involve the killing of human beings at a specific time, but also brings about a heavy concentration of radiation to previously bombed areas, which kills and deforms lifeforms in the area for hundreds of years after the initial bombing. This drastically affects the area surrounding the epicenter of the explosion, as well as the atmosphere, that we, as human beings, all share.

Respondents also described images that illustrated several different atrocity tales (Bromley, Shupe, and Ventimiglia 1979; Carpenter 1962) with frequent references to three in particular. One tale recounted the dangers of the plastic rings that hold together six packs of soda: “birds get their beaks caught in them and die because they cannot free themselves”; “the image that stuck in my mind was a bird with its head caught in the plastic holder for coke cans.” This tale was also told as “dolphins get their noses stuck and die.” Another atrocity tale referred to the “great garbage patch under the sea, the vortex of trash which they say will never be cleaned”; “the sea is full of rubber ducks and plastics that have decreased in size due to the sun and litter the sea floor and cause damage to aquatic life”; “a trash dump in the Pacific Ocean that is twice the size of Texas”; “with birds and mammals dying of starvation with bellies full of plastic.” Yet another tale described “the swirl of plastic bottles in the ocean. After seeing these scary things it sticks in my head and makes me feel guilty about how I contribute to it.” This tale referred to a commercial for a water filtering product that shows empty plastic bottles stretched across beaches, fields and other natural areas and informed the viewer that Americans consume 39 billion plastic bottles of water a year, enough to stretch around the globe over 190 times.

The final variable in this cluster, *level of anthropocentrism*, reflects the level at which respondents placed themselves, or humans, at the center of the universe. Indicators for this variable usually came about as respondents described the ways in which the environment held significance for them. There was a wide range of variation, from a low level of anthropocentrism: “when you think about it, each of us is a measly speck”; “the environment is like a big chain, each part affects the others and they all need to work together as one; no single part is more important than another;” to a high level of anthropocentrism: “a place where humans

rule”; “the environment is supposed to be clean so that we can benefit from it”; “we need to worry about getting everything okay for ourselves before we try to worry about the animals.”

Environmental Consciousness

This variable cluster consists of the variables *level of environmental consciousness*, *scope of environmental consciousness*, *level of environmental organization*, *intensity of environmental concern*, and *scope of environmental concern*. *Level of environmental consciousness* refers to the level of awareness respondents have of the environment; whether the environment appears in the foreground of people’s minds or if it is relegated to the background. Respondents’ levels of environmental consciousness varied considerably: “I never gave it a thought until I filled out this survey”; “it’s just that I don’t think about it much, it slips my mind”; “I don’t really look to ‘save the environment’ but at the same time...Guess I’m sort of the middle man on that”; “I consciously try to keep the environment in mind”; “my father has worked for the EPA for 35 years and has instilled an unwavering sense of appreciation for our earth in both my brother and me.” *Scope of environmental consciousness* refers to how far (geographically) respondents’ awareness of the environment extends. Responses ranged from “my backyard” to a global perspective, “there is a huge need for clean drinking water in most of the third world countries.” *Level of environmental organization* is a scientific concept and has five attributes: organism (anything that can independently carry out life processes), population (a group of individuals that live together in the same area at the same time), community (all the populations of different species that live and interact in an area), ecosystem (a community of organisms and their non-living environment), and biosphere (the part of the Earth where life exists) (Wright and Boorse 2010). This is another way in which respondents indicated the extent of their environmental consciousness: “these disasters directly affect me when they damage

resources so less become available and prices skyrocket” (organism); “and all the people around me” (population); “for many different animals that live in the forest” (community); “the changes caused in the ecosystem”; “a beautiful planet thriving with life” (biosphere). Intensity of concern varies from low to high, “honestly, I have never really cared all that much about environmental issues”; “I am not a tree hugger or anything, but I do care about the environment and what happens to it”; “I am genuinely concerned.” *Scope of concern* varies as well. Some were concerned about one topic: “I am really only interested in the problem of pollution.” Others expressed broader concern: “I am concerned about multiple issues regarding the environment.”

Many respondents (31) described experiences of a dawning of environmental consciousness, what one referred to as “an aha moment.” I call these narratives conversion tales (see Chapter Eight) because they begin with a description of the respondent as not caring about the environment, or engaging in environmentally harmful behavior, then relate a precipitating event which caused a shift in perspective and subsequent behavior, and often tell of the respondents’ efforts to raise the environmental consciousness of others. According to DeGloma (2010) these “awakening narratives” organize time into “before” and “after” as one transitions from one thought community to another antithetical thought community. Because these transitions require the rejection of one worldview and the adoption of another they usually have a moralistic tone. As one respondent described it:

I have never been really been concerned about the environment...however, in twelfth grade I took Environmental Science; and the various activities and literature we had to read arose a deep concern in my heart. I started going on field trips to clean up the roads of my community to earn extra credit. I continue to come and help clean up the trash because I began to care deeply for the environment.

I used to not care about the environment because I lacked knowledge of what was actually going on. But then I saw a documentary on pollution and it shocked me into thinking about my part in the problem. On New Year's Eve I made a resolution not to litter and I kept that resolution and then I challenged all my friends and family members to do the same.

Environmental Conditions

This variable cluster consists of three variables, *state of current environmental conditions*, *state of future environmental conditions* and *ways in which environmental conditions have changed*. Descriptions of current conditions ranged from very positive: “from what I can tell, the environment is in great shape”; “healthy”; “pure;” to very negative: “our planet is dying and so are we”; “the severely damaged and rapidly vanishing environment.” Many respondents (47) described the state of the environment as in flux or a state of decline: “things are changing in the world, especially with climate change, meaning both humans and animals are going to have to adapt to these changes”; “I think of all the damage we are doing and how the environment is drastically changing.”

When asked to describe what environmental conditions would be like in the future some (17) respondents said they had no idea: “I honestly have no thought on what the environmental conditions will be like in the future. To me there is really no way to tell how things will be and unfortunately we won't know until we get to that point.” Some respondents (18) said they thought things would stay the same, and a large number of respondents (52) thought things would improve: “if we step up and take the actions that need to be taken, then they will be better than ever. All we need to do is start taking the initiative and do what is right and our environment will be perfect. If we do everything that is needed to be done, then our environment will be fine.” However more than half (56 percent) of respondents reported they thought future

conditions would be worse, much worse: “in the future we will be in crisis mode because of the lack of proper care the environment has been given”; “unlivable. I don’t see how we can continue to turn resources into toxins faster than life can or ever could adapt”; “I think environmental conditions will only get worse from here. In the future we might see things like extreme weather, the loss of many animals and forests. I think all of this will happen because of what we humans do to the earth and the way we take the earth for granite [sic].”

When respondents considered environmental conditions over time, they often did so through narratives of change, which, according to LaRossa and Sinha (2006:446) and Zerubavel (2004), take four types:

- 1) Prospective progressive narratives, or looking forward to discourse, such as

I believe that as time goes on, environmental conditions will get better. I feel that as time goes on more and more people will become aware of their footprint on the environment and will soon discover that there is a need for change. Every day more and more people are beginning to notice the effects of pollution and change is just around the corner. The future holds many surprises, but environmental conditions becoming better is not one of them. The fact that many well known famous celebrities are also stepping up has contributed to people becoming more aware and very concerned about the environment.

- 2) Retrospective progressive narratives, or things are better now discourse, such as

With the government giving tax breaks to people who drive more efficient cars and car manufacturers designing cars with better gas mileage, we have made a lot of progress in preserving the environment. We have also come a long way in terms of technology and machinery which has allowed us to eliminate waste as best as possible. We have seen many new discoveries which have led to the right solutions to so many environmental problems. We have begun to create and discover alternative energy sources. Instead of using fossil fuels that pollute the environment scientists have created new solutions that include wind farms which convert wind into energy to power anything from homes to factories.

We have seen a tremendous improvement in the air since newer standards were put in place. The private sector then responded and as a result, in most cities, we have seen marked reductions in pollution from auto exhaust.

3) Prospective regressive narratives, or the future will not be pleasant discourse, such as

If we keep destroying our environment at the rate we are currently, we will live a disgusting, dirty and hard to breathe life. The pollution and openings in the ozone layer will cause cancer rates to increase. Skin cancer will become more prevalent as will lung cancer. The oceans will rise because the ice caps are melting which will eliminate the habitat for polar bears and other animals. If pollution continues the air will have nasty chemicals which will increase asthma rates and make it difficult for people to breathe. In general, if destroying the environment continues and people are not encouraged to save it, it will be too late to fix the damage.

4) Retrospective regressive narratives, or nostalgia discourse, such as

As a kid we could swim all summer in the Rock River or any of the lakes and streams. Now I can't even allow my dog to swim in them. I seriously had to take her to the vet because she kept getting a skin disorder, we finally figured out it was from swimming in the river. I remember beautiful sparkling blue skies. The sky now is blue-grey with Crayola blue only after a heavy rain followed by sunshine. Sixty years ago we were free to drink water from Ganymede Spring down by the Rock River; but years ago the mouth of the spring was cemented shut because of the abundance of fertilizer runoff.

I think of Kaneohe Bay where I grew up. The water was clean and clear, an abundance of life. Seaweed, crabs, opai clams, oysters, a huge variety of fish. Today there is nothing, fish sometimes but nothing else. The drainage pipes empty into the ocean turning the sea red brown from the dirt. The sewage spills into the ocean, prompting warnings not to swim because of bacteria. My children and grandchildren only hear the stories I tell them and the pictures I've taken. The damage was done in a 40 -50 year span. It will take 400+ years to fix, if ever.

Proximity of Environmental Issues

The variable *proximity of environmental issues*, as the core variable, was previously discussed in Chapter Four. This variable describes the distance participants perceive themselves to be from environmental issues. It encompasses the degree to which respondents believe they have already been affected by environmental issues as well as their perceptions of the likelihood of being affected by environmental issues in the future. Respondents located themselves and others at varying degrees of proximity in relation to environmental issues. For example:

I think that society does not worry about it until it involves them; this is because people live such busy lives and they do not worry about something that is so far from reach.

I am simply not concerned with issues such as beach erosion and marine habitats because I live like three hours away from the nearest coastal area.

I don't eat seafood that often so I'm not that affected by the fish who were in the water [where the oil spill occurred], also I'm not making a living by fishing or catching things in the water.

All the recent disasters are not as important to me as they are to others because I was not directly affected by them.

The only reason people started becoming worried is because of their own safety.

The most important environmental issues are the ones that most directly affect us. Things like animal extinction are last on our list compared to living conditions and weather. These issues are important because we are most directly affected by them.

For these participants environmental issues appeared far away in time:

People are not caring much about the environment, thinking they are not even going to be living at that time.

I know it will be a while before a case this drastic comes up, but these are things we should be considering because they may affect your kids or grandkids.

Environmental issues were cognitively positioned as close or distant, and were also considered in terms of the extent to which individuals had been or expected to be affected by them.

Environmental Issues

This variable cluster includes the variables *types of environmental issues, level of importance of environmental issues, sense of urgency regarding environmental issues, resolvability of environmental issues, capability to resolve environmental issues, and length of time required for resolution*. Respondents were aware of many different environmental issues including global warming, pollution, deforestation, species extinction, loss of the rainforest, chemical dumping, plastic water bottle disposal, littering, energy conservation, and the BP oil spill. Respondents attributed varying levels of importance to each of these issues. In general, respondents listed one or two issues that were important to them. However, a few (6) stated that all environmental issues were important: “I believe all environmental issues are important. All these issues affect human life and humans need to take care of the environment and need to be aware of these issues and their importance because once the earth is gone, it is gone, it can never come back.” Some also noted that environmental issues were connected to one another: “all of these issues link off one another, they are not just one example of negative environmental behavior, they all link together in some way. Such as water scarcity for example, it is linked to global warming, drought, overpopulation and pollution. So they are not just one environmental issue after another - one environmental issue is affected by another.”

Most respondents engaged in a process of “lumping and splitting,” as Zerubavel (1991) would put it, in that issues were deemed as either important or not important, with a vast “excluded middle.” For example, respondents characterized recycling as either very important, or not important at all, but they did not characterize recycling as either somewhat important or

marginally important. Respondents also engaged in “moral focusing” in order to delineate which issues were worthy of attention:

I do not care about the extinction of panda bears. Animals that won't breed to continue their domination at the top of the bamboo food tree mean very little to me.

To me this issue is very important and I do not see any reason humans need to extinguish huge populations of fish that have been here longer than we have as humans.

Saving the dolphins, whales, owls, etc. is just not important. Come on, extinction is part of life. Let them go.

More than half (53 percent) of respondents attached a high level of urgency to environmental issues; “these issues must be taken care of NOW!”; “we are walking into a crisis”; “if they are not reduced within the upcoming years we will be at a point of no return”; “if humans do not begin right now educating the youth about the importance of protecting the environment by practicing positive environmental behaviors, and people do not start right now practicing positive environmental behaviors; there will not be environmental behaviors to worry about because the environment will not exist.” However, not all respondents characterized environmental issues as highly urgent; “despite the fact that many say if something isn't done now, entire forests will be lost, I believe that a lot more damage has to be done in order to have such a terrible outcome.” There was a considerable amount of variability in respondents' beliefs about the resolvability of environmental issues; “I believe all these issues will be fixed; there are just a few things that need to be changed in order to do it”; “some issues may never be completely resolved”; “and in the end not all of them will be resolved. I think it would be foolish to think that all environmental issues could be solved. Solving one could mean creating a whole other one”; “these issues will never be 100% resolved.”

Two additional concepts closely connected to the idea of resolvability include *capability to resolve environmental issues* and *length of time required for resolution*. Many respondents (27) believed that we currently have the means to resolve environmental issues; “we have the ability and the technology to do this now, today”; some believed we have the ability to solve some issues, but not all, and many believed we do not have the capability of resolving the issues; “environmental damage is too severe and cannot be reversed.”

The length of time needed for resolution varied from a short span of time to “eons”: “if everybody works on this together then we can get this done in no time”; “I don’t really think it will take that long”; “it really wouldn’t take long in my eyes, it’s just getting people to do it that will take time”; “if everyone was willing to work together to get things done, we could have some problems solved within a year”; “years upon years”; if the full weight of the government was put on the issues it shouldn’t take more than 10 years to restructure things – think back to getting a man on the moon. But with multiple wars in progress and no doubt more on the way, I could still see it happening in 20 years”; “a lifetime”; “across different generations”; “it could take centuries to get all these issues resolved.” Some professed there was no way to know how long it would take to resolve environmental issues: “only time will tell”; “I would say only God, or whatever higher power you believe in, if indeed you believe in one, knows the answer to that”; “I believe there is no correct answer”; “I do not have an answer.” Many responses were conditional: “I think the time depends on which issues people are trying to fix”; “the timetable depends on the severity of the issue.”

Environmental Solutions

This variable cluster includes *responsibility for resolution of environmental issues*, *types of solutions for environmental issues*, and *level of agreement on resolution strategies*.

Respondents were divided between believing that the responsibility for the resolution of environmental issues lies with individuals (“by each person doing one or two small things”), groups of individuals (“people pulling together for a cause”), the government (“the government needs to take control”), or multi-national corporations that “have gone from country to country raping the land and the seas, and are still doing it all over the world, creating death and destruction to our planet and the inhabitants of the world.”

Many respondents (34) offered general solutions to environmental problems, such as: “simple issues should be resolved first”; “government incentives toward building a sustainable environment”; “strict laws and regulations”; “if only we all lend a hand and join in cleaning it up together”; “educating the people about how to fix these problems”; “I think using media to help some environmental issues is the best way to go about it.” Some respondents had ideas about specific solutions:

Make recycling centers more readily available

Reduce, reuse, and recycle. Reducing the amount of trash a family produces by using a compost machine or only buying food they know they will consume instead of tossing it in the trash. Reusing old clothes by using a sewing machine to make them fashionable, this would save money and reduce the amount of clothes that are thrown away. Recycling plastic bottles, aluminum, paper and other items will reduce waste.

