

**Understanding the psychology of unsustainability:
Linking materialism, authoritarianism, attitudes toward gender and the
environment, and behavior**

by

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To my mother, who instilled in me great admiration for independent women
And to my father, who shared with me his love of nature

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CHAPTER I

Introduction

The feminist and environmental movements are two major social movements of the 20th and 21st centuries that have influenced institutional policies and individual attitudes and activities. While feminist and environmentalist activism are focused on different, specific social problems, there is a similarity in goals, in that each movement advocates comprehensive change to remedy a problem rooted in systems of domination, codified in social and economic structures (Reuther, 1993). Major advances have been made in gender-based equality and environmental protection and concern, but both movements meet persistent backlash and are frequent sites of debate (see, e.g., Faludi, 1991; Switzer, 1997). This raises an interesting psychological question: why do some people take no interest in, or actively resist, changes to increase gender equity and/or environmental protection while others are amenable to them, or actively engaged in pursuing them? Is there coherence among gender and environmental attitudes and behaviors and other social and psychological characteristics of a person such that we can better understand who views the changes associated with these movements positively or negatively? I propose that how much a person values material goods and supports hierarchical ideology is an important psychological factor that, along with status and material access and security, informs a person's support of or resistance to feminist and environmentalist goals.

In several disciplines, arguments have been made that people's relationships to material goods and the systems of production and consumption that contextualize them affect our perceptions, goals, beliefs, and actions (see, e.g., Marx [1867/1977] on commodification and alienation, Bourdieu [1979/1984] on consumption and preference, Appadurai [1986] on the social relations embedded in goods, and Inglehart's [1997] theory of postmaterialism). In this project, I explore the idea that materialistic values

(placing high value on the attainment of material goods and pursuit of success and happiness through material acquisition) are related to authoritarianism (attitudes indicative of a general preference for rigid social norms and a hierarchical structure of society, dominated by established authority), socially normative beliefs about gender and the environment, and lack of involvement in environmentally sustainable behaviors.

Proposed model and rationale

In the model I am exploring here, materialistic values are proposed as a possible antecedent to endorsing authoritarianism and conservative attitudes specific to gender and the environment and a lack of pro-environmental activities. Values, as a set of beliefs about ideal end-states (i.e. how things would be ideally), may predispose a person to hold attitudes that are consistent with or can be justified by their values. A feature of materialistic values is their assumption of a hierarchical structure of naturalized, social differences, sustained primarily by an emphasis on social comparisons. One way materialistic values function is to encourage maintenance of social hierarchies and the beliefs that naturalize and support them. I expect materialistic values to correlate positively with traditional gender attitudes and negatively with ecocentric, pro-environmental attitudes because these attitudes 1) are characterized by a hierarchical structure of naturalized differences and 2) are frequently used in the promotion of consumer goods in advertising that often objectifies and commodifies women and nature, thus conflating materialism with traditional beliefs about gender and the environment.

Previous research has found positive correlations between authoritarianism and both traditional gender attitudes (Haddock & Zanna, 1994; Duncan, 2006; Duncan, Peterson, & Winter, 1997) and hostility towards environmentalism (Peterson, Doty, & Winter, 1993). Given these findings and the idea that these attitudes are part of a constellation of beliefs that are authority-endorsed and support the status quo, I expect those same relationships to be confirmed in the proposed studies as well. Moreover, I expect that authoritarianism partially mediates the relationships between materialistic values and traditional gender and environmental attitudes. I believe that authoritarianism, with its emphasis on acceptance of a hierarchical social structure and

hostility towards attitudes that threaten to disrupt traditional systems of domination, is a primary “driver” in the relationship between material values and traditional gender and environmental attitudes, connecting the hierarchical structures that underlie them. While material values may have its own, direct effect on these traditional attitudes, I believe that much of the relationship is indirect, accounted for by the presence of authoritarianism and in this way, authoritarianism acts as a partial mediator. To better explain mediation, let me illustrate with an example that may be more familiar. Consider the relationship between height and age in children. There is a positive relationship between height and age, in that, generally, as age increases, so does height. But it would be misleading to assume that variance in height is accounted for solely (or at all) by the simple passage of time. We also know that growth hormones and nutrition play a role in changes in height. Looking at children of the same age, one would see that it is the variance in growth hormones and nutrition that accounts for the variation in height. In this example, hormones and nutrition mediate the relationship between age and height. There is still some unmediated relationship between age and height, but it is substantially accounted for by the varying presence of hormone. Translated to my proposed model of relationships, I am hypothesizing that authoritarianism is analogous to growth hormone where material values’ role is like that of age and traditional gender and environmental attitudes are the outcome, like height. I do not expect authoritarianism to act as a full mediator but as a partial mediator, since I expect material values to have an effect on gender and environmental attitudes *independent* of the presence of authoritarianism.

Finally, considering the relationships between attitudes and behaviors, I expect pro-environmental behaviors to correlate positively with ecocentric attitudes since behaviors are predicted most reliably by attitudes specific to the behavior (Eagly & Chaiken, 1993). Even though the content of materialistic values is not specific to environmental behaviors, I expect that these values will correlate negatively with pro-environmental behaviors, since they share a focus on the consumption of resources.

Based on this reasoning, I addressed the following questions in these studies:

1. Is a person who holds materialistic values also more likely to support traditional ideas about gender and to hold an 'ideology of dominion' in regards to the environment?
2. Are the relationships between materialistic values and specific, conservative attitudes partially mediated by authoritarian attitudes?
3. Are materialistic values correlated with lower levels of involvement in pro-environmental activities? If so, is this relationship partially mediated by authoritarian attitudes? Is it partially mediated by pro-environmental attitudes?

In the following sections, I will define the variables I am studying and briefly review theoretical frameworks and empirical evidence related to these variables in order to support the claim that there are different attitudinal and behavioral outcomes related to the endorsement of materialistic values.

Values, attitudes, and normative hierarchy

In capitalistic societies, goods and resources are distributed hierarchically based on social and economic differences, with those at the top possessing more resources and the symbolic values attached to those resources than those at the bottom, and with an ideology that justifies that distribution (see, e.g. Fromm, 1955; Jackman, 1994; Marx, 1867/1977; Wuthnow, 1985). One set of values common in this kind of capitalist context that helps reify socioeconomic hierarchies is materialistic values. Materialistic values assume a social hierarchy since the relative and changing sources of success and happiness tied to consumer practices encourages people to look outside themselves and to make social comparisons. Without a social hierarchy, it would be impossible to judge whether one is succeeding or failing according to one's materialistic values (see, e.g. Richins, 1995; Veblen, 1899/1965)

Social hierarchies are justified by shared values or norms, such as materialistic values, as well as specific attitudes that naturalize and reify hierarchies (Jackman, 1994; Sidanius & Pratto, 1999). Traditional attitudes towards gender and the natural environment are two examples of attitudes that normalize hierarchy in Western societies. Traditional beliefs about gender are based on perceptions of differences

between women and men that are seen as inherent and natural (Gelman & Taylor, 2000). Not only are women and men seen as essentially different but also men and masculinity are valued over women and femininity (MacKinnon, 1987; Schiebinger, 1989). Similarly, the natural environment has been perceived as inherently different from and inferior to the human or social in western cultural traditions. Ecofeminists have argued that beliefs about nature have paralleled or directly intersected ideas about gender; the natural world, in need of control, is comparable to the feminine, and the rational, human, social world is comparable to the masculine, intended to subdue and manage nature (Ortner, 1974; Mies & Shiva, 1993; Reuther, 1993). Like the class differences that underpin materialistic values, the hierarchies that structure these attitudes are based on differences that are familiar and therefore seem “natural.” These hierarchical associations in fact often substitute for one another and gendered metaphors for nature (e.g., the rape of the earth, Mother Nature) and nature based metaphors for gender (e.g., women as flowers or represented as ‘wild’ and emotional while men are ‘civil’, rational, and meant to subdue nature) are common in public discourse (Mies & Shiva, 1993). These images and metaphors normalize and naturalize hierarchical beliefs about both gender and the environment. Furthermore, they are often invoked in the discourse connected to material consumption practices. For example, in advertising, beliefs about gender and the environment that justify hierarchy are employed in the service of increasing consumer demand (see, e.g. Bordo [1993] regarding gender; Hansen [2002] regarding the environment).

Materialistic Values

Materialism produces consumption-related behaviors (actual or desired) such as buying beyond utilitarian need, spending a great deal of time shopping, or putting great effort into the pursuit of money so one has the capacity to secure material desires. A set of attitudes, attaching a great deal of importance to material goods that are believed to have the ability to bring a person happiness or demonstrate success, complements these behaviors. Merriam-Webster’s Dictionary (1997) defines materialism as “a doctrine that the only or the highest values or objectives lie in material well-being and in the

furtherance of material progress” (p. 717). This definition indicates three of the key features of materialism: 1) the high degree of importance a person places on material things, 2) the importance of the material beyond goods and products and 3) that as a “doctrine,” materialism is perceived to be a fundamental belief system that guides other thoughts and actions. These characteristics are the basis for the current conception of materialism as materialistic values; the possession of material goods is a desirable end in itself or is instrumental in achieving other goals, such as security or happiness.

Richins and colleagues (Richins & Dawson, 1992; Richins, Mick, & Monroe, 2004), the principal researchers of materialism as a value, have argued that “defining materialism as a value is consistent with the notion that materialism reflects the importance a person places on possessions and their acquisition as a necessary or desirable form of conduct to reach desired end-states, including happiness” (Richins & Dawson, 1992, p. 307).

A value is defined as “a centrally held, enduring belief which guides actions and judgments across specific situations and beyond immediate goals to more ultimate end-states of existence” (Rokeach, 1968, p. 161). People can hold a wide array of values, but contemporary value theorists use Rokeach’s basic model which stresses that some values are more important than others to a person and can be ranked accordingly. Value theorists generally assert that a person’s values are mostly stable across situations and through time and that the values people hold most strongly will influence their choices in many domains (Rokeach, 1973; Schwartz, 1992). It is the goal aspect of values that distinguishes them from other kinds of beliefs. Schwartz (1992) emphasizes this by defining values as beliefs about desirable goals that serve as guiding principles across situations in people’s lives. Actions will be chosen and thoughts directed in service of fulfilling those values or in correspondence with those values. As a conscious expression of a person’s goals and ideals, values do play a role in motivating attitudes and behaviors (Schwartz, 1992; Schwartz & Boehnke, 2004). In the case of materialistic values, a person will act and think in ways that support the importance she or he attaches to possessions and beliefs about what those possessions can give her or him.

Richins and Dawson (1992) have identified three belief domains that reflect the core elements of materialistic values: acquisition centrality, acquisition as the pursuit of happiness, and possession-defined success. When people’s desired ideal is a world in

which possessions feature prominently as signs of success, are believed to bring happiness, and are so important to them that they spend or desire to spend a great deal of time and energy getting them, they have materialistic values.

Social comparison is essential to one of the main markers of materialistic values - using possessions to judge one's own and others' success, either in terms of judging relative standing or determining what is "normal" (Richins, 1995). This judgment is necessarily relative and as such, requires hierarchy. Without a hierarchy in terms of which to rank people and possessions, the idea of using possessions as markers of success is not possible unless there is a fixed, unchanging set of possessions that symbolize success. Studies of the dynamics of consumption have shown that the meaning, importance, and acceptability of goods are unstable and are also tied to other features of the owner, particularly social identities such as class, gender, and ethnicity (see, e.g., McCracken, 1988; McRobbie, 1999). For example, for the past two years on the University of Michigan campus, Ugg boots have been a popular and sought after possession by many undergraduate students. These are sheepskin boots, made since the 1970s for Australian surfers to warm their feet after coming out of the cold waters of the Pacific, and originally dubbed 'ugg' as shorthand for 'ugly.' The original Ugg boots were relatively inexpensive, sheepskin being a common surplus material in Australia. As U.S. celebrities such as Sarah Jessica Parker, Pamela Anderson, and Kate Hudson were seen wearing Uggs, a trend quickly developed and the boots which formerly had only been available in Australia and New Zealand began to be sold in U.S. stores such as Nordstrom's. True Uggs (those of the Ugg Australia brand, now made in China) cost around \$120-150 for a standard model and about \$200 for newer versions. These boots, once been considered "anti-fashion," became not just a popular item, but a mark of popularity and a status symbol. As this example illustrates, the meaning and value of goods are not set by the value of the material resources in the good but are socially determined. This is a phenomenon seen frequently throughout human history, for example, in the sudden popular overvaluation of the tulip in the 1630s that created 'tulipomania' and sent the Dutch market into crisis (Pollan, 2001). The social construction of the value of a good is connected to the social identities of their owners, social identities which are frequently placed in hierarchies. Considering Ugg boots

again, while theoretically everyone in Michigan has a need to keep their feet warm in the winter, Uggs are associated only with women and primarily young white or suburban women of the middle and upper-middle classes. At the University of Wisconsin in Madison, Ugg boots mark people as “coasties,” students from the East or West coasts as compared to in-state students (Twohey, 2005). The label “coastie” does not mean just being from one of the coasts but it also implies that one is relatively wealthier than in-state students, lives in private dorms and has a “coastie mentality.” An in-state student described the “coastie mentality” as “a spoiled mannerism... they carry themselves like they’re better than everyone” (Twohey, 2005, p. 2). Goods, such as clothing, are frequently interpreted as saying something about a person’s personality, social group memberships and background. When social comparisons are made, these characteristics are evaluated through the lens of current social hierarchies. Relying heavily on social comparisons, materialistic values reflect the existing hierarchical structure of society. Those who attach a high degree of importance to socially acceptable and meaningful possessions should, then, be more accepting of social hierarchies than those who do not attach great importance to possessions.

Related lines of research support the idea that reliance on external sources for validation of oneself and information about others is a key feature of materialistic values. One conceptualization of materialism is as a general orientation to extrinsic goals (Kasser & Ryan, 1996; Kasser, 2002). Achieving fame, a popular image, and wealth are considered markers of materialistic values since they share a place of prominence in commercial advertising as well as “a focus of looking for a sense of worth outside of oneself, and involve striving for external reward and praise from others” (Kasser, 2002, p. 9). Chatterjee, Hunt and colleagues have reported similar links between materialistic values and an external orientation. Materialistic people tend to have an external locus of control (Hunt, Kernan, Chatterjee, & Florsheim, 1990), engage in self-monitoring (Chatterjee & Hunt, 1996), and are other-directed (Chatterjee, Hunt, & Kernan, 2000) to a greater extent than non-materialistic people. Materialistic values are not only linked to a general external orientation but to a highly normative one. Saunders & Munro (2000) found that those who have a “consumer orientation” were more likely to have higher scores on measures of conformity and authoritarianism

than those who were not oriented towards consumption.

Taken together, these findings support the idea that people who hold materialistic values are more extrinsically oriented and likely to engage in social comparison more often than those who do not hold materialistic values. By engaging in social comparison and seeking to fulfill their values, people with materialistic values also value and depend on a hierarchical system of naturalized, social differences. Acceptance of this system reinforces its normativity and encourages the maintenance of established hierarchies.