Let me put it this way, we must cap off all of the oil and natural gas wells now. We must call a halt to building machines that require these things to run and start building everything to use energies that will be recyclable. There must be viable alternatives to fossil fuels, and they must be marketed to the public.

We need to stop using so much oil. I know we can't stop altogether but we need to cut back significantly across the whole world. Start making more fully electric vehicles for cheaper so people can actually buy them. Start getting and storing more energy from (relatively) unlimited sources like solar and wind. Start building more mass transit like high speed rails. Something needs to be done to get people in cities out of their cars, and a more convenient transit system is key.

As these examples indicate, participants had many solutions, some of which were quite specific.

Most participants confined their thinking about solutions to one topic, such as recycling, reducing waste, or energy use. Only four respondents addressed consumption. For example:

Reuse whenever you can. Reusing objects that already exist has the least environmental impact and it doesn't feed the burning infernos which is consumerism supporting production.

The only power I feel I have against larger issues (issues dealing with corporations and things) is my power of consumption. Even this awareness is probably due to unavoidable advertising. I wonder if by buying products like 'green' Clorox cleaning products if I'm being duped.

Many respondents (36) expressed the idea that consciousness-raising was the way to solve environmental issues: "I think the world needs to be involved in environmental issues. I think the issue should be discussed in greater detail on the news so people can see how serious the issues are and become more aware of the problem and start to make a conscious decision to help with the resolution"; "knowing about a problem is the key to resolving a problem"; "we need to get people to partake in spreading the word and raising awareness of the issues first"; "I think these environmental issues should be resolved by creating more awareness. We need to make people aware of the severity of these issues. Many people don't care about the environment but what they need to understand is that the environment is our home and these issues directly affect us over time."

Consensus, or general agreement on the solutions to environmental issues, was a popular topic. Many (29) respondents believed that agreement among individuals was a prerequisite to solving environmental issues: “everyone must come together and decide what approach is best”; “everyone needs to approach the problem in the same way”; “in my opinion a unified approach is going to be best.” However, many respondents also pointed out that widespread agreement on the issues, as well as their solution, was unlikely to occur:

I believe there are too many varying interests with their own perspectives on these issues for there to be a resolution.

I think there are too many people with too many conflicting opinions and too many desires that do not fit hand in hand with each other.

Unfortunately I am of the opinion that a resolution cannot be found until these perspectives get on the same page with each other. It’s all about interests, I suppose, and everyone has their own. I think it would at least take a majority to come to a good resolution, but most of these issues have multiple interests and therefore there isn’t really a cumulative majority to be had.

Many respondents (26) utilized solution rhetoric in formulating their arguments for the resolution of environmental issues. Solution rhetoric is deployed through “figures of thought” (Kennedy 1963; Vickers 1988). Respondents’ figures of thought conformed to the three types identified by Myerson and Rydin (1996): *the dialectic of catastrophe*, *the feasibility possibility*, and *overcoming the polarity*. *The dialectic of catastrophe* is a “logic that interlocks disaster and salvation” (p. 182); it posits that conditions are (or will be) so bad that a solution must be imminent and it must be total. As Myerson and Rydin describe it “the dialectic is that the assumed catastrophe prepares its own antithesis, the solution” (p. 182). This figure of thought is exemplified by this particular response:

I believe that environmental conditions will keep declining until they get to a certain point where the air and water are so polluted, species of animals and fish have died out, coastal areas are flooding, agricultural areas are barren, resources are used up and there is no choice but to make a serious change that most will not like, not even those in power, but it will be the only solution left by that time.

The feasibility possibility is about the process of deciding upon a solution. This figure of thought does not have the sense of urgency that the dialectic of catastrophe does, but it is a persuasive thought sequence. There is “a process of review, a posture of consideration, and then a spring into choice, *the* choice...the necessary single option” (p. 187). This response provides an example of the feasibility possibility:

I think there are several potential resolutions for this issue. Hybrid cars are a possibility but going further to improve the possibility of completely solar cars may be critical. Also, developing more mass transit options and expanding what we already have in that field might be a good solution. Another option might be better incentives for people who do make an effort, such as vouchers for car poolers or even charging a single driver a fee to enter the city might force people to recognize the problem. It obviously would take time to research and implement different programs and changes. It seems that for now the best option would be to hit people in their pocketbooks – go with the financial incentives and sanctions.

The overcoming the polarity argument constructs a polarity between two factors, such as the economy and the environment and then overcomes that polarity by some means of reconciliation. This figure of thought entails drama; “a contrast is constructed, and then deconstructed to yield unity...new practices are made available, to overcome the conflicts” (p. 200). For example:

Of course capitalism is a factor in environmental issues. It has contributed to pollution around the world. Clean water is a crucial environmental issue for many developing countries. But there are companies that can provide pure spring water from other sources to those who need it. For example, I read in *Newsweek* that some company has bought the rights to sell water from Alaska to villages in India that need it. Is this a form of commodification – yes. But it helps solve the problem of providing clean water to help the environment while also providing jobs and helping out the economy.

Environmental Behavior

Variables in this cluster include *types of pro-environmental behavior, types of environmentally harmful behavior, frequency of performance of pro-environmental behavior, level of commitment to performing pro-environmental behavior, level of effort required of pro-environmental behavior, level of efficacy of pro-environmental behavior, types of subjective norms regarding the performance of environmentally significant behavior, situational context of environmentally significant behavior, and types of barriers to the performance of pro-environmental behavior*. Respondents categorized many types of behavior as environmentally friendly: conserving water and energy, limiting gasoline use and driving energy efficient cars, not littering, composting, taking public transportation, and especially recycling. Conspicuously absent from this list was any sort of political or collective action. Not a single respondent mentioned joining an environmental organization, protesting a corporation's environmental policies or writing one's congressional representative.

Respondents also characterized many types of behavior as environmentally harmful: littering, cutting down trees, polluting, wasting water, overpopulation, and not recycling. Only one respondent suggested that American consumption habits were harmful; "The insane amount of manmade products we purchase and use. They are kind of like sin itself, from the moment

they are created nothing good ever really comes from them.” Some behaviors were considered especially harmful. For example:

Driving certain vehicles:

Using those ridiculous cars and SUVs that pollute the air and waste gas.

Diesel trucks that pollute the environment way too much.

Corporate dumping:

Companies dumping their disposables into lakes, ponds, or the ocean to get rid of them instead of doing the right thing to get rid of them.

Apathy:

Ignorance and apathy are the most harmful behaviors for the environment.

I think the worst harm is the harm of inaction. When a person could do one small thing to help and just decides they don’t care, that in itself is the worst harm. Knowing something needs to be done and just choosing not to do it is basically saying you do not care what happens to our earth or to the people who live on it.

Respondents varied significantly as to the frequency of performance of pro-environmental behavior. As previously discussed in Chapter Five, the most frequently reported regularly performed environmentally friendly behavior was recycling. However, commitment to the performance of this pro-environmental behavior varied among respondents: “I try to”; “I recycle whenever it is convenient”; “I make a habit of”; “I would never dream of not recycling something that is recyclable.” Some respondents acknowledged that it did take some effort to recycle but most characterized recycling as an easy yet very efficacious behavior toward “saving the environment”:

I recycle because it just makes sense. It was an easy change to make and I know it helps, it's proven to cut down on the amount of waste. Although one person cannot change how much waste accumulates, I feel that by doing my part in recycling, I am helping save the environment.

This participant recycled because it took so little effort:

I recycle on a regular basis... I perform very basic environmentally friendly behaviors because honestly, that is what I have time for. Sometimes the smallest behaviors are the ones that matter most. These behaviors also do not require me having to change my entire schedule or way of living so it is what fits me best.

The following two participants considered recycling from a broader perspective:

My number one example [of environmentally friendly behavior] would be recycling. This is taking things that would hurt and harm the environment and recycling them for future consumers to use. Recycling is a three step process. Firstly it requires an individual to care enough to purchase some sort of receptacle to collect the plastic or paper and recycle it. Secondly it requires that an individual commit to separating recyclables from trash. And the third is to continue the actual act of recycling so that our future generations won't have to deal with our pollution and environmental issues.

I recycle on a daily basis, to the point where we have only one bag of actual trash for a family of six. I enjoy walking on the track at our local high school which is made of recycled materials and I like to think that my tires were used to make this track. It makes me sick to think of all the billions of bags of waste which go into landfills, the ocean, or trucked to who knows where, which could have been avoided with such simple efforts from those who dumped them. Recycling is first and foremost in being environmentally friendly. I have recycled my whole life. Past teachers as well as my family have stressed the importance of recycling. This will definitely help the environment.

The less effort, or cost, environmentally friendly behavior requires of individuals, the more likely it is to be performed: "I perform these actions because they are easy"; "these behaviors also do not require me having to change my entire schedule or way of living so it is what fits me best;" People are more likely to perform environmentally friendly behavior if they

believe their actions have an effect; “with things like energy conservation and recycling I feel like I am making a difference, however I never feel like I can do anything to help stop global warming.”

The variable *subjective norms* refers to the extent to which an individual feels he or she should perform, or refrain from performing, a particular behavior based on whether or not someone else important to the individual would perform such behavior. Subjective norms arise from the “subjective pressure one would put on oneself (largely unconsciously) to mimic and/or behave similarly to high status individuals in the social milieu” (Shackelford 2006:1555).

However subjective norms only guide behavior if they are salient and invoked in the immediate situation (Cialdini and Goldstein 2004). Many respondents gave examples of “social pressure by valued others” (p. 597):

When I went to school in North Carolina around Appalachian State University, everyone up there was so conscious of preserving the environment, almost everything we used was recycled or recyclable. Everyone was a cyclist and very up to date on environmental issues. I would never have dreamed of not recycling, but since I moved here I have not had another “ah-ha” moment about the environment since.

I have a friend who is an environmental advocate. He would always amaze me by going through trash to find a bottle that could be recycled instead of thrown away and he always rode his bike to work instead of driving his car. At first having this guy as a friend was a bit of a joke when he did these things, but then his nature friendly habits started to rub off on me and I consider recycling more.

The two participants quoted previously felt pressured by others to engage in pro-environmental behavior, while the following two participants want their behavior to influence others:

I like to buy things made from recycled material, but this often means that it costs more in the store. I may not have a lot of money but I believe that paying a little more for something that helps out everyone is a right decision at any time. I like to think that if I pass along the message it's recycled material and helps out our environment, people will learn from my example and do the same thing, causing an even bigger chain reaction that will help out everyone.

I have taken the time to find recycling bins whenever I am discarding my trash. Although I am just one person and I could just toss the trash wherever, I really wanted to impose this ideal on others around me.

The variable *situational context* refers to the situation, or circumstances, in which decisions regarding the performance of environmentally significant behavior arise. Sometimes the situation creates a dilemma, in which an individual has to make a decision that requires a tradeoff between environmental impact and personal benefit, cost, or inconvenience. The following responses illustrate the concept of the situational context:

I was in the middle of a move. I had sold my house. I had two hours until the closing and did not have time to take my cans to the recycling center. Therefore, unfortunately, I had to put the cans by the curb, with the trash. I hated doing this but my vehicle was completely full and there was nowhere else to put them. I was hoping someone would see them and take them themselves.

We had gone on a family vacation and one of the kids had gotten carsick. We had the smelly napkins that had cleaned up the vomit with us in the car. As we were teaching our children not to litter, we kept the smelly napkins in the vehicle until we were able to find a trash can. Now our children make an effort to pick up trash and don't ever ask to throw something out the window no matter how smelly or yucky.

According to respondents there were many barriers that prevented them from engaging in pro-environmental behavior. These barriers fell into four categories: lack of awareness or knowledge, personal constraints, external constraints, and the selfish characteristics of others.

These participants attributed their non-performance of pro-environmental behavior to lack of awareness or insufficient knowledge:

It is not that anything is preventing me from doing these things, it's just that I do not think about it all the time so it slips my mind.

I just don't have enough information as to what can be recycled and what can't, and where to take those things that can be recycled.

Many participants cited personal constraints, including laziness, money, time, and perceived risk as reasons for not performing pro-environmental behavior. For example:

We live in a lazy society. I fall victim to it, sometimes it's just easier to throw it in the trash.

It seems that saving the environment can be expensive.

I am probably not doing these things because I am busy with work and do not have much free time. Just being caught up in my daily life and being selfish about the planet is preventing me.

It would be unsafe to ride my bike on roads with heavy traffic.

Some participants blamed their lack of performance of pro-environmental behavior on external constraints, such as bureaucratic rules and lack of leadership:

I live in an apartment complex and the use of solar panels in my complex is not acceptable.

Some years ago our village council issued an ordinance that we could no longer burn paper in a steel barrel in the garden.

I do not see anyone stepping up and taking charge.

Participants gave various reasons for others' non-performance of pro-environmental behavior including unwillingness to sacrifice, greed, the free rider problem, and resistance.

People are not going to want to give up everything.

Some people don't care and have no reason to care about the environment because they are benefitting from its exploitation. Many individuals and companies have discovered that they can make a profit from pretending to care about the environment.

What is the holdup? Greed and people in power who are making their fortunes by not doing it.

Many people think that it's not their obligation to do something about these problems.

I think people are waiting for other people to make the changes and in effect everyone is waiting for someone else to make the change. So nobody will make a change and things will continue to get worse and worse.

I think for the majority, other people just expect everyone else to take care of these issues. That is the problem because if everyone expects someone else to fix these issues nothing will ever get done.

Others may really be defiant on the issues.

I know we need places for the fast growing population to live. However many houses can be rehabbed and here in Detroit there are sometimes two blocks of empty houses that could benefit from developer's money being poured into rehabbing these blocks. Maybe instead of new, new, new, people could begin to shift their view and see old, redeveloped areas as more desirable. However, that will take a lot of money and overcoming the great resistance to change that is sure to arise.

As these quotations illustrate, participants seemed more able or more willing to explain others' lack of performance of pro-environmental behavior than their own.

Feelings

This variable cluster consists of two variables, *types of feelings* and *intensity of feelings*. These variables refer to feelings that are generated from the performance or nonperformance of environmentally significant behavior. These feelings in turn either reinforce current behavioral habits or initiate a change in behavior. Respondents reported feeling “bad” or guilty after performing environmentally harmful behavior and this guilt often made them change their behavior or at least reflect on it: “It hurts me to know that I am putting toxins into our atmosphere and I am looking into purchasing a more fuel efficient vehicle”; “Then I feel extremely guilty in my own negligence to my environmental responsibilities and vow to change my ways.” Likewise, performing environmentally friendly behavior often spurred individuals to perform additional positive behaviors. For many participants, performing pro-environmental behavior made them feel better about themselves:

Doing little things make me feel as if I’m part of something bigger.

I choose not to litter. Just because it makes the world cleaner and safer. Yeah, it would be easier to toss something out the window, by why do that when it affects my life? It is just a healthy habit for me and it makes me feel like a better person.

I felt really good about myself and I felt that I did something positive to help out my community and the environment.

The positive feelings generated by performing pro-environmental behavior caused these participants to do more:

Recycling was something I challenged myself to do and after I realized how good I felt afterwards I kept doing it and it has become routine.

I actually do filter my own water. I started doing this at first to save money on buying cases of bottled water one after the other. After thinking about how much this helps the environment this made me feel good and I started recycling as well.

I recently I had to get rid of some waste that was considered hazardous. Yes, I could have bagged it up and thrown it away in the big trash can at the end of my driveway, but this did not feel right. The right thing to do was look on Google and find the correct type of waste disposal property that takes hazardous waste and to do this right away. I had to do my research, buy specific containers, and then take the time and money to get there and deposit my waste. It was a pain in the butt, but made me feel really good in the end.

This participant suggested that the positive feelings associated with performing pro-environmental behavior will motivate individuals to adopt a broader range of pro-environmental behaviors:

People will start to feel good about themselves once they start participating in these simple behaviors. Once they begin to practice these simple tasks, they will want to begin participating in larger and more complex environmentally friendly behaviors.

THE ENVIRONMENTAL SOCIO-COGNITIVE SCHEMA

The *environmental socio-cognitive schema* is derived from the ways in which respondents used the six cognitive acts (*perceiving, focusing, classifying, signifying, remembering, and timing*) in thinking about the environment. Respondents used *environmental socio-cognitive schemas* to filter and interpret environmental knowledge, assess the significance of the environment as a social problem, guide environmentally significant behavior, and justify and explain their behavior. The particular variables associated with each cognitive act are listed in Table 7.2.

Table 7.2 The Environmental Socio-Cognitive Schema

Cognitive Act	Variable Name
Perceiving	Level of Environmental Consciousness Scope of Environmental Consciousness Types of Subjective Norms Regarding the Performance of Pro-environmental Behavior Situational Context of Environmentally Significant Behavior
Focusing	Level of Anthropocentrism Intensity of Environmental Concern Scope of Environmental Concern Proximity of Environmental Issues Level of Importance of Environmental Issues
Signifying	Ways in Which the Environment has Significance Types of Environmentally Significant Experiences Types of Environmentally Significant Images
Classifying	State of Current Environmental Conditions State of Future Environmental Conditions Types of Pro-environmental Behavior Types of Environmentally Harmful Behavior Types of Environmental Issues Responsibility for Resolution of Environmental Issues Resolvability of Environmental Issues
Remembering	Number of Environmentally Significant Memories
Timing	Ways in Which Environmental Conditions Have Changed Sense of Urgency Regarding Environmental Issues Length of Time Required for Resolution of Environmental Issues

Variables illustrating the cognitive act of perceiving include: *level of environmental consciousness*, *scope of environmental consciousness*, *situational context* and *social norms*. The two variables, *level* and *scope of environmental consciousness*, indicate respondents' awareness of the environment. The variable *situational context* allows us to see how respondents frame

their experiences when making environmentally significant behavioral decisions. The variable *subjective norms* shows how respondents' thinking about the environment is influenced by others' thinking about the environment.

Variables indicative of the cognitive act of focusing include: *level of anthropocentrism*, *intensity of environmental concern*, *scope of environmental concern*, *proximity of environmental issues*, and *level of importance of environmental issues*. These variables reflect what respondents pay attention to regarding the environment. The variable *level of anthropocentrism*, reflects the extent to which respondents place themselves (humans) at the center of the universe. Three variables, *intensity* and *scope of environmental concern* and *proximity of environmental issues* delineate respondents' mental horizons, what falls within the boundary of consideration. The variable *level of importance of environmental issues* illustrates which issues respondents consider relevant.

Variables that illustrate the cognitive act of signifying include: *ways in which the environment has significance*, *types of environmentally significant experiences*, and *types of environmentally significant images*. These three variables allow us to see how respondents assign meaning to the environment and their experiences with it. The variable *types of environmentally significant images* allows us to see the extent to which symbols of the environment reflect shared meanings.

The cognitive act of classifying becomes clear through the variables *state of environmental conditions*, *state of future environmental conditions*, *types of pro-environmental behavior*, *types of environmentally harmful behavior*, *types of environmental issues*, *attribution of responsibility for resolution of environmental issues*, and *resolvability of environmental issues*. All of these variables show patterns of grouping based on meaning. Most of these

variables reflected respondents' tendencies toward bipolar grouping of elements into "either/or" categories, with a largely ignored "excluded middle" (Zerubavel 1991).

The two cognitive acts remembering and timing appeared less frequently in the data than the other four cognitive acts. The act of remembering is illustrated by the variable *types of environmentally significant memories*. The variables *ways in which environmental conditions have changed*, *sense of urgency regarding environmental issues*, and *length of time required for resolution of environmental issues* represent the act of timing.

Members of each cultural group used the six cognitive acts similarly in developing their environmental socio-cognitive schemas. These schemas differed considerably across cultural groups. Chapter Eight describes these group differences in detail.

THE MODEL OF ENVIRONMENTALLY SIGNIFICANT BEHAVIOR

Figure 7.2 provides an illustration of the model of environmentally significant behavior. This model elaborates on the relationship between the environmental socio-cognitive schema and pro-environmental behavior previously illustrated in Figure 6.1 which is detailed in Figure 7.1 below.

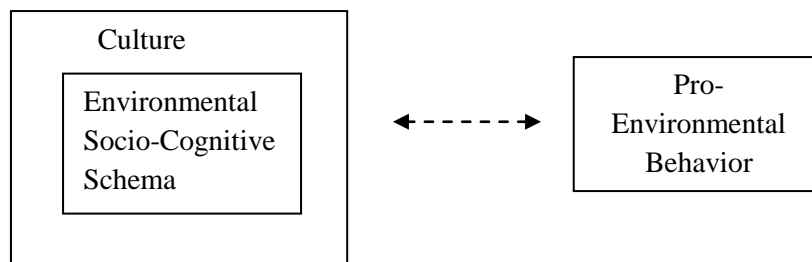


Figure 7.1 Detail of Figure 6.1 Factors Influencing Pro-Environmental Behavior

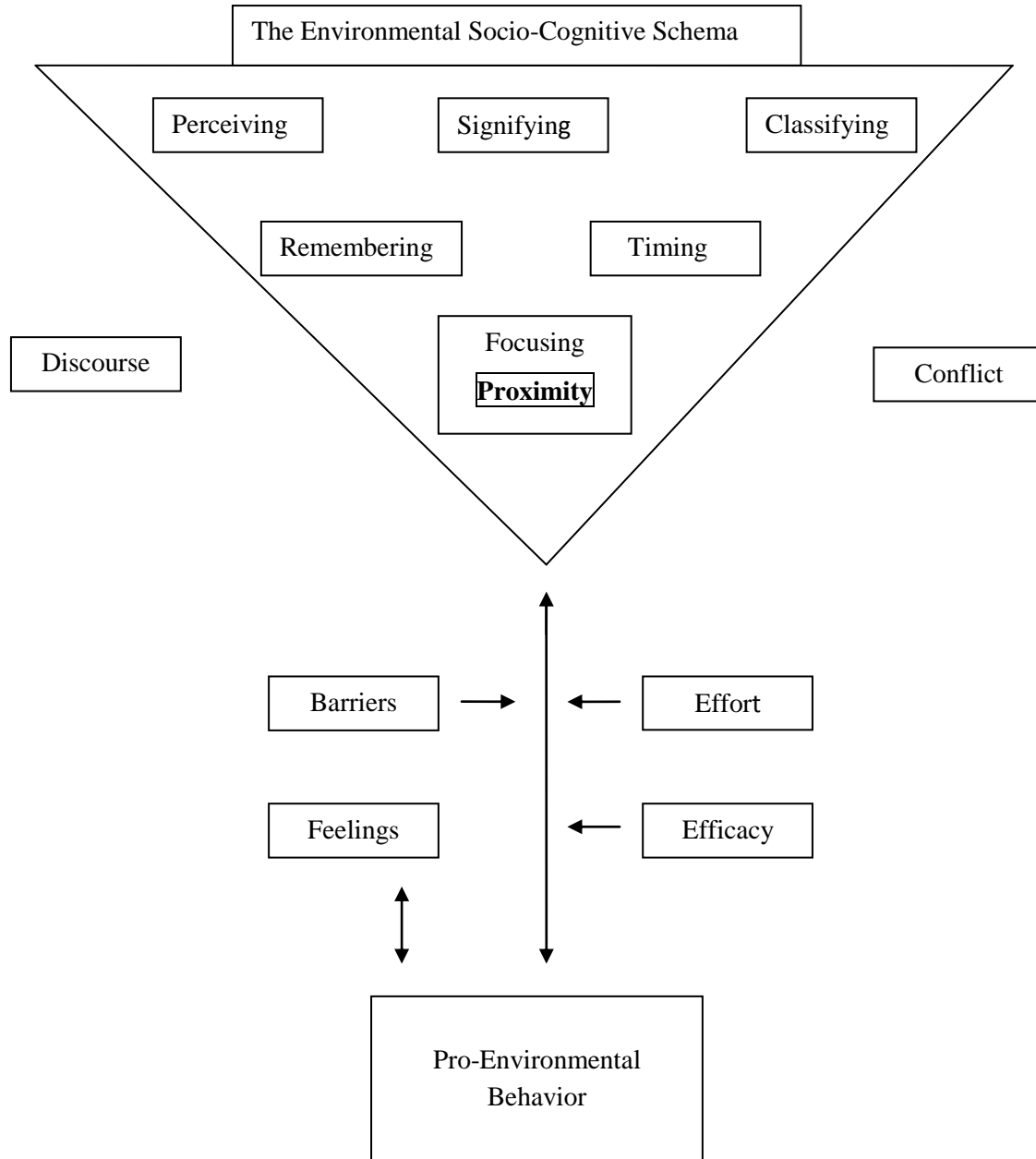


Figure 7.2 The Model of Environmentally Significant Behavior

The variable *proximity of environmental issues* is central to the model of environmentally significant behavior. The performance of pro-environmental behavior is directed by the environmental socio-cognitive schema. Embedded within the environmental socio-cognitive schema, *proximity of environmental issues* exerts a powerful influence on the performance of pro-environmental behavior. The amount of pro-environmental behavior individuals perform depends on the distance they perceive themselves to be from environmental issues. Environmental issues can be cognitively positioned as near, or far away, and can be considered in terms of the extent to which individuals have been or expect to be affected by them.

The variable *proximity of environmental issues* is directly related to the variable *frequency of performance of pro-environmental behavior*. Recycling represents the threshold of pro-environmental behavior. Most people, 63 percent of respondents and 68 percent of Americans (Harris 2009), recycle regularly. However, the mean number of total pro-environmental behaviors performed by respondents was 2.41, and the next most frequently performed behavior was conserving household energy. For the most part, respondents' performance of pro-environmental behavior remained at minimal levels. Recall from Chapter Five, only 55 percent of respondents *disagreed* with the survey statement that the ecological crisis has been exaggerated. This corresponds to current research showing declining confidence in the evidence of deteriorating environmental conditions (Leiserowitz, Maibach, and Roser-Renouf 2010; Spence, Venables, Pidgeon, Pootinga, and Demski 2010), and could be an indication of environmental skepticism (Jacques 2006, 2008; Jacques, Dunlap, and Freeman 2008). The respondents who reported performing higher levels of pro-environmental behavior were those who considered environmental issues to be within close range, and had either already been affected by a particular environmental issue or expected to be affected by one or more in

the future. Additionally, the proximity attributed to environmental issues also affected the types of environmentally friendly behavior respondents performed and their level of commitment to the behavior.

The variable *proximity of environmental issues* is connected to many other variables in the model including *types of environmentally significant experiences*, *types of environmentally significant memories*, *ways in which the environment has significance* and *level of environmental consciousness*. Respondents who reported having had environmentally significant experiences and/or environmentally significant memories attached special significance to the environment and were therefore more likely to have higher levels of environmental consciousness which increased their anticipation of being affected by environmental issues:

I spent many hours at the shore with my grandmother when I was young, and so the beach is very important to me. Because of that I am very much aware of the continuing likelihood of oil spills from offshore drilling and the resultant loss of marine and bird life. It's not a question of 'if'; it's a question of 'when.'

The variable *proximity of environmental issues* is also closely related to the variables *level of importance of environmental issues* and *sense of urgency regarding environmental issues*. Respondents' perceptions of the proximity of environmental issues were affected by their knowledge of environmental issues and their ability to understand them, which in turn determined the level of importance assigned to the issues and the sense of urgency attached to them:

Honestly, global warming is an issue that is not very important to me. It is definitely an issue that is talked about a great deal but for some reason, it does not impact me very much. I think the problem is that I do not completely understand the issue.

The *variable proximity of environmental issues* is also connected to the variables *types of environmentally significant images*, *state of current environmental conditions*, *state of future environmental conditions*, and *resolvability of environmental issues*. Respondents described seeing environmentally significant images, such as beaches littered with discarded water bottles and especially images of animals in distress that made them feel that environmental issues were close at hand. Respondents' classifications of the state of current and future environmental conditions as positive or negative influenced their perceptions of the proximity of environmental issues, which in turn affected their thinking regarding the resolvability of environmental issues as well as suitable solutions:

Well, obviously environmental conditions are not that great right now, but they are improving – and I think they will be much better in the future – due to the stricter laws on offshore drilling put in place by the Obama administration and the continued discoveries of alternative energy sources. The availability of new technology will solve these problems - we still have plenty of time.

Glaser's (1978) and Strauss and Corbin's (1998) discussions of GTM are helpful in making sense of the connections between other variables in the model. In this study I examined the processes by which respondents move from thinking about the environment to performing (or not performing) pro-environmental behavior. As Glaser (1978:74) puts it, GTM researchers should search for "causes, contexts, contingencies, consequences, covariances, and conditions" around significant variables.

The variables *volume of environmental discourse* and *level of conflict surrounding environmental discourse* are contextual; individuals' thinking about the environment occurs under conditions in which environmental talk is ubiquitous and contested. The three variables, *level of effort required of pro-environmental behavior*, *level of efficacy of pro-environmental*

behavior, and *barriers to the performance of pro-environmental behavior* are contingency variables, moderating the performance of environmental behavior. The less effort pro-environmental behavior requires, the more likely it is to be performed. Individuals are also more likely to perform pro-environmental behavior if they believe their efforts will have a significant effect. And, as respondents clearly demonstrated, there can be any number of barriers to the performance of pro-environmental behavior. The variables *types of feelings* and *intensity of feelings* are both causal and consequential. The relationships between feelings and the performance of pro-environmental behavior are reciprocal; individuals feel good as a result of engaging in environmentally friendly behavior and these positive feelings lead to the continued or elevated performance of such behavior.

The variable *proximity of environmental issues* is the key to understanding the gap between pro-environmental attitudes and pro-environmental behavior. The concept of proximity illuminates the gulf between behavior at the abstract level (i.e., thinking about pro-environmental behavior in general), and behavior at the situational level (i.e., performing a specific pro-environmental behavior under particular conditions). Pro-environmental attitudes remain abstractions whereas the performance of pro-environmental behavior is situational. In their study of the gap between egalitarian parenting attitudes and egalitarian parenting behavior, LaRossa and LaRossa (1981) also found a significant distance between behavior at the abstract level (i.e. thinking about egalitarian parenting behavior in general), and behavior at the situational level (i.e., actually performing egalitarian parenting once the baby has arrived).

In a series of experiments using vignettes (such as assisting refugee immigrants) that past researchers had found to be conducive to the expression of particular values (such as benevolence), Torellia and Kaikati (2009) examined the effect of abstract and concrete mindsets

on the relationship between values/attitudes and behavior. The researchers found that values/attitudes more reliably predicted behavioral intent when participants were primed to think abstractly, and they found no relationship between values/attitudes and the corresponding behavioral intent when participants were either primed to think concretely, or not primed at all. For example participants expressed high levels of behavioral intent when asked if they would be willing to help refugee immigrants in general, but much lower levels of behavioral intent when asked if they would be willing to engage in specific helpful actions. The researchers posit that values/attitudes “are abstract representations of ideal end states” (p. 231) that are more likely to be expressed when individuals think abstractly about behavior, and not when they think concretely about performing a specific behavior. It would seem that this concept of proximity, in terms of the distant realm of the abstract as opposed to the immediate realm of a specific situation, has the potential for explaining other attitude-behavior gaps as well.