Authoritarianism

Normative hierarchy is also a key component of authoritarian attitudes. Right-wing authoritarianism (RWA) is a set of attitudes characterized by submission to authority, ‘conventionalism’ or support for established social norms, and aggression towards those who transgress norms (Altemeyer, 1988). RWA emphasizes both an acceptance of a hierarchical structuring of power and a tendency to favor the status quo and reject unconventional beliefs. For example, authoritarianism has long been associated with a need to separate people into in-groups and out-groups. Prejudice against people perceived as members of an out-group has often been shown to be related to authoritarian attitudes, whether the feature that denotes someone as being in an out-group is race or ethnicity, political beliefs, sexuality, or state of health (Altemeyer, 1996; Duncan, 2006; Haddock & Zanna, 1994). Duncan, Peterson, and Winter (1997) hypothesized that this out-group prejudice showcased the way authoritarians “organize their world in terms of power hierarchies” (p. 41). This function of authoritarian psychology can help maintain sanctioned, traditional power hierarchies.

Duriez and colleagues (Duriez, Vansteenkiste, Soenens, & DeWitte, under review) suggest that materialistic values could motivate RWA for two reasons. First, there is the “go along to get along” argument. If a person lives in a society where materialistic values are considered the norm, then adopting the “conservative, hierarchy-subservient and conformist attitudes” that characterize RWA is likely to be

perceived as instrumental to acquiring possessions and fulfilling one's materialistic values (p. 6). The argument assumes that people gain materially by adopting authoritarian attitudes and this material gain will help satisfy their material values. For example, if we consider gender differences in material resources, men generally have greater material benefits (e.g., higher income, access to possessions) in existing, hierarchical social systems than their female peers. This argument suggests that men have achieved these benefits by the adoption of authoritarian attitudes while women who do not have as much material benefit have not adopted authoritarian attitudes, or at least have not benefited in the same way from adopting them. However, there is no evidence that authoritarianism functions in this way. While men do often have significantly higher levels of authoritarianism than women (Altemeyer, 1988), members of other less privileged groups, e.g. the working class, also tend to have higher levels of authoritarianism than more materially privileged groups (Altemeyer, 1988; Lipset, 1959) which is inconsistent with the idea that one gains material rewards by supporting authoritarian structures.

Second, Duriez and colleagues propose that a materialistic person is likely to experience "feelings of threat, insecurity, and defensiveness" arising from frequent social comparison (p. 6). In response to this feeling of threat, a person may be more likely to adopt RWA attitudes than a non-materialistic person who doesn't feel threatened. This reasoning is based on previous research that found increased support for authoritarianism at both collective and individual levels in response to threat (Peterson, Doty, & Winter, 1993; Sales, 1973; Stenner, 2005) although the threat studied was not personal threat but threat to one's nation or social group.

A third reason, consistent with the approach taken in this study, is that holding materialistic values requires a belief in the correctness of hierarchical distributions of power that is consistent with authoritarian attitudes. This match in assumptions underlying these two constructs, combined with their high levels of social normativity, make it likely they are correlated.

If materialistic values are related to RWA due to this shared characteristic of support for hierarchical distributions of power, materialistic values and RWA should also be related to more specific attitudes that also emphasize hierarchy and domination

based on ‘naturalized’ differences. Two key arenas for maintenance of the status quo and demonstration of submission and dominance that protects accepted hierarchies are gender and the environment.

Gender Attitudes

Since the 1970s, there has been a steady trend in college-aged cohorts of increasing acceptance of egalitarian gender attitudes in the US (Spence & Hahn, 1997; Twenge, 1999). This has occurred in both women and men, although women as a group are significantly less traditional in their gender attitudes than men (Spence & Hahn, 1997). However, it can be argued that traditional gender attitudes continue to be normative. One way traditional gender attitudes are made normative is through sex-based differences in social roles that help construct gender roles (Eagly, 1987; Eagly, Wood, & Diekmann, 2000; Eagly & Wood, 2002). While some public and domestic sphere roles have expanded to include genders formerly excluded (e.g., women in leadership positions in business and increased expectations for fathers’ involvement in caring for children), a sex based division of labor remains and structures women’s and men’s activities (Hochschild 1983; 1989; Padavic & Reskin, 2002). Outside of differences in labor roles, women and men continue to perform gender in many ways (e.g., dress, body posturing, and language) that serve to construct and reify traditional gender stereotypes (West & Zimmerman, 1997; Martin, 1998).

Social roles are not only different for each sex but are linked to a hierarchical structure of societal power through which men continue to have greater access to power (Eisenstein, 1979; MacKinnon, 1987; 2001; 2006). As products of these unequal social roles, traditional gender attitudes that reinforce gender stereotypes also reinforce an unequal distribution of power. Gender stereotypes, both as descriptive and prescriptive beliefs, are normative – based on certain social norms and also determining them (Fiske & Stevens, 1993; Burgess & Borgida, 1999).

Traditional gender attitudes are characterized by the beliefs that women and men are essentially different and that women are subordinate to men (Swim, Aiken, Hall, & Hunter, 1995; Swim & Cohen, 1997). These beliefs reflect larger ideologies that legitimate a gendered hierarchy of power and help maintain it (Pratto et. al., 1994).

Social dominance theorists (Pratto et al., 1994; Sidanius & Pratto, 1999; Sidanius, Levin, Federico, & Pratto, 2001) have proposed that sexism is one of the “hierarchy-legitimizing myths” that appears to be a “self-apparent truth,” making it generally accepted in society (Pratto et al., 1994, p. 741). Sexism requires a hierarchical structure in which one group is dominant over another and the attribution of dominance and subordination is not arbitrary (MacKinnon, 1987).

Traditional attitudes towards gender can be motivated by RWA and MV because all three are built on the assumption of domination of one group over another and all three constructs require hierarchy. In fact, many studies have shown strong correlations between authoritarianism and traditional gender attitudes, whether about feminism (Haddock & Zanna, 1994; Sarup, 1976; Smith & Winter, 2002), sexuality (Whitley & Aegisdottir, 2000), or gender roles (Duncan, Peterson, & Winter, 1997; Duncan, Peterson, & Ax, 2003). However, less research has been done on the relationship between traditional gender attitudes and materialism. Outside of postmaterialist theory that contends that nations that have moved away from a focus on material security also hold more egalitarian attitudes towards gender (Inglehart, 1997), there are few studies of the relationship between materialistic values and gender attitudes. In one exception, Lye and Waldron (1997) reported that materialistic males were more likely to reject egalitarian gender attitudes and social role change. Overall, there is theoretical support for a relationship between material values, authoritarianism, and traditional gender attitudes but empirical evidence collected thus far is mainly limited to establishing a relationship between authoritarianism and gender attitudes. The relationship between material values and traditional gender attitudes has undergone much less empirical testing.

Environmental Attitudes

Bridging the feminist and environmentalist movements, ecofeminists (Merchant, 1980, 2003; Reuther, 1993; Shiva & Mies, 1993) have proposed that hierarchies of power construct human relationships with the environment as they do men’s relationship with women. Reuther (1993) details the history in many cultures of people perceiving their relationship to the natural environment in terms of hierarchy,

positioning humans above the environment. In this hierarchy, nature is a formidable force but ultimately subject to human will. An example in Judeo-Christian culture that has had a considerable impact in Western societies is the ideology of dominion, or belief that humans have god-given rights to oversee the earth (Reuther, 1993). Reuther concludes that, shaped by our historical legacies, our concepts of the environment often mirror our concepts of gender, associating nature with the feminine, and the rational, superior human with the masculine. In this framework, nature is also a frequent setting of human triumph or expressions of power (Paterson & Dalby, 2006). Thus, a dominance orientation to nature is expressed both in broad ideas about of the human-nature relationship and in specific attitudes towards the environment.

Similarly, environmental attitudes have been studied in two main forms in the psychological and sociological literatures: 1) concerns about specific environmental issues and 2) broader orientations of a person to the natural environment (Dunlap, Van Liere, Mertig, & Jones, 2000). With the increasing complexity, number, and global nature of environmental problems, researchers have looked to broad orientations to better explain attitudes across a range of specific environmental issues (Dunlap et al., 2000).