CHAPTER EIGHT

MOTIVES, ACCOUNTS, STORIES AND THREE CULTURALLY SPECIFIC ENVIRONMENTAL SOCIO-COGNITIVE SCHEMAS

This chapter delves more deeply into the thought processes that lead to the performance, or lack of performance, of environmentally significant behavior. This analysis is based on responses to two open-ended survey questions: (1) “What other environmentally friendly behavior(s) would you like to do that you are not currently doing, and what is preventing you?” and (2) “Describe a situation where you had to make a decision that required a tradeoff between environmental impact and personal benefit, cost or inconvenience. Which factors influenced your decision?” The situational aspect of these questions allowed me to probe respondents’ thinking about environmentally significant behavior and also to see how individuals’ *environmental socio-cognitive schemas* differed according to cultural group membership. In this chapter I describe the ways in which respondents use motives, accounts and stories to explain the performance or lack of performance of environmentally significant behavior. I will also show that the three cultural groups egalitarian, hierarchist, and individualist, have very different ways of thinking about the environment.

As discussed in Chapter Three, much of the research into environmental behavior has relied on self-reports of values and attitudes, or orientation, toward the environment in an attempt to predict the likelihood of the performance of pro-environmental behavior. Yet, as shown by the multiple regression analyses discussed in Chapter Six, higher scores on the widely accepted measure of pro-environmental orientation, the New Ecological Paradigm Scale (Dunlap, Van Liere, Mertig, and Jones 2000), were not associated with higher levels of actual performance of pro-environmental behavior. Indeed, higher scores on the widely accepted measure of pro-

environmental behavior, The Environmental Behavior Scale (Dunlap and Scarce 1991), were not associated with higher levels of actual performance of pro-environmental behavior. As discussed in Chapter Six, I believe that the Environmental Behavior Scale (Dunlap and Scarce 1991), deployed as it is in isolated self-report questionnaires devoid of situational context, at best measures behavioral intent. Some scholars engaged in pro-environmental behavior research do acknowledge the existence of “situational constraints and facilitators of behavior” (Kaiser and Gutscher 2003:586), but maintain that the “perceived behavioral control component” of the measures used adequately accounts for contextual influences.

The same measurement issue appears when using the Environment Identity Scale (Stets and Biga 2003) to predict the performance of pro-environmental behavior. According to Stryker (1968, 1980), an identity’s position in the salience hierarchy should predict behavior when different identities calling for discordant behavior are invoked simultaneously. Yet, as illustrated by the multiple regression analyses discussed in Chapter Six, higher scores on the Environment Identity Scale were associated with higher scores on the Dunlap and Scarce Environmental Behavior Scale, but were not associated with higher levels of actual performance of pro-environmental behavior. Previous research has not yet considered the relative impact of identities that may compete with the Environment Identity. In order to address the relative positioning of competing identities I framed the question asking respondents to describe a situation requiring a tradeoff between environmental impact and personal benefit, cost, or convenience as a dilemma, which obliged respondents to indicate quite clearly the Environment Identity’s actual ranking in their salience hierarchy.

The concepts of motives (Mills 1940), vocabularies (Burke [1945]), and accounts (Scott and Lyman 1968) are useful in further examining the relationships between both environment

identity and pro-environmental behavior and pro-environmental orientation and pro-environmental behavior previously illustrated in Figure 6.1 and detailed in Figure 8.1 below.

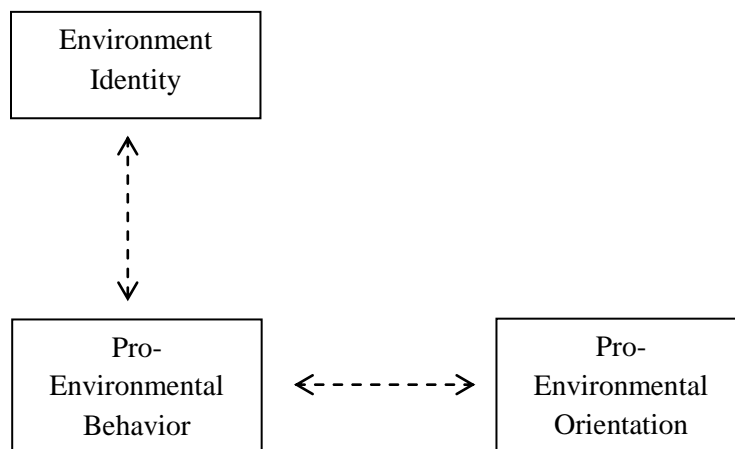


Figure 8.1 Detail of Figure 6.1 Factors Influencing Pro-Environmental Behavior

Motives, vocabularies, and accounts help explain why participants receive high scores on the Dunlap and Scarce Environmental Behavior Scale and the New Ecological Paradigm Scale, yet actually perform minimal levels of pro-environmental behavior.

MOTIVES

Mills (1940) distinguished between intention, “awareness of anticipated consequence,” and motives, “names for consequential situations, and surrogates for actions leading to them” (p. 905). Motives are not something within an actor that compels a certain course of action, but rather are words, “vocabularies of motive,” that justify a questionable course of action within a certain situation. *Ancillary* motives arise when an individual undertakes an act for one motive, but subsequently assumes another motive, one which may increase the individual’s status in the eyes of others. Several respondents wrote that they engaged in environmentally friendly

behavior such as conserving energy, water, or gas but then added that their main reason for doing so was to save money. One respondent said: “I guess the biggest thing I do to help the environment is riding my motor cycle. I try to ride it as much as possible instead of driving my car to conserve gas. Not only is it more environmentally friendly, but it’s fun!” Some respondents also invoked *moral* vocabularies of motive, for example; “I was taught to know the difference between good and bad”; “littering is bad; that’s why there is a fine for it.” Motives can also be ascribed to others, as when parents give children *standardized* motives which guide their behavior until they can adopt these motives for themselves: “I was taught from an early age that the environment was something that needed to be taken care of. My mother told me ‘take care of the environment and it will take care of you.’” Acceptable motives varied by situation, group and culture. According to Mills, we can never get at the “real motive” behind an individual’s behavior, “all we can meaningfully be asking for is the controlling speech form which was incipiently or overtly presented in the performed act or series of acts” (p. 910).

ACCOUNTS

The concept of accounts as formulated by Scott and Lyman (1968) is crucial to examining the gap between attitudes or expectation and behavior. The authors define an account as “a statement made by a social actor to explain unanticipated or untoward behavior – and whether that behavior is his own or that of others, and whether the proximate cause for the statement arises from the actor himself or from someone else” (p. 46). Accounts are also “standardized within cultures.” Accounts are aligning actions necessitated by problematic situations in which an individual attempts to represent his or her behavior as corresponding to cultural expectations of what is appropriate to the situation (Stokes and Hewitt 1976). Harre, Clarke, and De Carlo found that in constructing their accounts, individuals “are displaying

knowledge of ideal ways of acting and ideal reasons for doing what they have done or omitted to do” (1985:88). According to Stokes and Hewitt, people generally want their behavior to appear to conform to cultural norms, but do not necessarily *do* what is culturally appropriate, preferring instead to pay “ritual attention to cultural expectations ” while doing what they want (1976:844).

Scott and Lyman (1968) differentiate between excuses and justifications. Excuses are offered when an individual acknowledges that his or her behavior was incorrect, but fails to accept responsibility for it. There are four types of excuses: *accidents*, *defeasibility*, *biological drives*, and *scapegoating*. In contrast, justifications are offered when an individual accepts responsibility for the behavior, but denies that it was incorrect. There are three types of justifications: *techniques of neutralization*, *sad tales*, and *self-fulfillment*.

The question, “What other environmentally friendly behavior(s) would you like to do that you are not currently doing, and what is preventing you?,” elicited many accounts, both excuses and justifications. The most frequently given type of excuse was that of defeasibility, in which individuals claim that due to lack of knowledge or inadequate information they are not responsible for their behavior:

I would like to completely stop polluting the air with my gas vehicle by getting a smart car, but wouldn't that use more energy? So I am not really sure of that situation.

I would like to practice more recycling behaviors. I believe that I am not well educated on recycling and how to perform recycling tasks. I am not certain what to recycle. I know I can recycle plastics but other than that I am not sure what to recycle. I know the importance of recycling and I think it is a great concept, I just wish I knew how to recycle exactly.

Global warming is an issue that I know is important to other people but not as big of a concern to me because this issue is so large that I personally cannot do much to help. It is not that this issue is not important to me it's just that I know nothing about it. I know that I am not able to fix this problem alone or with help. Really, it's not that it isn't important, it's just that I totally don't understand it. My educational background has not given me any of the facts in this area and at my age I do not intend to specialize in global warming personally.

Another frequently offered type of excuse was that of scapegoating, in which an individual characterizes his or her questionable behavior as the fault of someone else; the individual shifts responsibility for his or her behavior onto another:

I think people make it hard for people to recycle. For instance where I live you have to pay money to have a recycling service come and pick up your recycling. You can take it to a recycling center, but there you have to pay for them to take it off your hands. Plus the amount of recyclables you go through a day (paper, cardboard, plastic, glass, aluminum) add up even after a few days... it becomes tedious, and costly to take it down to a recycling center. Recycling is just made out to be harder than it is, but if you don't have easy access to recycle more than likely you will end up throwing it all out in the trash.

I wanted to recycle newspapers at this recycling place near my house. However, the fact was that I did not live in the area so they would not let me drop off my newspapers. This was my inconvenience and it was very difficult and frustrating. Why wouldn't somebody want to have more papers to recycle?

Justifications were also offered frequently. Techniques of neutralization are common in accounts given for criminal behavior (see Scully and Marolla 1985) and consist of *denial of injury*, *denial of the victim*, *condemnation of the condemners*, and *appeal to loyalties*. In denial of injury, the individual takes responsibility for the behavior, but insists that no one was hurt by that behavior or that the consequences of the behavior were minimal. For example:

I don't recycle. Somebody told me that at wherever the trash is taken to, they have people, maybe prisoners, who pick out the stuff that can be recycled. So it doesn't make a difference whether I do it or not.

In condemnation of the condemners the individual also acknowledges responsibility for the behavior but argues that his or her behavior is immaterial because the behavior of others is much worse in comparison and goes unnoticed or unpunished. For example:

I don't know why I should have to worry about the emissions from my truck when it's the factories and big corporations who are the ones who are really responsible for the air pollution problem, but no one ever says anything about them.

In appeal to loyalties, the individual insists his or her behavior was not incorrect because it serves other more important interests. For example:

I understand that there are environmental issues associated with our way of life. We live in a very consumer oriented society. But consumerism is the engine that drives our economy. If we all stopped buying things our economy would grind to a halt, and so would life as we know it. We just need to come up with new ways of generating consumer goods that don't take as much of a toll on the environment. Capitalism works.

Another type of justification is the sad tale, in which individuals relate a particular set of unfortunate facts as an explanation for their current state. Several respondents used a sad tale in order to justify their lack of performance of environmentally friendly behavior:

I just consider what I can afford. I live in the lowest paid percentage of actually employed American citizens. I still have to pay rent, car insurance, electric, gas, food, health insurance. How can I consider anything else? If it costs the same I might consider the environment but I refuse to hurt myself doing something environmentally friendly. I try when I can but I don't always succeed. I don't try to buy environmentally sound products. I can't afford them, so I don't make that effort.

I would love to not drive so much and either ride a bike or walk. But my knees are really bad and some days I have asthma. We would buy a hybrid car if we had the money, but we exist on Social Security and must now use what little we have on medications, food, and utilities.

A final type of justification is that of self-fulfillment, and respondents gave plenty of examples of these:

I often have to choose between carpooling with my parents or driving myself. It would be more environmentally friendly to carpool, but way better for my mental health to drive myself and be able to leave if things get bad.

I don't take all the necessary steps to help the issues that I know about. For example, I drive a coupe, however it's a Ford Mustang, which means it is in no way gas efficient and does contribute to the ozone layer. But I love my car. I knew it wasn't good for the environment. To this day I question my choice when I read about the dependency on oil, and other factors relating to emissions and the environment. I knew getting the car was not the 'green-est' however I had my own idea of what I wanted regardless of how it impacted the world I live in. Maybe one day I'll invest in a more eco-friendly vehicle.

The requirement to provide an account depends on the situation and on one's social position relative to those who might question one's behavior. Beyond this, there are three strategies by which one may avoid offering an account, which Scott and Lyman (1968) refer to as meta-accounts: *mystification* (the actor cannot disclose the reasons for his or her behavior), *referral* (someone else is to be questioned), and *identity switching* (the actor shifts from one assumed role identity to another more situationally advantageous role identity). Each one of an individual's various identities is associated with a particular type of socially acceptable account specific to that identity. Scott and Lyman point out that "every account is a manifestation of the underlying negotiation of identities" (p. 59). The following response provides an excellent example of identity switching:

I am totally aware pollution is a problem. I'm aware it's bad for the ozone, it affects people with asthma...but I drive a huge SUV. Pollution is important to me, I'm all about the Hybrid cars that are better for the environment, that use less gas and put out less harmful emissions into the air...but I have small kids, and I just feel safer in a big huge SUV. It works for our family, I can haul my kids, and their friends, bikes, etc. Am I harming the environment by driving it? Probably. Will this make me immediately give up the luxury of my big huge SUV? Most likely not... I went from driving a Honda Civic to a Chevy Tahoe when I started having children. Is a Civic more environmentally friendly? Yes. Does it use less gas and put out fewer emissions? I'm sure of it. Do I feel as safe with my two kids in the back seat? Not so much. I feel like I was selfish in the purchase of my big huge SUV, but the luxury of safety won me over. I'm sure smaller cars have great ratings in crashes, but the 'bigness' that is my car can't compare to ratings, I just feel safe. I am sure I am more than hurting the environment by driving that monster of a vehicle, and when my kids are grown I am sure I will downsize to better accommodate. But for now, I choose safety for my children over the environment (when it comes to my personal vehicle).

This particular respondent reported very high scores for both pro-environmental orientation and environment identity. Yet as this passage clearly indicates, the parental identity had greater salience than the environment identity at that point in time and in the context of family transportation. Her response gives evidence of switching from the environment identity to the parental identity and possibly back to the environment identity in the future. So, the relationship between environment identity and pro-environmental behavior is contingent upon the position of the environment identity in the individual's identity hierarchy.

“SELVES” AND “OTHERS”

People tell stories about themselves to organize their own experience (Rosenwald and Ochberg 1992) and to “impose order on the universe” (LaRossa 1995:555). Stories are constructed and self-understanding occurs within culturally specific narrative frames (Shotter and Gergen 1989). So the stories that people tell reflect their culture; as Rosenwald and Ochberg

(1992) describe it, “the culture ‘speaks itself’ through each individual’s story” (p. 7). By examining the stories people tell about themselves and the environment we can better understand the influence experiences, role models, and environmentally significant events have on their performance of pro-environmental behavior. This relationship previously illustrated in Figure 6.1 is detailed in Figure 8.2 below.

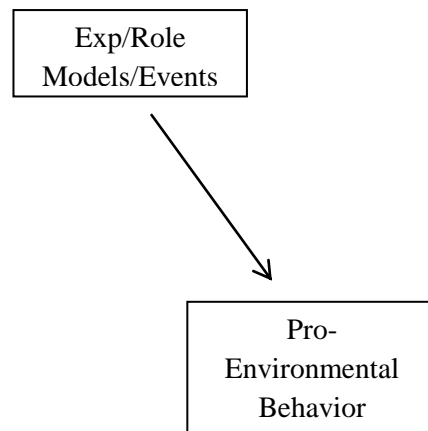


Figure 8.2 Detail of Figure 6.1 Factors Influencing Pro-Environmental Behavior

Through telling stories people portray themselves as similar to some (lumping) and different than others (splitting), thus establishing “islands of meaning generally known as ‘selves’ and ‘others’” (LaRossa 1995:555). Respondents answered the open-ended question, “Describe a situation where you had to make a decision that required a tradeoff between environmental impact and personal benefit, cost or inconvenience. Which factors influenced your decision?,” in narrative form; they told a story about themselves, their culture, and others. These stories took several forms: *blaming tales*, *conversion tales*, *sacrificial tales*, *morality tales*, and *identity tales*.