Broad orientations can help explain why some people hold anti or pro-environmental attitudes as well as differences within pro-environmental attitudes, differences that affect behavioral outcomes. Gagnon-Thompson and Barton (1994) have shown that people who support environmental causes may do so for ecocentric or anthropocentric reasons, affecting environmental behaviors and levels of apathy towards specific environmental problems. Ecocentric people believe the environment “deserves protection because of its intrinsic value” while anthropocentric people’s desire to protect the environment is primarily motivated by the instrumental value of nature “because human comfort, quality of life, and health can be dependent on the preservation of natural resources” (Gagnon-Thompson & Barton, 1994, p. 149). Thus, while two people can share similar attitudes towards environmental issues, they could arrive at these attitudes through different orientations and thus be motivated differently. For example, two people may each be concerned about suburban sprawl as an environmental problem because it uses up arable land and increases levels of fertilizers

and pesticides in water. One person, with an ecocentric orientation, finds these consequences problematic because they disrupt whole ecological systems. For the second person, with an anthropocentric orientation, the problem is that these consequences impinge on human quality of life. Later on, these orientations may lead to quite different attitudes. If a new high production, low land use form of agriculture is developed or chemicals in the water are filtered out before human consumption, the anthropocentric person may shift their attitude to approving of suburban sprawl because the cost to humans has been reduced.

The New Environmental Paradigm (Dunlap & VanLiere, 1978), later renamed the New Ecological Paradigm (Dunlap et al., 2000), or NEP, is considered to represent an ecocentric worldview. The NEP encapsulates several key beliefs that are thought to characterize an environmentalist stance: natural resources are limited, the balance of nature is fragile, humans are not exempt from the constraints of nature, serving human needs is not nature's primary purpose, and there is a real possibility of an ecological crisis. The NEP represents a general, pro-ecological worldview and as such is thought to influence attitudes about specific environmental issues (Dalton, Gontmacher, Lovrich, & Pierce, 1999; Stern, Dietz, & Guagnano, 1995). The ecocentric NEP is contrasted to the anthropocentric, conventional "dominant social paradigm" of the 1970s that emphasized the primacy of economic growth and human control over the environment (Dunlap & VanLiere, 1978).

There are few studies of the relationship between right wing authoritarianism and environmental attitudes but one has shown a negative correlation between RWA and NEP endorsement (Schultz & Stone, 1994) and another a positive correlation between RWA and anthropocentrism (Lefcourt, 1996). RWA has also been shown to be associated with hostility towards the environmental movement and its activists. Peterson, Doty, and Winter (1993) found that authoritarians endorsed punishing environmentalists but not polluters for disruptive behavior. The authors speculated that this may be because environmentalists are perceived as an out-group and hence, threatening to the status quo. Institutional perpetrators of large scale environmental crimes are perceived as part of the establishment, not opposed by and in fact usually supported by authority. Thus, the threat of environmentalists to a conventional way of

life is perceived to be equal to or greater than polluters' threat to the environment. The authors also found that RWA is significantly positively correlated with an ideology of dominion, a concept reflecting an acceptance of a hierarchical structuring of the human-environment relationship where nature is subordinate to humans. These findings suggest that RWA is a plausible correlate of low support for ecocentric environmental attitudes and the hierarchy support that is central to RWA may be the cause of it.

Finally, similarities in demographics suggest a correspondence in the structure of RWA and environmental attitudes, based in a shared worldview. Dunlap and colleagues report consistent evidence for NEP support having a positive relationship with education and liberalism (Dunlap et al., 2000). Similarly, RWA is negatively correlated with education and liberalism (Altemeyer, 1998).

Environmental Behavior

Concern for the environment may be a fine thing in itself, and theoretically better than a negative or destructive attitude towards the environment, but do attitudes supporting environmental protection translate into environmentally sustainable behaviors? Correspondence between attitudes and behavior varies, but there is consistent evidence that attitudes are significantly related to environmental behavior, across cultural contexts (see, e.g., Aini, Fakhrul-Razi, Lau, & Hashim, 2002; Arbuthnot, 1977; Ebreo & Vining, 2000; Garnder & Stern, 1996; Guagnano, Stern, & Dietz, 1995; Nordlund & Garvil, 2002; Oskamp, Harrington, Edwards, & Sherwood, 1991). Attitudes that are specific to an environmental behavior have the strongest relationship to intention to act and actual follow-through (see, e.g., Norlund & Garvill, 2002). Broader orientations, like the NEP, show weaker direct correspondence (see, e.g., Poortinga, Steg, & Vlek, 2004; Vining & Ebreo, 2002). However, Stern and colleagues (Stern, 2000; Stern, Dietz, Abel, Guagnano, & Kalof, 1999; Stern, Dietz, & Guagnano, 1995) have argued that this correspondence is weak because there is a causal chain leading from very general values to specific behaviors. An "ecological worldview" as measured by the NEP is one link away from the beginning of this chain. The Value-Belief-Norm (VBN) model (Stern, 2000; Stern et al., 1999) is a mediation model in which very general values (as defined by Schwartz, 1977) predict beliefs. These beliefs

in turn predict personal moral norms (i.e., a sense of obligation) that then predict pro-environmental behavior.

The VBN model builds on evidence collected for two other behavioral models. First, there is Schwartz's (1973, 1977) moral norm-activation theory of altruism that purports that collectivity oriented, helping behaviors are a function of an individual's moral norms (that is, an individual's sense of right and wrong, not a shared social norm) being activated by a person's perception that a situation is threatening to others and the belief that they can help alleviate that threat. Second, Fishbein's & Ajzen's (1975; Ajzen & Fishbein, 1980) theory of planned behavior holds that perceived personal control contributes to a subjective norm (i.e., how much a person feels a behavior is okay) that then predicts a favorable attitude to the behavior, increasing intention to act and ultimately leading to action. These two theories share a similar model of causal flow in that beliefs precede individual norms about right and wrong and intentions that precede behavior. Stern and colleagues (Stern, 2000; Stern et al., 1999) combined these two theories and also looked at what might cause the beliefs that Schwartz and Fishbein and Ajzen hypothesized lead to behavior. In the VBN model, beliefs mediate the relationship between general values and intentions and norms that precede behavior (Stern et al., 1999; see, also, Oreg & Katz-Gerro, 2006). Furthermore, beliefs are broken up into three categories, moving from worldview (e.g., NEP) to awareness of consequences to ascription of personal responsibility. The NEP, described by Stern and colleagues (Stern et al., 1995) as a 'folk ecological theory' representing an ecological worldview, functions primarily to affect specific attitudes and beliefs as to what constitutes a desirable outcome from an environmental action. The VBN model for pro-environmental behavior is currently being tested and refined, including accounting for national level values (Oreg & Katz-Gerro, 2006), assessing directionality with path analysis (Norlund & Garvill, 2002) and testing for mediation effects (Steg, Dreijerink, & Abrahamse, 2005). These efforts so far have supported the VBN model.

Similar to other categories of behavior, there is evidence of mismatch between attitudes and behaviors (i.e., many people hold pro-environmental attitudes but do not engage in pro-environmental behaviors; Gagnon-Thompson & Barton, 1994; Gardner & Stern, 1996; Nordlund & Garvill, 2002). Stern's theory of environmental behavior

(Stern, 2000) identifies four causal variables influencing pro-environmental behavior that help explain this discrepancy: attitudinal, contextual factors, personal capabilities, and habits. These four factors interact to motivate or impede behavior. Attitudinal variables are construed broadly, ranging from general values and worldviews to attitudes and intentions specific to one issue. They can account for a range of variance depending on the salience of the other factors, the salience of all factors varying according to type of behavior. Stern (2000) proposes that the influence of attitudinal variables increases in cases where the context is favorable (e.g., there is an effective community-wide recycling system) or barriers related to contextual and personal capabilities factors have been reduced (e.g., organic foods are accessible because they are priced competitively). For example, in a study on energy conservation (Black, Stern, & Elworth, 1985), attitudinal variables accounted for 59% of variance in setting a home thermostat at a recommended temperature, a behavior in which contextual and personal capability factors such as cost and effort are low. In contrast, attitudinal variables accounted for only 25% of the variance in more demanding tasks such as adding insulation. Thus, it is expected that the strength of the relationship between NEP and an environmental behavior will vary according to the type of behavior and relevance of contextual factors, personal capabilities, and habits.

There are two main categories of environmentally significant behavior: actions that directly affect the environment (e.g. how a person disposes of used motor oil) and behaviors that indirectly affect the environment by changing the context in which direct actions can take place (e.g., a carbon credit system) (Stern, 2000). Of interest to the project proposed here, context changing behavior includes political activism on behalf of the environment including environmental group membership, voting, and petitioning government through letters or rallies. Engagement in environmental political activism has been shown to correlate positively with NEP and endorsement of general environmental concern (Stern et al., 1995) and environmental protection policies (Rauwald & Moore, 2002). NEP has also been found to correlate positively with individual based behaviors that directly affect the environment (see, e.g., Cordano, Welcomer, & Scherer [2003] on intention to act and Scott & Willits [1994] on actual

behavior), though others have found that NEP did not have a significant relationship with behaviors (see, e.g., Nooney, Woodrum, Hoban & Clifford, 2003).

Demographic patterns again suggest some sort of underlying structure, social and/or psychological, that is similar to demographic characteristics related to endorsement of materialistic values, RWA, and ecocentric attitudes. Higher education and affluence, related to low levels of material values and RWA, and high levels of ecocentric attitudes, have been shown to be related to greater engagement in environmental activity, in both affluent (Balderjahn, 1988; Gamba & Oskamp, 1994) and less-affluent countries (Bodur & Sarigöllü, 2005). Critics suggest this could be a measurement artefact since many measures assess behaviors, such as a “willingness to pay,” that require or are made easier by spending money whereas re-use activities are overlooked (Brechin & Kempton, 1994; Brechin, 1999).

Rationale for proposed studies

In order to assess the relationship between materialistic values, right wing authoritarianism, traditional gender and environmental attitudes, and engagement in environmentally sustainable behavior, two questionnaire studies are proposed. Questionnaire measures are appropriate since the constructs under study are either consciously held beliefs or behavior that can be assessed by self-report. The two studies to be analyzed utilize very different subject samples, varying by country of residence, age, gender, education, and class. Due to such different demographic backgrounds and social contexts, direct comparisons between Study 1 and Study 2 must be made with caution. However, the strengths of the relationships can be compared and will give some insight into how different contexts may affect these relationships.

Study 1 is the *Buenos Aires Study of Materialism, Gender Attitudes, and Environmentalism*. Since I am proposing that materialistic values are antecedent to RWA, gender attitudes, and environmental attitudes and behaviors, a location where materialistic values, and the consumption of material goods, is featured prominently makes an excellent setting for this study. Argentina is a country with a great deal of the infrastructure and economic capacity of “first world” countries, but it lacks the widespread prosperity and security those nations have (Astorga, Berges, & Fitzgerald,

2005). This intermediary position between the first and third worlds combined with ambivalent historical connections to wealthier Western Europe makes the Argentine economy and the material security of its citizens a focus of much activity at both government and individual levels. Buenos Aires, as the capital of Argentina with approximately 40% of the nation's citizens residing within the capital or the surrounding Buenos Aires province, has historically been and continues to be the center of much of the economic, political, and cultural activity of the country and therefore tends to define Argentina's social norms.

The insecure economic context and social norms related to material consumption in Buenos Aires heighten the relevance of materialistic values there. Argentina's economy in recent history has been marked by cycles of inflation and deflation though these were kept within moderate ranges until the crisis of 2001. Prior to 2001, Porteños (residents of Buenos Aires) enjoyed a higher standard of living than many countries in South and Latin America and more closely resembling lifestyles in many Western European and North American countries (cite). They are known across the South American continent for their interest in shopping and consumption of goods (Tevik, 2003). In the 1980s and 90s, the wealthy elite was even nicknamed the "dame dos" (give me two) referring to stories of porteños traveling in other countries and requesting two of whatever they wanted to buy (Tevik, 2003). However, after the collapse of the peso in 2001 when it was devalued from being pegged 1:1 with the U.S. dollar to 7:1 with the U.S. dollar, consumption in all strata of society was drastically scaled back. The value of the Argentine peso is now stable at 3:1 but wages have not kept up with the rate of inflation and many businesses never recovered from the crisis, closing down and leaving thousands unemployed. One result of the crisis is that wealth disparity has increased, leaving the majority of the population in much less materially affluent and even impoverished lifestyles than they had previously (Tendencias Económicas, 2002).

We can assess some differences between Argentina and the U.S. in terms of the World Values Survey's materialism - postmaterialism scale. In the context of that survey, materialism refers to security orientation or the search to have basic needs met, while postmaterialism involves the satisfaction of "lifestyle," under the assumption that

basic needs are reliably met (Inglehart, 1997). Materialism is negatively correlated with national median incomes, meaning that poorer countries tend to have higher materialism scores than wealthier countries. Data from the World Values Survey (Abramson & Inglehart, 1995; Inglehart, 1997; 2003) on Argentina and the U.S. reflects this pattern; the U.S. scores higher in the postmaterialism scale. Postmaterialists do not constitute the majority in either country (nor in any country assessed in the World Values Survey) but there is a higher percentage of materialists proportional to postmaterialists in Argentina than in the U.S. (Kidd & Lee, 1997). According to Inglehart's definitions of materialism and postmaterialism, this means that more Argentines are oriented towards security than towards lifestyle satisfaction. A materialist orientation in this sense has been shown to negatively correlate with non-traditional gender attitudes and pro-environmental attitudes (Inglehart, 1997; 2005; Inglehart & Norris, 2003).

Another feature of Buenos Aires society relevant to this study is the presence of numerous contextual and personal capability barriers to pro-environmental behavior. There is very little infrastructure in place in Buenos Aires for carrying out environmentally responsible behaviors (e.g., there is no recycling system outside of the informal (yet highly organized) leagues of carteneros or scavengers). Also, social norms do not encourage pro-environmental habits, such as re-using old clothing or bringing previously used bags or cloth bags to the grocery store.

Lastly, there is the value of studying a group that is not often the subject of psychological research. While social science research is conducted in Argentina, people there are not studied nearly as extensively as the US population is studied. A frequent suggestion in studies of materialism, gender attitudes, and environmentalism is the need to explore these constructs in cultural settings outside North America and Western Europe (Brechin, 1999). While I am not assessing specific cultural differences or making cultural comparisons, there is value in seeing whether these hypotheses, based primarily on earlier, mostly U.S. based research, are supported in a non-U.S. setting.

Study 2 is *The Radcliffe Class of 1964 Study*. This study is designed to assess whether similar relationships as the ones tested in Study 1 exist in a very different U.S.-based sample. The Radcliffe sample is much more personally economically secure as a

group than the participants in the Buenos Aires study. They also live in the larger context of a more materially secure country. As noted earlier, the U.S., comparative to other countries, has a relatively high percentage of postmaterialists. Inglehart (2005) interprets this to mean that the U.S. populace is less security oriented and more lifestyle satisfaction oriented than people in poorer countries. Clearly, this aggregate feature applies differently to segments of the U.S. population. The demographic profile of the Radcliffe sample in particular (e.g., high levels of income and education) suggests they should be postmaterialist, even more than the U.S. average, since wealth is highly correlated to postmaterialism. As highly educated and affluent Americans, it is likely that their material security needs are satisfied. However, as they approach retirement age, they might also have age-related security concerns that might raise their levels of materialistic values. There may also be an effect on materialistic values related to their generational cohort. The women in this sample were born in the later years of World War II and raised in a post-war context of increasing affluence for the white middle class and a shift in the engine of economic growth from production to consumption (Galbraith, 1958). While they spent their formative childhood and adolescent years in this context, they were also young adults (mid to late twenties) when the counter cultural movement of the late 1960s challenged many social norms, including defining success materially and the appropriateness of ever increasing consumption.