In blaming tales, respondents attributed the responsibility for environmental degradation to others. Anger, and sometimes resentment, seemed to simmer between the lines of these tales.

When I had my children several decades ago, disposable diapers had just come on the market. They were bad for the environment then and even worse now. They are not biodegradable and they are clogging up the landfills. I decided to raise all of my children on cloth diapers and they were healthier for it. It was so easy and all that is necessary is two dozen diapers. They last the duration of the diaper era ... with a onetime cost. And now I see disposable diapers strewn everywhere! I tell young mothers everywhere: carry a trash bag in your car trunk and dispose of your diapers there, then put them in the trash at home when you arrive. Or better yet, use cloth diapers! Using disposable diapers for 2 to 3 years per child is environmentally irresponsible and lazy parenting.

I think the existence of Hummers on the roads is absurd and I do not feel there is any reason that one must have a Hummer. There is no valid reason for anybody to drive such a large vehicle and waste so much energy. They use up so much gas and pollute the air. I would never drive such a thing – what are these people thinking? Many of them do not even have large enough families that would require these large vehicles to transport them, they probably just like the way it looks. They should be outlawed.

In conversion tales, discussed briefly in Chapter Seven, respondents spoke of previously engaging in environmentally harmful behavior and then described a significant experience or event which caused a shift in their perspective and their subsequent behavior:

I'll be honest here, I used to litter, dump liquids like old oil and gas on the ground and other things that I took part in that were horrible on the environment when I was younger and not as aware of all the damage I was causing. But then I started to hang around a different group of people who are all very eco-friendly and they played a great role in my turn around.

When I took Biology in high school, I did a project on landfills and the other ways that humans rid themselves of garbage. It opened my eyes to how much people were NOT doing, and how short the time span predicted was before certain places were overrun with waste. I will never forget what I learned. Now, I recycle whenever I drink from a plastic bottle or aluminum can. I reuse bags and bottles over and over instead of just throwing them away, and this is all because of that project! I would still be unaware of these issues and causing harm to the environment if it wasn't assigned to me back then.

I have always enjoyed the beauty of the earth, from a distance, and never gave a thought to how I treated it. But several years ago I took a science class at Arizona State University and it totally changed my way of thinking. I had never seen up close and personal the effects we are having on the earth and how we are hurting our environment. My professor became my role model, whether she knew it or not, I learned more in her class that I will take with me than all of my other teachers. This professor helped me to focus my feelings into actions and taught me how to be proactive. I now feel even more strongly about what I must do to help the planet. I take action where ever I can and try to limit my consumption and minimize waste and trash as much as possible.

Sacrificial tales were told by respondents who felt that because of the circumstances of their earlier lives, they knew what it meant to give up certain things for a greater cause, and that they were willing to do this, but it was others, especially younger people, who were unwilling to make such sacrifices:

I see deforestation happening before my very eyes every day. These money hungry developers cut down whole forests to build McMansions. Do people really need 5000 square foot homes? Do they really need fancy log cabin vacation homes? We have lived in the same small house all our married life and raised three children with two bathrooms! There is this mentality that everything has to be big and new with granite countertops... they just refuse to sacrifice their idea of luxury for the future of the human race.

During the oil crisis of the 1970s one night during dinner, I went around the table asking each of my children what they could give up in order to save energy. One said, 'well I guess I could stop using my hair dryer; but no, then I wouldn't be able to look nice at work.' Another said he might be able to ride his bike to work, but then, no that wouldn't work because then he would be all sweaty when he got there. This went on for all four children. None of them was willing to give anything up. They just have no idea of sacrifice, like we do. I remember rationing. We only had limited amounts of gas. And nylons. I remember one of my friends was so excited because she had found a pair of nylons (they were scarce during the war) but they were defective, they had seams at the front and the back. She wore them anyway because she was so proud about having found them. We were used to sacrifice, and were glad to do it; it made us appreciate what we had, but young people today, they just have no concept about what it means to give anything up.

Morality tales were also very popular, wherein respondents portrayed themselves as "doing the right thing":

I recently I had to get rid of some waste that was considered hazardous. Yes, I could have bagged it up and thrown it away in the big trash can at the end of my driveway, but this did not feel right. The right thing to do was look on Google and find the correct type of waste disposal property that takes hazardous waste and to do this right away. I had to do my research, buy specific containers, and then take the time and money to get there and deposit my waste. It was a pain in the butt, but made me feel really good to do the right thing.

One time I was asked to be part of a deforestation act. It was in order to create space for an addition to a house. Immediately, I started asking myself questions like, I wonder if they will replant several seedlings in order to replace the trees they are planning on cutting down. I also started to think about the oxygen that trees provide for sustainability, even though it is less than the ocean, it is still a source. My conscience told me not to do it, that you have to protect the environment, and this would go against those ideals. I also thought about the harmful emissions that were released from the chainsaws involved, and I thought that if I couldn't change their minds about this operation, then I would choose not to be a part of it at all.

In identity tales, respondents assert one of the many identities that they have claimed. In describing the behavior they chose in response to the situational dilemma, respondents compared the behavior required of their asserted identity to the behavior assumed to be associated with the environment identity. When the behavior associated with the two identities conflicted, the chosen behavior reflects the relative positions of both identities in the individual's salience hierarchy. When the behavior associated with the two identities did not conflict, it confirmed both identities and respondents characterized both identities as supportive of one another.

In this case, the behavior associated with the identity of family provider conflicted with the respondent's idea of the behavior associated with the environment identity and we see that the identity of family provider was more salient:

My current position is located 46 miles from home. I drive on average over 100 miles a day. The income that I derive from this particular project is substantial. I therefore had to make a decision- which was more important: finding a job closer to home and driving less which would be better in terms of the environment, or providing a better life for my family? Of course, I put my family first.

In this case, the behavior expected of the identity of sport fisherman did not correspond to that of the environment identity, and for this individual, the environment identity was more salient:

One day I caught a huge fish and they said it was legal for me to eat the fish, but that the species of fish that I caught was becoming extremely depleted. They said it was close to being extinct. I wanted to bring it home like a trophy, but I ended up releasing it back into the environment.

This respondent also indicated that the behavior associated with his identity as a smoker conflicted with that associated with the environment identity:

I am a smoker, and as a smoker there is that constant decision to make after smoking a cigarette: should I just throw the butt on the ground, put it out and put it in the trash, or, the most unlikely option, tear apart the butt so it becomes biodegradable. Smoking while driving is the perfect example, for it would be a personal benefit to throw the butt out the window and not have my car reek of smoke with the cigarette in the ash tray, but environmentally this causes excessive litter and potentially fires. The environmental impact of cigarettes is HUGE. For all the smokers that do decide to just throw their cigarettes on the ground, the amount of litter for that person in the long-run is drastically larger than that of your typical non-smoker. I have started to use my ash tray in my car and throw away all of my cigarette butts since I have thought about the long-term effects of habitually throwing a finished cigarette onto the ground.

For this respondent, the behavior associated with the identity of financially strapped student did not correspond to that of the environment identity, and the environment identity was less salient:

Well I can use my current living situation as a perfect example of how I had to make a tradeoff between an environmental impact and personal benefit. The house that I rent is over 100 years old and not very energy efficient which makes my carbon footprint much bigger than I would like it to be. But financially I could not beat the price, only paying \$400 a month for more than 2,000 square feet of space is a great deal considering how ridiculous most rental homes are. The power bill could be a little lower if more insulation were installed or if we had double pain [sic] windows instead of the ones that were put in 60 years ago. But it is a great house and works with my small income that I am able to have being a full time student without a job.

According to this respondent, the behavior associated with her identity as an animal lover corresponded very closely to the behavior she associated with the environment identity:

I think the most important environmental issues have to deal with animals and the shrinking of the natural landscapes in which they can roam. I am a very big animal lover and I have five myself. I am partial to any issues that involve animals. Also, we are all just animals ourselves and I believe they hold the key to determining health benefits for humans. It sometimes seems humans could learn a thing or two from them and I also just plain feel bad for them. How would you feel if someone was coming in and taking what you loved? I mean, weren't they on the land before us? I think that we should stop using up the environments and habitats they live in so fast.

This respondent was able to strike a compromise between the behavior associated with two different identities that were both important, musician and environment, and in the process adjusted her behavior so it corresponded with both:

I play the bass (the very large orchestral one) and most of the time I have to take it to concerts and other gigs that I do. That was a big factor that was influencing my decision in buying my last car. So I decided that I wanted a large vehicle like a Tahoe or something like it so I could easily fit my bass and other equipment in there. I ended up getting a small, but spacious car because when I realized how much stuff I would be putting into the air by driving that tank of a vehicle and I felt it was not right. Now with my smaller car it is a bit of a tight squeeze, but I manage to get everything in there without killing the environment at the same time.

There were several other examples of ways in which individuals set themselves off from others.

As foreigners:

Probably fifteen years ago I spent a week alone in Athens, Greece. I stayed in a northern suburb but spent most of five days taking the train to Athens itself and just exploring. Never have I seen such a litter-dirty city. I soon realized why. I walked up the Acropolis one day; it was hot and I bought a can of orange drink to sip as I climbed that high prominence. I had to carry it all the way to the top, all the way I wanted to walk around, all the way down – I don't recall how far it was, but it took an hour – before I could find a single trash can. No wonder people simply dropped their cans, bottles, film wrappers, gum and candy wrappers, newspapers, wherever they were!

As risk-takers:

The eco-friendly cars are a lot of money. More than the average person can buy, but some people put the cost of the vehicle aside and buy the vehicle in order to help the environment. Not to mention that they put their lives in danger because those cars are very tiny.

As polluters:

Those people that litter drive me crazy!!! I see people driving down the road and throwing plastic cups and cigarette butts out the window. This is down right ridiculous, lazy and horrible for the environment. The other part is that it would be simple to stop, JUST DON'T DO IT!

When I last bought a car, I chose a Toyota Camry because I could not afford a more expensive battery powered vehicle or a Hybrid but it was the economical choice that has great gas mileage so even though I chose the convenience of driving, I still felt that I was not harming our air as much as they guy with the souped up SUV.

THREE CULTURALLY SPECIFIC SOCIO-COGNITIVE SCHEMAS

Responses to the open ended questions corroborate the quantitative findings in Chapter Six; members of the three cultural groups differed from one another in terms of environmental orientation (or attitude), performance of pro-environmental behavior, and environment identity. Members of each cultural group used the six cognitive acts similarly in the construction of their environmental socio-cognitive schemas. These schemas differed considerably across the cultural groups in ways that closely parallel the group differences revealed by analyses of variance. (See Chapter Six.) Recall that members of the hierarchist culture had low levels of pro-environmental orientation, pro-environmental behavior, and environment identity; members of the individualist culture had moderate levels of pro-environmental orientation, pro-environmental behavior, and

environment identity; and members of the egalitarian culture had high levels of pro-environmental orientation, pro-environmental behavior, and environment identity.

Perceiving

Each culture can be categorized according to level and scope of environmental consciousness, with egalitarians having the highest levels of environmental consciousness, individualists having mid-range levels, and hierarchists having the lowest levels. For each cultural group, scope of environmental consciousness can be considered a verbal parallel of level of environmental organization. For example, the scope of environmental consciousness for hierarchists extended only to the lowest levels of environmental organization, that of the individual and sometimes the population. The scope of environmental consciousness for individualists encompassed not only the individual and the population, but the community as well. Egalitarians had the broadest scope of environmental consciousness, extending past the eco-system to the planet, or the biosphere as a whole. Egalitarians had a holistic perspective on the environment, viewing all elements of the environment (species and physical features) as interconnected and dependent on one another. Of the three groups, egalitarians were most likely to connect individual behavior to environmental issues and to consider environmental problems as interrelated. Egalitarians also tended to consider the wider impact of potential solutions to specific problems.

Focusing

Each culture can also be categorized in terms of level of anthropocentrism. Egalitarians were the least anthropocentric of the three groups. They believed that humans were no more important than other species and were especially concerned about the plight of animals. Individualists were somewhat more anthropocentric, while hierarchists tended to be quite

anthropocentric, as one hierarchist put it: “we need to worry about getting everything okay for ourselves before we try to worry about the animals.”

It was not surprising, given its importance to the theoretical model, to find that proximity, or the level at which respondents have been or expect to be affected by a particular environmental issue, varied according to culture. Egalitarians believed evidence of environmental destruction was ubiquitous, catastrophe was imminent, and natural resources were almost depleted. Many egalitarians saw themselves as having been already personally affected by environmental issues, and believed these issues presented an impending threat to all including the planet as a whole. Individualists perceived environmental risks as less threatening due to their views that the current level of environmental degradation was reversible, that new solutions would be found, and that there was still plenty of time before conditions became serious. Due to their low levels of environmental consciousness and limited scope of attention to environmental issues, hierarchists did not perceive themselves to be at risk of being impacted by environmental issues.

There was a lot of variation among respondents as to which specific environmental issues they considered important, but these variations were not specific to culture. What was culturally specific was the number of issues that respondents considered important; egalitarians frequently said “everything pertaining to the environment” or “all environmental issues” were important, while individualists on average mentioned two or three specific issues. Many hierarchists reported not thinking any environmental issues were important, while others reported that one or two specific issues were important. Of the few respondents who reported that they had never faced a situation requiring a tradeoff between environmental impact and personal benefit, cost or

inconvenience, most were hierarchists; they did not frame their actions in terms of any potential effect on the environment.

Signifying

The meaning of the environment varied among the three cultural groups. When discussing what the environment meant to them, egalitarians were more likely to imbue the environment with spiritual or ideological meaning; they believed in “nature and humans living in harmony.” Individualists thought of the environment as their home, or associated the environment with nature. Hierarchists were more likely to consider the environment in terms of resources for human use. Egalitarians were the most likely of the three groups to report having had environmentally significant experiences at various points throughout their lives.

In contrast, cultural meanings associated with symbols of the environment were very similar. The recycling symbol was the image most frequently reported by respondents as making them think of the environment. One respondent included this image in her response:



The image to the left also makes me think of the environment. It is the symbol for recycling. It makes me think of the environment because people recycle in hopes to preserve as many natural characteristics as possible; such as trees. It also helps to conserve energy within our environment, and basically gives us an opportunity to make our resources more valuable.

This image was cited so frequently as representative of the environment that it serves as a *synecdoche*, a figure of speech in which the part stands for the whole, or the thing itself, and vice versa, a whole stands for the part (Harris 2003). According to Burke ([1945] 1969), synecdoche expresses the “correspondence between what we call the act of perception and what we call the thing perceived” (p. 507). So, as a symbol that represents part of a greater whole, the recycling

logo also serves as an indicator of the condition of the environment as improving, due to the actions of people engaging in recycling behavior.

Classifying

Members of the different cultural groups varied dramatically in the way they constructed “islands of meaning” (Zerubavel 1997) relative to the environment. Although cultural groups differed predictably in their assessment of current and future environmental conditions, these assessments were either very positive or very negative, leaving a vast “excluded middle” (Zerubavel 1991) between the two. Egalitarians were alarmists, convinced that the planet was dying, on the brink of ecological disaster. They viewed the future as apocalyptic. Individualists were optimistic, acknowledging the existence of current environmental issues, but due to their faith in science and technology, they believed that future environmental conditions would be much improved. Hierarchists did not see current environmental conditions as problematic. Many could even be considered environmental skeptics (Jacques 2006, 2008; Jacques, Dunlap, and Freeman 2008), as they expressed the opinion that reports of environmental destruction were exaggerated or falsified for political reasons. As for future conditions, members of the hierarchist culture predicted they would either stay the same, or accepted the possibility that conditions would worsen.