This profile also suggests that they are likely to have low RWA scores, the proposed mediator of the relationship between materialistic values and traditional gender and non-ecocentric environmental attitudes. If these expected patterns of scores are found, it will be useful to assess whether the model proposed holds up even when endorsement of materialistic values and RWA are low overall.

While wealth may be correlated with postmaterialist values, it also allows for higher rates of material consumption (Bernasek, 2006). The economic backgrounds of the Radcliffe sample would lead us to expect that they would not endorse materialistic values at high levels but will also have much greater access to and acquisition of material goods, and therefore might have little interest in pro-environmental behavior.

The Radcliffe sample consists of women who were affected by the 1970s and women's movement (Stewart & Healy, 1989). However, we do not know anything

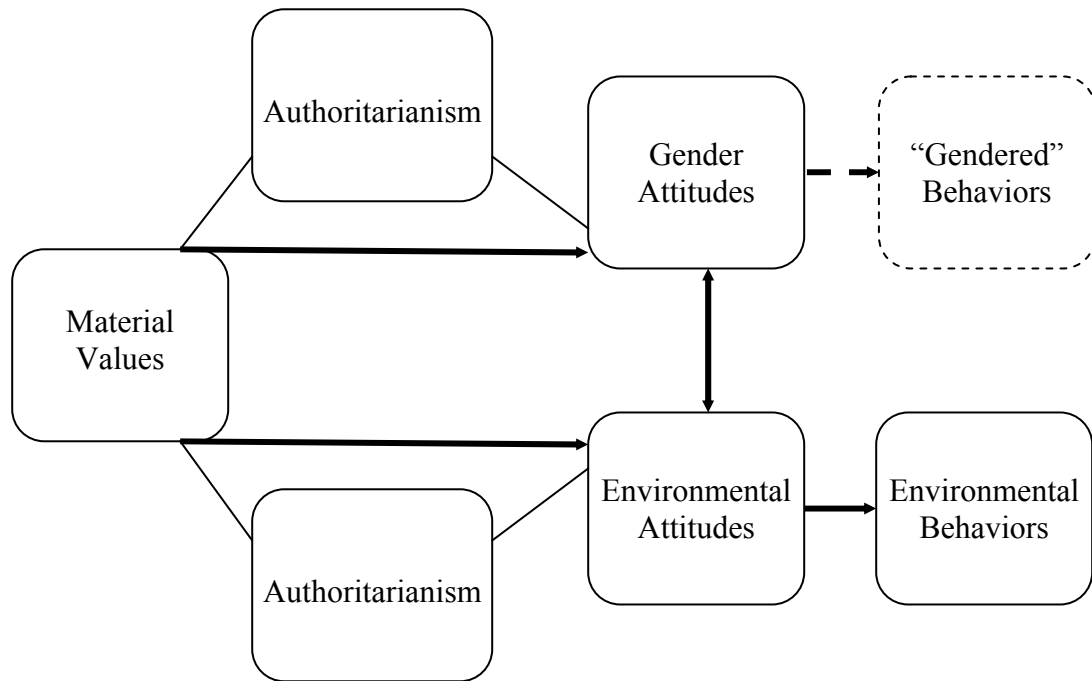
about whether they hold ecocentric attitudes as well. They are likely to live in situations in which context and personal capability barriers to pro-environmental behavior are at least reduced, and some likely have excellent access to infrastructure that supports direct impact behaviors (e.g., recycling infrastructure). Social norms within U.S. society also encourage at least a low level of environmentally responsible behavior (e.g. some energy conservation and recycling).

An advantage of both studies is that the participants are drawn from an adult population, not a university undergraduate pool. Non-student adults have a range of experiences undergraduates often do not have, including being involved in paid employment and providing for oneself and family. These kinds of experiences may shape materialistic values and environmental attitudes and behaviors in particular since they frequently involve the acquisition and use of material resources.

Hypotheses

I am proposing four general arguments that can be broken down into several testable hypotheses. First, I argue that materialistic values are antecedent to RWA. Second, materialistic values and RWA are both antecedent of more specific attitudes: support for traditional gender roles and lack of endorsement of ecocentric perspectives of the environment and engagement in pro-environmental behaviors. Third, while materialistic values may be related to these domain specific attitudes, these relationships are mediated by RWA. Finally, domain-specific attitudes will be expressed in relevant behavior, and therefore general attitudes will be expressed in behavior through more domain-specific attitudes. Figure 1.1 is a visual representation of this model.

Figure 1.1 Schematic representation of hypothesized relationships



Bold lines indicate hypothesized causal relationships

Plain lines indicate hypothesized mediating role of authoritarianism

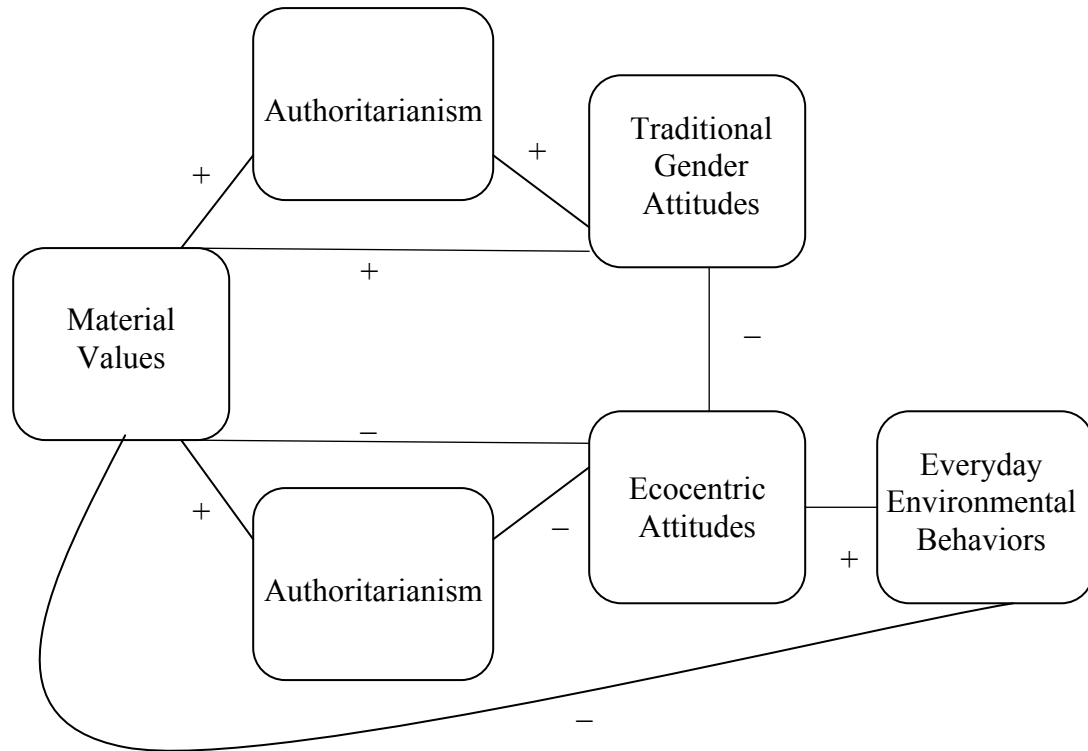
I will investigate these relationships in two samples in different cultural contexts. One is a convenience sample drawn from the general, adult population in Buenos Aires, Argentina. The second is a sample of American women in their early sixties, mainly upper-middle and upper class, who all attended the same college. By including women and men across a wide range of ages and social and economic classes in two cultural contexts, I hope to identify patterns that may be consistent across certain social identities or may vary according to them (e.g. by class or gender). Lists of specific hypotheses for each study and a visual representation of the hypothesized relationships (Figure 1.2, Buenos Aires Study; Figure 1.3, Radcliffe Study) follows:

Study 1: Buenos Aires Study of Materialism, Gender and Environmentalism

My specific hypotheses for this study are as follows:

1. Material values (MV) and right wing authoritarianism (RWA) will be positively correlated.
2. MV will be negatively correlated with ecocentric attitudes.
3. MV will be positively correlated with traditional gender roles.
4. RWA will show a similar pattern of relationships as material values such that people high in RWA will have lower levels of ecocentric attitudes than people high in RWA.
5. People high in RWA will have higher levels of endorsement of traditional gender roles than people low in RWA.
6. RWA will partially mediate the relationship between MV and endorsement of traditional gender roles and ecocentric attitudes.
7. There will be a negative relationship between traditional gender attitudes and ecocentric attitudes. People high in traditional gender attitudes will be low in ecocentric attitudes.
8. People high in MV will have lower levels of everyday pro-environmental behaviors than people low in MV.
9. People high in ecocentric attitudes will engage in everyday pro-environmental behaviors more often than people low in ecocentric attitudes.

Figure 1.2 Buenos Aires Study: Schematic representation of hypothesized bi-variate relationships



Study 2: Radcliffe Class of 1964 Study

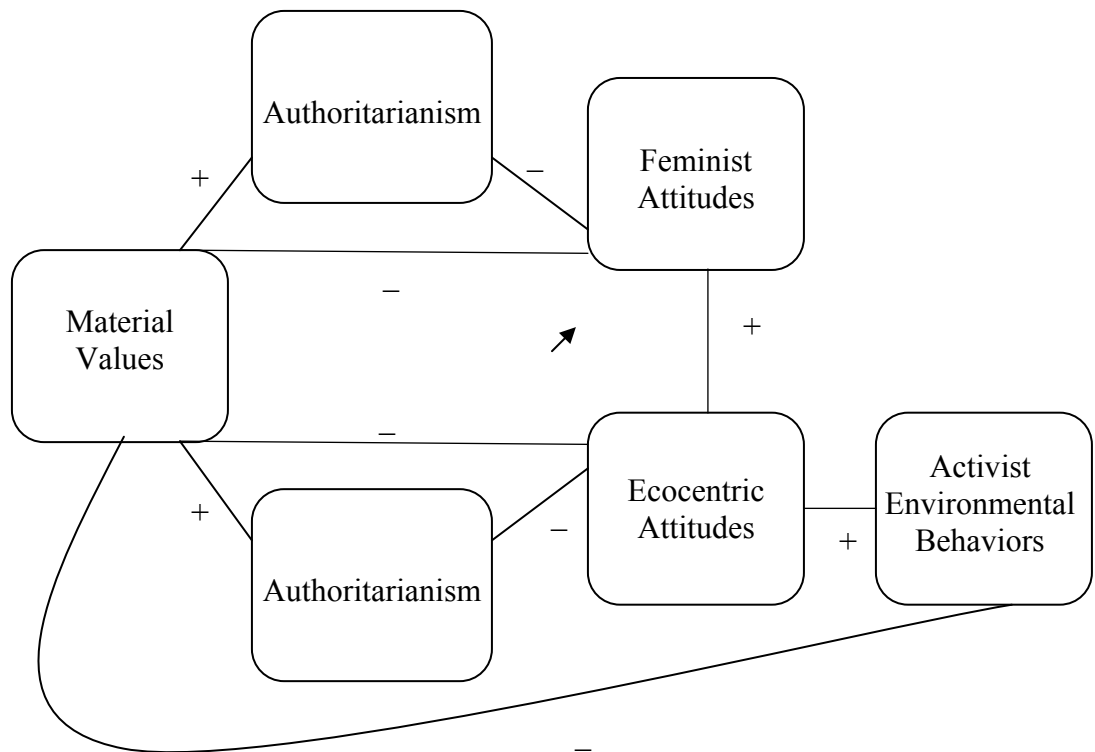
My specific hypotheses for this study are as follows:

1. The main correlations I hypothesized in the Buenos Aires sample will also be tested in the Radcliffe sample. Specifically,
 - a. MV and RWA will be positively correlated.
 - b. MV will negatively correlate with ecocentric attitudes.
 - c. RWA will negatively correlate with ecocentric attitudes.
 - d. RWA will partially mediate the relationship between MV and ecocentric attitudes.
2. The test of relationships with gender attitudes will be different as there was not a measure of attitudes towards traditional gender roles in the Radcliffe study.

Instead favorability towards feminist attitudes (intersectional consciousness) was measured. Accordingly, I hypothesize that people high in MV will have lower levels of endorsement of feminist attitudes than people low in MV.

3. Similarly, people high in RWA will have lower levels of endorsement of feminist attitudes than people low in RWA.
4. There will be a positive relationship between feminist attitudes and ecocentric attitudes. People high in feminist attitudes will be high in ecocentric attitudes.
5. People high in MV will have lower levels of environmental activism, in terms of both level of involvement and number of kinds of activist activities than people low in MV.
6. People high in ecocentric attitudes (high NEP endorsement) will have higher levels of environmental activism than people low in ecocentric attitudes (low NEP endorsement).

Figure 1.3 Radcliffe Study: Schematic representation of hypothesized bi-variate relationships



In summary, these studies provide information on material values, whether material values correspond to broadly conventional attitudes as identified in right wing authoritarianism or specific conventional attitudes such as support of traditional gender roles, and lack of support for an ecocentric attitude towards the environment, and whether these attitudes and values are related to politically activist and everyday behaviors.

CHAPTER II

Methods

Study 1: Buenos Aires Study of Materialism

Participants

This study is based on a sample of 242 adults. Two hundred ninety-seven adults were approached to participate in this questionnaire study, conducted in Buenos Aires, Argentina in June and July 2005, and 243 returned questionnaires. There are 142 women and 97 men in the sample; 4 others did not report their gender. One participant not reporting gender was dropped from the sample since she or he completed less than one page of the ten page questionnaire. Half of the sample was aged 29 or younger with 33% aged 18-24, 22% aged 25–30, 24% aged 31-45, 17% aged 46-60, and the remaining 4% over age 60. Participants were recruited only within the boundaries of Buenos Aires, the capital city. However, several participants live in Buenos Aires province, the area surrounding the city, and work or study inside the city. A table outlining the demographics of this sample as they compare to the sample used in Study 2 can be found in Appendix A.

My goal was to examine possible correlation relationships among endorsement of materialist values, conventionalism, attitudes and beliefs about gender and the environment, and pro-environmental behaviors and not the *prevalence* of these values and attitudes in the general population in Buenos Aires. Therefore, I recruited a convenience sample from the general population and also purposively sampled some participants. In the convenience sample, participants were recruited to insure a diverse sample using three methods: going door-to-door, snowballing, and ongoing solicitation at a health food store and a gym. First, with the assistance of two undergraduate

psychology students at the Universidad de Belgrano, one female and one male, we chose three neighborhoods: one considered primarily lower middle class, one middle class, and one upper class. Research assistants were trained to use an oral script that they rehearsed with me to ensure they consistently used the same script with each participant. They went door-to-door asking employees and residents (most neighborhoods in Buenos Aires are a dense mix of commercial and residential buildings) if they would like to participate in the survey. All contacts with participants were made in Spanish.