Compared to members of the other two cultures, egalitarians listed many more types of behavior that they considered to be harmful to the environment as well as many more types of behavior that they considered to be pro-environmental. Not surprisingly, there was a lack of agreement among members of the cultural groups as to which behaviors were environmentally harmful. One particular “border dispute” (Zerubavel 1997:64) became clear as egalitarians consistently categorized driving an SUV as egregiously harmful behavior, while individualists

and hierarchists did not categorize driving an SUV as harmful. Individualists were most likely to believe environmental issues could be resolved, followed by egalitarians (if immediate action were taken). Hierarchists did not have much confidence in the resolvability of environmental issues.

Members of the various cultures had different opinions as to who was responsible for resolving current environmental issues. According to egalitarians, the solutions to environmental issues were the responsibility of everyone, regardless of fault or blame, all should contribute equally to healing the environment. Individualists believed that those who “caused the problem should bear the cost of fixing the problem.” In general, individualists did not feel personally responsible for creating the issues, and so did not feel it was their responsibility to improve them. Hierarchists strongly asserted that the government should take on the responsibility for solving environmental issues.

Remembering

Respondents communicated environmentally significant memories in two ways, by describing a large scale environmental disaster that occurred in the past (such as the Exxon Valdez oil spill or the chemical contamination at Love Canal), and by narratives describing in detail nature experiences that they shared with significant others. For example:

I remember hearing about Love Canal in the 1970s. People built their dream homes on a toxic waste site. There were numerous reports of birth defects and higher than normal incidences of cancers. How terrible it felt to find out that corporate and government officials knew there were problems with the hazardous chemical waste but decided that the risks to humans (especially children!) were acceptable.

When I was young we spent whole summers with my grandparents along the Outer Banks of North Carolina. We would spend all day and most of the evening outdoors just exploring and learning about nature. My grandfather patiently taught us about many tiny creatures and how they were all so dependent upon on another. I can remember the smell of the salt air and the wind whipping my hair as we went for long walks with my grandmother and she would tell us stories about those who came before us.

Compared to members of other cultural groups, egalitarians were more likely to provide the narrative type of memory and to connect those memorable experiences to their current attitudes toward the environment. As one egalitarian explained:

One of the reasons I care so much about nature and protecting the environment is because of spending time with my mother's sister and her husband who had a weekend cottage on a small island in Maine, Gotts Island. This was probably fifty years ago. We would get to the island by boat and would have to walk or bike everywhere once there. The water was icy cold and crystal clear. We ate fresh caught lobster. It was all very simple and pristine. I remember it like it was yesterday.

Timing

Respondents' thinking about the environment differed regarding the dimension of time as well. Egalitarians experienced a heightened sense of time regarding environmental issues, considering them to be highly urgent, whereas individualists and hierarchists both felt there was plenty of time to "do what needs to be done." When considering the length of time required to resolve environmental issues, the time frames given by egalitarians were quite specific, such as "if everyone works together, we should see measurable improvements within five years," compared to the time frames more frequently given by hierarchists and individualists, such as "soon" and "within our lifetime." Egalitarians were the most likely to be aware of how environmental conditions have changed over time.

Members of the three cultural groups think differently about the environment, as these culturally specific environmental socio-cognitive schemas demonstrate. These culturally specific schemas explain the cultural differences revealed by the analyses of variance performed on the quantitative data as explained in Chapter Six. Clearly, members of the egalitarian cultural group are more likely to engage in pro-environmental behavior than members of the other two cultural groups. However, egalitarians only represent about 20 percent of the population.

OTHER DIFFERENCES AND SIMILARITIES

Respondents discussed solutions to environmental issues at two levels: general and particular. At the general level, egalitarians reported that solutions to environmental issues should be derived by consensus, and then carried out by everyone, working together in concerted pro-environmental action. Egalitarians called for fundamental changes in society and human behavior, especially the reduction of the consumption of earth's limited resources. According to individualists, solutions to environmental issues would come from technical innovations driven by the free market economy. Individualists believed that people are creative when it comes to problem-solving and should be rewarded, not confined by excessive rules and prohibitions. Individualists also believed that people would act to protect the environment as long as doing so did not infringe on their individual freedoms. Individualists favored economic incentives as a means of encouraging the performance of pro-environmental behavior. Although hierarchists did not see environmental conditions as in need of urgent attention, they believed solutions should be mandated by government through strict laws and regulations and that environmental issues could be controlled by government legislation based on knowledge supplied by experts in the field of environmental science.

Responses to the environment/personal tradeoff dilemma provided some insight into how members of the various cultural groups thought about solutions to environmental problems. Egalitarians' heightened environmental awareness led them to view more situations as impacting the environment; they were much more likely to make the choice that favored the environment, even if they incurred a personal cost. Individualists acknowledged the dilemma between the two choices, but in the end, most made their choice based on economics or other perceived personal benefit. Hierarchists were less likely to perceive their behavior as affecting the environment or to notice that they were in effect, making choices about the environment as they engaged in their everyday behavior. In general, hierarchists' pro-environmental behavior was driven by rules, regulations, or the avoidance of sanctions. When they did acknowledge a dilemma, they were reluctant to make what they considered to be a personal sacrifice.

THE SYMBOLIC IMPORTANCE OF RECYCLING

Respondents used the term *recycling* to describe their acts of placing used aluminum cans, glass, plastic and paper in those receptacles appropriately designated for recyclables. The use of the term *recycling* to refer to this behavior serves as yet another synecdochal use of recycling. Refer back to the recycling logo on page 146. This symbol was created in 1970 by Gary Dean Anderson as the winning entry in an Earth Day contest sponsored by Container Corporation of America (Everson and Freytag 2001). The symbol more accurately refers to the "Reduce Reuse Recycle" Hierarchy, a plan of action for reducing waste and conserving natural resources. The first arrow represents the first stage of recycling, the collection and sorting of recyclable materials; the second arrow represents the second stage of recycling, processing the recyclable materials into new raw materials and manufacturing new products from them; the third arrow represents the third and final stage of the process, the sale and purchase of the new

products created from the recycled materials. The closed loop means that all three stages are necessary for the sustainability of the recycling process; consumers must purchase recycled products to ensure that recycling remains economically viable. This is another example of the synecdochal use of recycling; the first stage of recycling, the placing of recyclables in their appropriate bins, represents the whole recycling process.

As mentioned several times previously, the environmentally friendly behavior that most respondents engaged in was that of recycling. This was true of respondents in all cultural groups. Most considered their recycling behavior to have a significant impact on the environment: “I always recycle because not only is it easy to do it can make a huge difference even if done by one person”; “recycling is the one thing that can help save our environment.” The singling out of this small, relatively simple behavior, and the commitment to performing it religiously, appear to give recycling a value much greater than the actual impact it has on the environment. Perhaps individuals figure the performance of environmentally friendly behavior in one area compensates for the lack of performance of environmentally friendly behavior in other areas (Martensson and Pettersson 2003), much like Walker’s (2008) research that suggests “doing good in one area of life provided a rationale to worry less about such things in another” (p. 222). In other words, people do something simple and painless and think that lets them off the hook for performing anything substantial, as one respondent put it: “yeah, I drive an SUV, but I recycle.” This is yet a third example of the synecdochal use of recycling; the act of recycling stands for the whole of environmentalism.

Since respondents viewed recycling synecdochally, those who recycled could conceive of themselves as performing a significant amount of pro-environmental behavior. At the abstract level then, the performance of recycling explains away the environmental attitude-behavior gap.

Respondents' recycling behavior was an indicator of pro-environmental behavior in general; therefore, their behavior when measured by the Dunlap and Scarce (1991) intention-based behavior scale corresponded to their high scores on measures of environmental orientation and environment identity. However, when specifically asked to discuss their performance of pro-environmental behavior at the situational level respondents offered numerous accounts and excuses (Scott and Lyman 1968), as a way of minimizing the cognitive dissonance (Festinger 1957) between their professed pro-environmental attitudes and environment identity, and their lack of corresponding pro-environmental behavior.

In order to thoroughly examine the correlation between environmental attitudes and environmental behavior, we must be clear about what we are measuring. In this study, the relationship between environmental attitudes and pro-environmental behavior differed dramatically when behavior was measured using an intention-based scale (which measures behavior at the abstract level), compared to participant reports of actual behavior at the situational, or concrete, level.

CHAPTER NINE

CONCLUSION AND IMPLICATIONS

Using quantitative and qualitative data from a nationally representative sample of 400 individuals, I conducted a study to examine the attitudes, values, and beliefs, or orientations, that Americans profess to hold relative to the environment and the environmentally significant behaviors that they actually perform. Currently, there appears to be almost universal support for environmentalism, but a lack of corresponding individual or collective behavior. Many studies have documented this gap between environmental attitudes and behavior (Carrigan and Attala 2001; Finger 1994; Macnaghten 2003; Newholm 2005; Norgaard 2006; O’Riordan 1995) but so far none has successfully identified the reasons for it. I applied the principles of *grid-group cultural theory*, *cognitive sociology* and *identity theory* to examine the meanings people ascribe to the natural environment, factors that influence their performance of environmentally significant behavior, and their explanations and justifications for their behavior.

Results from the quantitative part of the study show how participants position themselves in relation to the environment at an abstract level, as evidenced by their scores on widely accepted scales measuring pro-environmental orientation, environment identity, and pro-environmental behavior. Quantitative analyses also provided varying levels of support for the 10 hypotheses presented in Chapter Three. Results from the qualitative part of the study provide insight into the culturally specific thought processes that lead to the performance, or lack of performance, of environmentally significant behavior. Results from the qualitative part also reveal how respondents’ performance of environmentally significant behavior is influenced by the situational context and is moderated by the effort required to perform pro-environmental behavior, its perceived efficaciousness, and barriers to its performance.

RESEARCH FINDINGS

Descriptive Analysis

In general, respondents' scores on the measure of pro-environmental orientation were relatively low compared to those of participants from other recent studies, (Cordano, Welcomer, and Sherer 2003; LaLonde and Jackson 2002; Rauwald and Moore 2002). This was surprising as survey data were collected during July, 2010, amidst continuous news coverage of the BP Oil Spill in the Gulf of Mexico.

In contrast, respondents' scores on the measure of environment identity and the Dunlap and Scarce scale of pro-environmental behavior were high, and were consistent with other studies (Hunter, Hatch, and Johnson 2004; Stets and Biga 2003). However, according to the alternative measure of pro-environmental behavior derived by summing the responses to the open-ended question: "Which environmentally friendly behaviors do you perform on a regular basis?," close to 10 percent of respondents reported not performing any pro-environmental behavior; almost one third reported performing a single pro-environmental behavior; and less than one fourth reported performing two types of pro-environmental behavior. The most frequently performed pro-environmental behavior was recycling; 63 percent of respondents reported recycling on a regular basis.

Less than 55 percent of respondents disagreed with the survey statement: "The so-called ecological crisis facing humankind has been greatly exaggerated." This finding corresponds to research documenting decreasing confidence in the veracity of evidence of the existence of environmental deterioration in both the United States and in Britain (Leiserowitz, Maibach, and Roser-Renouf 2010; Spence, Venables, Pidgeon, Pootinga, and Demski 2010). Agreement that the ecological crisis has been exaggerated could be attributed to *environmental skepticism*, a conservative ideological movement that repudiates mainstream environmental claims and

supports contemporary conservative values and issues, with the goal of forestalling environmental policy-making and regulation (Jacques 2006, 2008; Jacques, Dunlap, and Freeman 2008).

Respondents were distributed into the four cultural groups as such: hierarchist (43.5 percent); individualist (34.1 percent); egalitarian (21.4 percent); and fatalist (1 percent). Because there were so few respondents who were categorized as fatalists, they were necessarily eliminated from the sample for the analysis of group variances.

Quantitative Analyses

The following significant relationships were identified and appear in the revised heuristic model previously illustrated in Figure 6.1:

1. Higher levels of environment identity and pro-environmental behavior scale correspond to higher levels of pro-environmental orientation.
2. Higher levels of environment identity and pro-environmental orientation correspond to higher levels of pro-environmental behavior scale.
3. Respondents who belonged to an environmental group had higher levels of pro-environmental behavior scale than non-members.
4. Higher levels of influence of experiences/role models/events correspond to higher levels of pro environmental behavior scale and pro-environmental behavior text.
5. Older respondents performed more pro-environmental behaviors than younger respondents.
6. Women performed more pro-environmental behaviors than men.
7. Older respondents had higher levels of environment identity than younger respondents.

I used multiple regression analyses to test Hypotheses One through Seven. Hypothesis One was supported: pro-environmental behavior, as measured by the Dunlap and Scarce scale, was positively related to pro-environmental orientation. Hypothesis Two was not supported: women were not more likely than men to report pro-environmental orientation. Support for Hypothesis Three was mixed: women were not more likely than men to report pro-environmental behavior when the variable was measured by the Dunlap and Scarce environmental behavior scale. But when the alternative measure of pro-environmental behavior was used women were more likely to report pro-environmental behavior. Hypothesis Four was not supported: women did not report higher levels of environment identity than men. Hypothesis Five was also not supported: the influence of experiences/role models/events did not appear to predict environment identity. Hypothesis Six was supported: environment identity positively influences pro-environmental orientation. Support for Hypothesis Seven was mixed: environment identity positively influences pro-environmental behavior when the variable was measured by the Dunlap and Scarce environmental behavior scale, but not when the alternative measure of pro-environmental behavior was used.

Support for the hypotheses examining relationships between pro-environmental behavior and other variables was mixed, according to which behavioral variable was used: *pro-environmental behavior scale* or *pro-environmental behavior text*. I believe that the variable *pro-environmental behavior text* represents the concept of the performance of pro-environmental behavior at a concrete level whereas the variable *pro-environmental scale* represents the concept of the performance of pro-environmental behavior at an abstract level. What the pro-environmental scale variable fails to capture is the gap between intention and action, or the cost of action, in terms of time, money, or effort. This cost of action is what prevents action from

being taken, regardless of intent. In order to more fully understand the relationship between pro-environmental orientation and pro-environmental behavior, a more accurate measure of pro-environmental behavior is needed, such as an index with several indicators of actual performance of pro-environmental behavior each reflecting varying degrees of cost.

I used one-way between groups analysis of variance (ANOVA) to test Hypotheses Eight through Ten. Hypotheses Eight and Nine stated respectively that individualists would report very low levels of pro-environmental orientation and behavior, hierarchists would report moderate levels of pro-environmental orientation and behavior, and egalitarians would report high levels of pro-environmental orientation and behavior. Support for Hypotheses Eight and Nine was mixed in parallel fashion: egalitarians reported high levels of pro-environmental orientation and behavior, individualists reported moderate levels of pro-environmental orientation and behavior, and hierarchists reported low levels of pro-environmental orientation and behavior. Hypothesis Ten was supported: egalitarians reported higher levels of environment identity than hierarchists or individualists. In other words : 1) egalitarians reported high levels of pro-environmental orientation, environment identity and pro-environmental behavior, 2) individualists reported moderate levels of pro-environmental orientation, environment identity and pro-environmental behavior, 3) hierarchists reported low levels of pro-environmental orientation, environment identity and pro-environmental behavior.

The results of the quantitative analyses illustrate some of the factors that influence environmental attitudes and behavior. Pro-environmental behavior is influenced by membership in an environmental group, influence of experiences/role models/events, age, and gender. These results also indicate many reciprocal relationships: environment identity and pro-environmental behavior, environment identity and pro-environmental orientation, pro-environmental orientation

and pro-environmental behavior; culture and pro-environmental behavior; and culture and pro-environmental orientation. The reciprocal nature of these relationships illustrates the interdependence of culture, pro-environmental behavior, and pro-environmental orientation.

Individual's attitudes toward the environment and their behavior reflect and reinforce their commitment to their cultural way of life because holding those attitudes corresponds with and advances those ways of life. Egalitarians view environmental degradation as a serious consequence of unregulated commerce and industry which they also believe generates and legitimizes inequality. Individualists do not view environmental issues as very important because doing so would lead to restrictions on commerce and industry – forms of behavior crucial to their cultural way of life. Hierarchists view claims of environmental degradation as indictments of the competence and authority of societal elites; remedies would upset the status quo supportive of traditional social roles. The relationship between pro-environmental attitudes and pro-environmental behavior is reciprocal and reinforcing. People are motivated to persist in their culturally driven attitudes and behaviors through a process in which, for example, attitudes at Time 1 influence behavior at Time 2, and behavior at Time 2 influences attitudes at Time 3 in an ongoing reciprocal process that causes these attitudes and behaviors to become increasingly entrenched.

Qualitative Analysis

By applying GTM to the textual data generated by the open-ended survey questions I created an *environmental socio-cognitive schema* which represents the ways in which respondents used the six cognitive acts (*perceiving, focusing, classifying, signifying, remembering, and timing*) to organize their thinking about the environment. Respondents used *environmental socio-cognitive schemas* to filter and interpret environmental knowledge, assess

the significance of the environment as a social problem, guide environmentally significant behavior, and justify and explain their behavior. I also developed a model of environmentally significant behavior. The variable *proximity of environmental issues* is central to the model of environmentally significant behavior. Proximity of environmental issues, an element of the environmental socio-cognitive schema, strongly influences the performance, or lack of performance, of pro-environmental behavior.

The model of environmentally significant behavior illustrates the ways in which individuals' environmental socio-cognitive schemas influence their performance of pro-environmental behavior. The model includes the contextual variables, *volume of environmental discourse* and *level of conflict surrounding environmental discourse*, and the two feelings variables, *types of feelings* and *intensity of feelings*, which are both causal and consequential. The relationships between feelings and the performance of pro-environmental behavior are reciprocal; individuals feel good as a result of engaging in environmentally friendly behavior and these positive feelings reinforce the performance of such behavior. While individuals' environmental socio-cognitive schemas influenced their performance of pro-environmental behavior, this influence was moderated by three variables, *level of effort required of pro-environmental behavior*, *level of efficacy of pro-environmental behavior*, and *barriers to the performance of pro-environmental behavior*. These variables function as contingency variables, facilitating or constraining the performance of environmental behavior. Respondents were more likely to engage in pro-environmental behavior if the effort required was low. Respondents were also more likely to perform pro-environmental behavior if they believed their action would have a significant impact. And as previously discussed, respondents experienced numerous barriers to performing pro-environmental behavior.

Respondents used many types of linguistic devices to illustrate how they think about performing or not performing pro-environmental behavior. Those who did perform environmentally friendly behavior often invoked an ancillary motive for doing so, most frequently that of saving money. Those who did not perform environmentally friendly behavior offered explanatory accounts, both excuses and justifications. The most frequently cited type of excuse was defeasibility; respondents did not have the requisite information or knowledge needed to perform the behavior. The most commonly reported type of justification was self-fulfillment; respondents just want to do what they want! A frequent strategy respondents used to avoid giving an account was identity-switching; it appears that the parent identity trumps the environment identity, at least for some. People told various types of stories, including blaming tales, conversion tales, sacrificial tales, morality tales, and identity tales in order to set themselves apart from “others.”

Respondents had different beliefs as to who should bear the responsibility for resolving environmental issues. Some believed the responsibility should be borne by individuals or groups of individuals, while others believed it was the government’s responsibility. Some believed multi-national corporations should bear some responsibility because they were guilty of pollution and depletion of natural resources. For the most part, respondents offered little in the way of actual solutions, mainly suggesting small-scale actions such as making household recycling more accessible and less expensive. Only a few respondents addressed consumption.

A number of respondents expressed the idea that increasing awareness of the existence of environmental problems was a first step in solving them. Some also believed that agreement among individuals was a prerequisite to solving environmental issues, but acknowledged that obtaining a consensus on appropriate solutions was unlikely to occur. Respondents utilized three

types of solution rhetoric in presenting their ideas for the resolution of environmental issues (Myerson and Rydin 1996). Some respondents used the dialectic of catastrophe rhetoric in which they stated that conditions were so bad that a solution must be near at hand. Others used the feasibility possibility rhetoric, describing a thoughtful and deliberate process of arriving at a solution. And some respondents used overcoming the polarity rhetoric in which they constructed a polarity between two opposing solutions, and then arrived at some compromise between the two.

Respondents' environmental socio-cognitive schemas differed according to their cultural group. The environment, for egalitarians, had spiritual or ideological significance. Members of the egalitarian culture generally had a low level of anthropocentrism, a holistic perspective, a highly developed sense of environmental consciousness, and viewed environmental conditions as dire and getting worse. Egalitarians believed that they have been or will be personally affected by environmental issues and that all environmental issues are important. According to egalitarians, everyone is responsible for coming together to solve environmental problems, but they had little confidence that this will occur. For individualists, the environment represented home or nature. They had a moderate level of anthropocentrism and were relatively environmentally conscious. Individualists acknowledged the existence of environmental issues, but did not perceive themselves to be at risk because they believed scientific and technological solutions would soon be forthcoming. Individualists supported free market solutions to environmental issues and asserted that those responsible for environmental issues should pay for their solution. For hierarchists, the environment was synonymous with natural resources. Hierarchists were very anthropocentric, were not very environmentally conscious, and did not perceive themselves to be at risk of being affected by environmental issues. They did not view

environmental conditions as problematic, often considering reports of environmental degradation to be exaggerated. Members of the hierarchist culture believed that government should take control when it comes to the environment by implementing strict rules and regulations applicable to everyone. Finally, members of the egalitarian cultural group were more likely to engage in pro-environmental behavior than members of the other two cultural groups. Unfortunately, egalitarians only make up about 20 percent of the population.

There were a few interesting similarities among members of the different cultural groups. Visual images, both historical and contemporary, made quite an impact on respondents. In addition to the most frequently cited and previously discussed image of the recycling logo, respondents recalled several media campaigns. Many respondents described in vivid detail the “crying Indian commercial.” This was an anti-litter public service announcement launched on Earth Day in 1971 by the environmental organization Keep America Beautiful. It featured a Native American paddling a canoe down a polluted waterway, his distress evident by the single tear rolling down his weathered cheek. The announcer intoned: “some people have a deep abiding respect for the natural beauty that once was this country and some people don’t” (Keep America Beautiful, Inc. 1971). Many others described the poignant commercial for the Nissan Leaf™ electric car in which a polar bear travels across the country from his melting arctic home to the Leaf™ buyer’s driveway to deliver a literal bearhug, presumably in gratitude for the consumer’s actions in saving the polar bear’s habitat; the tagline being “innovation for the planet, innovation for all” (Nissan USA 2010). Another frequently described image was the commercial for Brita® water filters which showed crumpled water bottles stretched end to end across waterways, beaches, fields and urban streets representing the more than 39 billion plastic bottles Americans consume annually, enough to encircle the earth more than 190 times.

According to the ad each filter could take the place of 300 bottles; “a small step that can make a big difference” (BRITA 2010). These are very dramatic and emotion evoking images that attempt to visually differentiate environmentally responsible “selves” from environmentally irresponsible “others.”

Another similarity among respondents of all three cultures was the widespread support for and performance of individual recycling and respondents’ overestimation of its efficacy in environmental problem-solving. Most respondents were convinced that their individual recycling behavior was making a “huge difference” and that they were doing their “part in saving the environment.” According to the Container Recycling Institute, a nonprofit organization that studies the recycling of beverage containers in the United States, as of 2009 the recycling rate for aluminum cans was 45 percent, and 23.5 percent for plastic PET bottles, rates which are considerably lower than those for 1992: 65 percent and 37.3 percent respectively (Container Recycling Institute 2010). But those numbers lose their significance when one focuses on the fact that municipal waste, that generated by individuals, accounts for only 1.5 percent of all solid waste; the remaining 98.5 percent is industrial waste (U. S. Environmental Protection Agency 2009).

Another similarity among cultural groups was the virtual lack of engagement in any sort of political or collective action. Although 9.2 percent of respondents indicated they were members of an environmental group in the demographic section of the survey, there was no mention of belonging to or participating in any environmental organizations in the textual responses. In answer to the open-ended question asking about their engagement in environmentally friendly behavior respondents offered more than 40 different examples of such behaviors and every single one of them took place at the individual level. Szasz (2007) refers to

this as an “individualized response to collective threat” (p. 3). Recycling or any other voluntarily, individually performed action is an “asocial, apolitical from of environmental response that forecloses the apparent need for dealing with” environmental problems at a more systemic level (Liboiron 2009:5). With so many people thinking that they have “done their part to save the environment” there is scant impetus for communal activism in support of environmental reform at the systemic level.

Recycling was used as a *synecdoche*, a figure of speech in which the part stands for the whole, or the thing itself, and vice versa, a whole stands for the part (Harris 2003) in three different ways. First, for many respondents the recycling logo represented the environment as a whole, serving as sign that environmental conditions were improving due to the recycling behavior of many individuals. Secondly, respondents used the term recycling to describe placing used cans, glass, plastic and paper in recycling receptacles, the first of three stages of the recycling process. The use of the term recycling in this manner is yet another synecdoche, the placing of recyclables in their appropriate bins (the first stage), represents the whole recycling process. Finally, the environmentally friendly behavior that most respondents engaged in was recycling which they believed had a significant positive environmental impact; and so the act of recycling stands for the whole of pro-environmental behavior.

THE ENVIRONMENTAL ATTITUDE-BEHAVIOR GAP

As discussed in Chapter Three, prior research on environmental attitudes and behavior has been descriptive, and mostly quantitative. In contrast, the focus of this study was explanatory, and utilized both quantitative and qualitative methods. The substantive goal of this study was to explain the gap between pro-environmental attitudes and the lack of corresponding pro-environmental behavior. This study shows that the gap between expressing pro-

environmental attitudes and performing pro-environmental behavior can largely be explained by the concept of proximity; the distance participants perceive themselves to be from environmental issues. This distance can also be conceptualized as the extent to which individuals have been or expect to be personally affected by environmental issues. Individuals locate themselves and others at varying degrees of proximity in relation to environmental issues. Individuals who perceive themselves to be removed from environmental issues are much less likely to engage in pro-environmental behavior than those who perceive environmental issues to be close at hand. This concept of proximity allows us to see that the environmental attitude-behavior gap entails thinking about behavior at two levels: at the abstract level (i.e., thinking about pro-environmental behavior in general), and at the situational level (i.e., performing a specific pro-environmental behavior under particular conditions). Pro-environmental attitudes and behavior that corresponds to those attitudes are abstractions while the performance of actual environmentally significant behavior is situational.

The concept of proximity of environmental issues is central to the model of environmentally significant behavior because it is an indication of perspective; what is seen and what is not seen. Individuals who have relegated environmental issues to the furthest reaches of their mental horizons do not think about environmental issues, much less consider their potential consequences or possible solutions. Consider the well-worn cliché: “out of sight, out of mind.”

This study also calls attention to an important issue in research on environmental attitudes and behavior: measurement. As shown by the quantitative results in Chapter Five, relationships between environmental attitudes and pro-environmental behavior differed significantly depending on whether pro-environmental behavior was measured using an intention-based scale (which measures behavior at the abstract level), or using a measure

constructed from participant reports of actual behavior at the situational level. The mixed results from the tests of hypotheses call us to question whether these orientation, identity, and behavior scales really measure what they purport to. What is missing is an understanding of the gap between intention and action, or the cost of action, in terms of time, money, or effort. In order to more fully understand the relationship between pro-environmental orientation and pro-environmental behavior, a more valid measure of pro-environmental behavior is needed.

LIMITATIONS

The data for this project were collected during the summer of 2010 amidst continuous news coverage of the BP Oil Spill in the Gulf of Mexico. I anticipated that this news coverage would heighten respondents' sensitivity to environmental issues. But after thoroughly immersing myself in the textual data, I do not believe this to be the case; only 33 respondents (8.25 percent) specifically referred to the BP Oil Spill.

I chose the on-line survey method of data collection because I wanted to examine a large, nationally representative sample of consumers. As mentioned previously, the level of educational attainment of the participants in this study was higher than that of the general population, thus making the sample not truly representative. I attempted to structure the open ended questions in such a way that would allow me to examine in detail how respondents think about the environment. However, with this method I was limited to the answers that respondents provided; I could not probe any further. I believe the responses were sufficient for the purposes of this study.

Other methods of research might provide additional insights into the relationship between environmental attitudes and environmentally significant behavior. A longitudinal study could illuminate the relationships between age and both environmental identity and pro-environmental

orientation. At what point does age become a factor? A longitudinal study also could shed light on the stability of the relationships between culture, pro-environmental behavior, and pro-environmental orientation. This study was undertaken during a time of heightened environmental discourse; it would be interesting to see if and how the results might differ a year after the BP Oil Spill. Grid group cultural theory predicts that members of different cultures will organize themselves into opposing factions relative to various social issues (Thompson, Ellis, and Wildavsky 1990). Research using focus groups could investigate the processes through which members of the different groups differentiate themselves from one another, and could also illustrate how individuals interpret and accept or reject factual information regarding environmental issues. Could there be a way of framing factual information that could increase its credibility among all cultural groups? And of course, extended interviews could increase our understanding of the meanings the environment holds for individuals.

THEORETICAL IMPLICATIONS

The findings from this study may be applicable to attitude-behavior gaps in general. The concept of proximity as a space, or an expanse, between thinking about behavior in the abstract and thinking about behavior in an immediate situation may be useful for explaining attitude-behavior gaps in general, as illustrated by LaRossa and LaRossa's (1981) investigation into the disconnect between egalitarian parenting attitudes and egalitarian parenting behavior. These researchers also found a considerable distance between behavior at the abstract level (i.e., thinking about egalitarian parenting behavior in general), and behavior at the situational level (i.e., actually performing egalitarian parenting once the baby has arrived). I believe the concept of proximity may be useful in examining other attitude-behavior gaps in terms of bridging the distance between abstract attitudes and situational behavior.

Previous research applying grid group cultural theory to environmental attitudes and behavior have been undertaken with large samples outside the United States, (Dake and Thompson 1999; Martensson and Pettersson 2003) and one small sample in the Pacific Northwest (Ellis and Thompson 1997). This study found that individuals do indeed fall into distinct cultural groups, each with their own culturally specific orientation to nature and propensity for environmentally significant behavior. The findings from this study provide further support for grid group cultural theory and its potential generalizability to broader populations.

The findings from this study support cognitive sociology's premise that different cultures, or "thought communities," have different cognitive traditions. Members of three different cultures (individualists, hierarchists, and egalitarians) used the six cognitive acts in culturally specific ways in their thinking about the environment. Additionally, this study illustrated not only how the six cognitive acts are shaped by culture, but how they function interactively, supporting and reinforcing one another, as the environmental socio-cognitive schema illustrates.

Previous research in identity theory has so far not addressed the salience of the environment identity when other identities are simultaneously invoked. By asking respondents to describe a situation requiring a tradeoff between environmental impact and personal benefit, cost or convenience, I was able to examine the relative positioning of competing identities within individuals' salience hierarchy. This study showed that for the most part, the environment identity has low salience relative to other competing identities.

This study has shown how grid group cultural theory, cognitive sociology, and identity theory together can be useful for explaining the relationship between pro-environmental attitudes and behavior. The next step in connecting these sociological theories could be to deconstruct cultural conflicts into the underlying meanings that the conflict holds for each of the conflicting

cultural groups. In other words, what are people really arguing about when they disagree over affirmative action, the death penalty, education reform? They are not arguing about, for example, whether the death penalty reduces homicide rates - it does not – (see Radelet and Lacock 2009), but rather they are arguing about inequality in the criminal justice system, or social stratification and disrespect for authority, or the unfettered freedom of individuals to pursue their economic interests. By ascertaining the meanings behind these cultural conflicts, it may be possible for society to overcome the barriers to social change by framing these conflicts in a myriad of meanings that might better correspond to the shared identities of members of the different cultural groups.

POLICY IMPLICATIONS

This study revealed four possible methods of bridging the distance between the situational and the abstract in order to increase individuals' engagement in pro-environmental behavior: 1) graphic public service announcements, 2) increasing the salience of the environment identity, 3) environmental education, and 4) segmented strategies. One very effective method of increasing engagement in pro-environmental behavior would be to utilize public service announcements (PSAs) to increase individuals' perceptions of their proximity to environmental issues by demonstrating that these issues significantly impact them and their families now as well as in the near future. These PSAs should include the use of graphic visual images, both positive and negative. The images of birds harmed by plastic beverage container rings, the "crying Indian," and "the garbage dump under the sea" made a durable impression on respondents and influenced their thinking and behavior regarding littering. The image of the grateful polar bear inspired several respondents to look into alternatives to gasoline powered vehicles.

Another method of increasing individuals' engagement in pro-environmental behavior would be to increase the salience of the environment identity across a broad range of situations. This could be achieved by increasing the perceived correspondence between behavior associated with the environment identity and that associated with other identities. For example, one effective strategy suggested by this study would be to couple the parent identity with the environment identity, by demonstrating how pro-environmental behavior is also good parenting behavior. According to Burke (2003) identities that frequently "co-occur" will have comparable levels of commitment and salience. Another means of increasing the salience of the environment identity is by increasing commitment to the identity; identity commitment is based on the number and strength of ties to others based on that identity (Stryker 1968, 1980). The more relationships one has with others based on a particular identity the greater the chances of that identity being invoked (Callero 1985; Stryker 1968, 1980). So, another strategy for increasing the salience of the environment identity would be to encourage individuals to join an environmental or conservation group. Stryker (2004) has found that positive affect increases identity commitment and salience. Many study participants described feeling good about performing pro-environmental behavior; capitalizing on these positive emotions by calling attention to them could lead to increased commitment to and salience of the environment identity. Finally, Forehand, Deshpande, and Reed (2002) suggest that the use of priming cues to direct attention to an identity may increase the salience of the identity. Environmentally significant images could be utilized to provide contextual cues evoking the environment identity in particular situations.

Several respondents were significantly influenced in their youth by science teachers and their experiences in environmental science classes. An effective way of increasing individuals'

awareness of the environment and their understanding of environmental issues would be to require students in middle school, high school and college to take an environmental science class. This information would be more likely to be perceived as objective and trustworthy when delivered by teachers and professors and receiving this information at a relatively young age would encourage the development long lasting pro-environmental behavioral habits.

An additional method of increasing pro-environmental behavior would be to adopt a strategy of “multiple choice success stories” (Walker 2008). We have seen that the environmental socio-cognitive schemas for each cultural group were not just different from one another, but frequently conflict with one another: egalitarians perceive environmental issues as grave and in need of immediate collective attention; individualists acknowledge the existence of environmental threats but believe they will be neutralized in time by the “invisible hand” of the free market system; environmental issues remain an abstraction for hierarchists. There seems to be little likelihood of alliance among members of the three cultural groups in solving environmental problems. According to Walker (2008) it does not matter if the rationales of different consumer groups are dissimilar; “if you want to sell something, ethical or otherwise, you must appeal to people’s self-interest, not to their mercy” (p. 229).

This concept is equally applicable to the three cultural groups, who each have their own environmental vocabularies of motive. This method of increasing pro-environmental behavior would involve segmented strategies for each cultural group. Since egalitarians value consensus and communality, they could be encouraged to join local environmental groups to work together in solving local problems; their success in the local arena may spur them on to larger scale activism. Individualists believe in the power of the free market system and do not want to be confined by rules and regulations. By appealing to the individualists’ entrepreneurial spirit they

can be motivated by grants or other financial incentives to develop innovative technological solutions to environmental issues. Hierarchists are traditionalists whose behavior is governed by rules and regulations; they are especially susceptible to the power of subjective norms. Exert social pressure on hierarchists by demonstrating the pro-environmental behavior of valued others and the hierarchists will follow, as one predicted, “It is hard and not very enjoyable to be a minority influence on a situation, but if everyone joined in then it would be ‘cool.’”

FUTURE RESEARCH

Recommendations for future research arose throughout the research process, while preparing the literature review and collecting and analyzing data. These recommendations can be grouped into three topical areas 1) measurement, 2) education, and 3) subjective norms.

In order to more fully grasp the relationship between pro-environmental orientation and pro-environmental behavior, a more accurate measure of pro-environmental behavior is needed. Future research should endeavor to develop such an instrument; I suggest an index with several indicators of actual performance of pro-environmental behavior each reflecting varying degrees of personal effort or other cost.

Early educational experiences influenced the environmental consciousness of individuals and resulted in higher levels of pro-environmental behavior. Many respondents said they would like to perform more types of environmentally friendly behavior, but did not know how to do so. Research into the effects of environmental education programs on environmentally significant behavior could lead to the development of educational interventions to raise awareness of environmental issues and teach individuals about pro-environmental behaviors they could perform. Environmental education programs could be effective in bridging the gap between

abstract thinking about the environment and the concrete performance of situationally specific behavior.

In many cases, respondents' performance of pro-environmental behavior was dependent upon the perception of whether or not someone else important to the individual would perform such behavior. Since subjective norms only guide behavior if they are salient and invoked in the immediate situation research should be undertaken to ascertain how to make subjective norms regarding the performance of pro-environmental behavior more widely accepted and socially desirable. As the public performance of environmentally friendly behavior increases, the social pressure to do likewise would increase as well.

The results from this study parallel others in finding broadly shared concern for the environment, but for the most part this concern remains at a superficial level. Additionally most individuals did not think in terms of environmental conditions in general, but instead focused on a few specific issues: global warming, pollution, the destruction of animal habitats, and others. Delving more deeply into the ways individuals think about the environment showed that individuals from different cultural groups held very different ideas about the relationship between humans and nature, the extent and severity of environmental issues, and how those issues should be addressed. The culturally specific environmental socio-cognitive schemas clearly indicated the existence of cognitive cultural gaps and provided an example of how culture and cognition interact in the carrying on of social life.

According to this study, the explanatory link between pro-environmental attitudes and pro-environmental behavior lies in the concept of proximity; individuals' performance of pro-environmental behavior is driven by their perception of the distance they believe themselves to be from environmental issues. In order to increase the performance of pro-environmental

behavior, individuals' mental horizons must be expanded to include environmental issues, their consequences and solutions.

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APPENDIX A
INFORMED CONSENT FORM

Georgia State University
Department of Sociology
Informed Consent

Title: Sward or Lawn? An Investigation into the Cultural Foundations of Environmentally Significant Behavior

Principal Investigator: Ralph LaRossa, Ph.D

Student Principal Investigator: Gail L. Markle

I. Purpose:

You are invited to participate in a research study. The purpose of the study is to investigate environmental attitudes and behavior. You are invited to participate because you are a Zoomerang™ panelist. A total of 340 participants will be recruited for this study. Participation will require approximately one hour of your time.

II. Procedures:

If you decide to participate, you will fill out a questionnaire. You will not be compensated directly by the researcher, but as a Zoomerang™ panelist, you will earn 50 ZoomPoints™ for participating.

III. Risks:

In this study, you will not have any more risks than you would in a normal day of life.

IV. Benefits:

Participation in this study may not benefit you personally. Overall, we hope to gain information about environmentally significant attitudes and behavior.

V. Voluntary Participation and Withdrawal:

Participation in research is voluntary. You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. In accordance with the ZoomPanel™ Terms of Service Agreement which you accepted upon joining ZoomPanel™, you will receive ZoomPoints™ upon completion of the questionnaire. ZoomPoints™ are not awarded for partially completed questionnaires.

VI. Confidentiality:

We will keep your records private to the extent allowed by law. However, please be aware that data sent over the Internet may not be 100% secure. Information you provide is encrypted using secure socket layer technology. Dr. LaRossa and Gail Markle will have access to the information you provide but not to your name, or any other identifying information. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board and the Office for Human Research Protection [OHRP]). We will use a random numerical code rather than your name on study records. The information you provide will be stored in a secure, password and firewall protected computer accessible only to the researcher. Your name and other facts that might point to you will not appear when we present this study or publish its results. The findings will be summarized and reported in group form. You will not be identified personally.

VII. Contact Persons:

Contact Gail Markle at 770-644-0118, or gmarkle1@gsu.edu, or Ralph LaRossa at rlarossa@gsu.edu, if you have questions about this study. If you have questions or concerns about your rights as a participant in this research study, you may contact Susan Vogtner in the Office of Research Integrity at 404-413-3513 or svogtner1@gsu.edu.

VIII. Copy of Consent Form to Subject:

You may print a copy of this consent form for your records.

If you agree to participate in this research, please click the continue button.

APPENDIX B
SURVEY INSTRUMENT

Part 1: Please provide a thoughtful and thorough answer to each of the following questions.

1. What comes to mind when you think about the environment? Can you explain why?
2. What does this image mean to you? What do you think this image might mean to others?



3. What other images are you aware of that make you think of the environment? What is it about these images that makes you think of the environment?
4. What experiences, role models, or events have influenced your feelings toward the environment? In what ways have these experiences, role models, or events influenced your feelings?
5. What environmental issues are you aware of? Why did you choose these issues?
6. How did you find out about these environmental issues?
7. Whom should you trust when it comes to information about the environment? Why should you trust these sources?
8. What environmental issues do you think are important? Why did you choose these issues?
9. How do you think these environmental issues should be resolved? How do others think these issues should be resolved?
10. How long will it take to do the things that need to be done to resolve these environmental issues?
11. What environmental issues are important to other people but not that important to you? Why are these issues not as important to you?
12. What behaviors or actions do you consider to be environmentally friendly? What is it about these behaviors or actions that make them environmentally friendly?

13. Which environmentally friendly behaviors do you perform on a regular basis? Why do you choose to perform these environmentally friendly behaviors rather than others?
14. What other environmentally friendly behavior(s) would you like to do that you are not currently doing, and what is preventing you?
15. Which environmentally friendly behaviors do you think other people should do? Why did you choose these behaviors rather than others?
16. Which behaviors or actions do you think are especially harmful to the environment? Why did you choose these behaviors or actions?
17. What do you think environmental conditions will be like in the future? Why do you think so?
18. When did people start becoming concerned about the environment? What might be the reason for this?
19. What significant environmental events or changes have occurred in the past 50 years?
20. What was it about the events or changes listed above that make them seem especially important?
21. Describe a situation where you had to make a decision that required a tradeoff between environmental impact and personal benefit, cost or inconvenience. Which factors influenced your decision?

Part 2

To what extent do you agree or disagree with each of the following:

SA=strongly agree | A= agree | N=neutral | D=disagree | SD= strongly disagree

	SA	A	N	D	SD
1. A person is better off if he or she doesn't trust anyone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. In a family adults and children should have the same influence in decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. When I have problems I try to solve them on my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. There is no use in doing things for other people – you only get taken advantage of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It is important to preserve our customs and cultural heritage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Firms and institutions should be organized in a way that everybody can influence important decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I would not participate in civic action groups. Those in power do what they like anyway.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I prefer clear instruction from my superiors about what to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. The freedom of the individual should not be limited for reasons for preventing crime.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. It is important to me that in the case of important decisions at work everyone is asked.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I prefer tasks where I work something out on my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Order is probably an unpopular but important virtue.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Important questions for our society should not be decided upon by experts but by the people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. An intact family is the basis of a functioning society.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3

To what extent do you agree or disagree with each of the following:

SA=strongly agree | A= agree | N=neutral | D=disagree | SD= strongly disagree

	SA	A	N	D	SD
1. We are approaching the limit of the number of people the earth can support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Humans have the right to modify the natural environment to suit their needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. When humans interfere with nature it often produces disastrous consequences.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Human ingenuity will insure that we do NOT make the earth unlivable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Humans are severely abusing the environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. The earth has plenty of natural resources if we just learn how to develop them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Plants and animals have as much right as humans to exist.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Despite our special abilities humans are still subject to the laws of nature.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. The earth is like a spaceship with very limited room and resources.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Humans were meant to rule over the rest of nature.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. The balance of nature is very delicate and easily upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Humans will eventually learn enough about how nature works to be able to control it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. If things continue on their present course, we will soon experience a major ecological catastrophe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 4

Think about how you view yourself in relationship to the natural environment and indicate where you would place yourself between each statement:

1. in competition with the environment.....in cooperation with the environment
☐ ☐ ☐ ☐ ☐
2. detached from the environment.....connected to the environment
☐ ☐ ☐ ☐ ☐
3. very concerned about the environment.....indifferent about the environment
☐ ☐ ☐ ☐ ☐
4. very protective of the environment.....not at all protective of the environment
☐ ☐ ☐ ☐ ☐
5. superior to the environment.....inferior to the environment
☐ ☐ ☐ ☐ ☐
6. very passionate towards the environment.....not at all passionate towards the environment
☐ ☐ ☐ ☐ ☐
7. not respectful of the environment.....very respectful of the environment
☐ ☐ ☐ ☐ ☐
8. independent from the environment.....dependent on the environment
☐ ☐ ☐ ☐ ☐
9. an advocate of the environment.....disinterested in the environment
☐ ☐ ☐ ☐ ☐
10. wanting to preserve the environment.....wanting to utilize the environment
☐ ☐ ☐ ☐ ☐
11. nostalgic thinking about the environment.....emotionless thinking about the environment
☐ ☐ ☐ ☐ ☐

Part 5

Please answer No or Yes to the following:

No Yes

1. Increased efforts by business and industry to improve environmental quality could lead to higher consumer prices. Would you be willing to pay higher consumer prices so that industry could better preserve and protect the environment?

☐ ☐

In the past several years, have you:

2. Made any changes in your day-to-day behavior because of concerns about the environment?

☐ ☐

3. Contributed money to an environmental, conservation, or wildlife organization?

☐ ☐

4. Boycotted a company's products because of its record on the environment?

☐ ☐

5. Volunteered for an environmental, conservation, or wildlife protection group?

☐ ☐

To what extent do you agree or disagree with each of the following:

SA=strongly agree | A= agree | D=disagree | SD= strongly disagree

SA A D SD

6. I would be willing to give up convenience products and services I now enjoy if it meant helping preserve our natural environment.

☐ ☐ ☐ ☐

7. I would be willing to spend a few hours a week of my own time helping to reduce the pollution problem.

☐ ☐ ☐ ☐

Part 6

In this last section we would like to learn about your background.

1. What is your age?
2. What is your gender?
 - ☐ Female
 - ☐ Male
3. What is your race/ethnicity? Check all that apply.
 - ☐ Black
 - ☐ White
 - ☐ Asian American
 - ☐ Hispanic
 - ☐ Native American
 - ☐ Other
4. What is the highest educational level you have completed?
 - ☐ High school
 - ☐ Some college
 - ☐ Associates degree
 - ☐ Bachelors degree
 - ☐ Graduate degree
5. What is your relationship status?
 - ☐ Single
 - ☐ Cohabiting
 - ☐ Married
6. If you have children, how many do you have and what are their ages?
7. How many people live in your household including yourself?
8. Which part of the country do you live in?
 - ☐ South
 - ☐ West
 - ☐ Midwest
 - ☐ North
9. Which type of area do you live in?
 - ☐ Urban
 - ☐ Suburban
 - ☐ Rural
10. Are you a member of any environmental group?
 - ☐ No
 - ☐ Yes