Efforts were made to recruit participants of all income and class levels. In Buenos Aires, income and education - the two traditional indices of social class - are related but at a very low level ($r = .19$, $p = .006$). Due to economic instability, many well-educated people have low incomes. The level of education in Argentina is quite high; 89.6% have at least a primary level education and 41.8% have at least a secondary diploma (UNESCO-UIS, 2002). In 2005, the rate of unemployment was 11.6% in the greater Buenos Aires area, an improvement over the 24% rate in 2002 (ECLAC, 2007 p. 120) but still high nonetheless, and likely obscuring the number of those who are *underemployed*. Throughout the economic ups and downs, areas of chronic poverty have persisted, such as La Boca, where levels of both education and income remain low. In an effort to recruit participants who are part of the economic and educational underclass, a third assistant, a master's level psychology student, and I targeted a low-income neighborhood, La Boca. We tried to solicit participation through a "comedor" which is a kind of low cost restaurant, subsidized by the government, but run privately. Yet it was difficult to recruit among people who had little experience with lengthy questionnaires such as this. My ten page questionnaire was ill suited to people who rarely encountered this kind of written, survey-based research. As one man told me, "Just looking at this makes my head hurt!" Thus, many of the lower income participants are people of relatively high education with good income potential but currently low incomes (due to the economic downturn, temporary unemployment or student status). For example, 50% of the sample has a monthly household income of \$1500 AR (roughly \$500 USD or 425 Euros) or less. Within this group, 63% (or 27% of the total sample) have attended or completed degrees beyond the secondary school level.

Second, we employed the “snowball” technique; participants were asked if they had friends or family who would like to participate. Using both direct solicitation and snowballing, the majority of participants were recruited across a wide range of ages, income, and education levels. All participants recruited in these two ways were offered compensation in the form of a 5 trip subway pass worth three pesos (approximately one US dollar).

Third, I set up a coupon system at a small health foods store and another at a large gym. Participants could pick up a survey from the cashier or receptionist and return it to them in a sealed envelope in exchange for a coupon to be used in the establishment. These participants were offered compensation in the form of a coupon for three pesos that could be used in the health food store or the café bar in the gym when participants were recruited at those locations. Coupons could be used towards any food purchase, e.g. 3 pesos could buy 3 bottles of water or a coffee and a croissant. This coupon system was the primary means of recruiting for the purposive samples. In the first purposive sample, I intended to locate participants who were likely to hold pro-environmental attitudes and/or engage in pro-environmental behaviors by recruiting members of Greenpeace (n=20), a union of recyclers called El Ceibo (n=7) and customers at a natural health foods store (n=13). I also recruited members of a gym located within a mall in an upscale shopping district (n=23) in the hope of insuring an adequate sample of those who endorse materialist values, given previous research linking the pursuit of extrinsic goals, such as perfecting one’s image and appearance, to materialist values (Kasser & Ryan, 1996). Due to the way I tracked recruitment source, I was not able to test for differences between snowball and purposive recruitment methods. However, I was able to test for differences between direct contact (i.e., approached by an RA, snowball) and group contact (i.e., purposive samples at the gym, health food store, Greenpeace and El Ceibo) sub-samples. I examined differences in mean scores and demographics between the direct contact and group contact sub-samples using t-tests for interval data and chi-square for categorical data. No significant differences were found. Breaking down these two groups into smaller groups was not possible due to very small n in some groups.

Study Design

A ten page questionnaire was administered to all participants, with items in forced choice and open-ended formats. Several kinds of attitudes, current behaviors and demographic information were collected using the questionnaire. A native Spanish speaker translated all measures and items for which a Spanish language version did not already exist. A native English speaker bilingual in Spanish then back-translated all of the items. Through this back-translation process, all measures were phrased in Spanish in a way that came as close as possible to preserving the original meaning when written in English. To further insure that the originally intended meaning was being communicated to participants, a Spanish teacher, native to Buenos Aires and fully bilingual in English, reviewed the questionnaire, consent form and debriefing form. She suggested only minor changes, specific to Argentine vocabulary. A social science professor at the Universidad de Belgrano in Buenos Aires also reviewed the questionnaire and suggested minor changes, most notably a change to the assessment of political ideology, switching it from party affiliation to placement on a conservative-progressive continuum.

Measures

Measures include several established scales, some items created specifically for this questionnaire, and demographic questions. A table in Appendix B shows which measure was used in each study. Measure items are listed in English in Appendix C. Items are listed in Spanish in Appendix D.

Materialistic Values

Materialistic values and beliefs were assessed using Richins and Dawson's (1992) Material Values Scale (MVS). Richins (2004) defines materialism as "the importance ascribed to the ownership and acquisition of material goods in achieving major life goals or desired states... encompassing three domains: the use of possessions to judge the success of others and oneself, the centrality of possessions in a person's life, and the belief that possessions and their acquisition lead to happiness and life satisfaction" (p. 210). This definition includes the three subscales Richins and Dawson arrived at through factor analysis in their initial testing and validation of the scale: goods are a

sign of success (success), goods are a means to happiness (happiness), and possessions and their acquisition are a central feature in one's life (centrality).

Richins and Dawson developed the 18 item MVS based on interviews with 11 consumers of various ages and incomes, who were asked to describe the attitudes and values of materialistic people both generally and specific to people they knew. Other items were based on previous studies of materialism in the psychological, marketing, and sociological literatures. More than 120 items were created but after testing with three student samples (Richins and Dawson, 1990) and four consumer samples in several regions of the US, the scale was reduced to 48 items, then 30 and finally 18. Factor analysis indicated the scale fell into three factors: success (e.g. "The things I own say a lot about how well I'm doing in life"), centrality (e.g., "I like a lot of luxury in life"), and happiness (e.g., My life would better if I owned certain things I don't have").

Richins and Dawson (1992) reported an alpha coefficient of .80 to .88 for the scale as a whole with the alphas for the subscales as follows: for success alpha ranged from .74 to .78, for centrality .71 to .75, and for happiness .73 to .83. They also note that there were low correlations with the Marlowe-Crowne scale of social desirability (-.12 for centrality, -.03 for happiness, -.06 for success, -.09 for the scale as a whole) and concluded that social desirability bias was not a problem for the material values scale. They also suggest that the summed scale scores, not three subscale scores, be used in research. This is due to the "latent variable" nature of the scale, meaning the three components are manifestations of the broader, underlying construct of materialism. In establishing construct validity through convergence with related constructs such as placing a high value on acquisition, self-centeredness, aversion to voluntary simplicity, and different kinds of dissatisfaction in life, they found that none of the individual factors related as well to these constructs as the summed score did (Richins & Dawson, 1992).

Right Wing Authoritarianism

To assess authoritarianism, I used a modified, ten question version of the Escala de Autoritarismo de Derechas (Seoane & Garzón, 1992) which is a Spanish language version of the Right Wing Authoritarianism (RWA) scale (Altemeyer, 1988). The

Spanish version of the RWA scale was based on the 30 item version of Altemeyer's scale. Seoane and Garzon used a 7 point Likert scale of pluses and minuses (representing strongly agree to strongly disagree) that I used as well. They tested their version on a sample of 120 university students. A coefficient alpha for this study was not reported. However, the measure has been used successfully in two samples in Argentina (D'Adamo, Garcia-Beaudoux & Ferrari, 1995; D'Adamo & Garcia-Beaudoux, 1996). I selected 12 items from the 30 item Spanish version that most closely matched the ten item English version used in Study 2. The 10 item English version used in Study 2 is not published as a scale but was based on a 20 item unpublished scale made available by Altemeyer (1998). Where exact matches in the Spanish version did not exist, I picked an item that most closely replicated the combination of the three features of RWA represented in the English item. The RWA construct reflects three components as discussed earlier: submission, dominance, and conventionalism. However, the measure of RWA is not broken into three subscales as Altemeyer contends that conceptually RWA is not just a sum of the three parts (Altemeyer, 1988). The questions are meant to represent how the three components function together. Coefficient alpha for the 12 item Spanish version scale in this sample is .74.

Gender Attitudes

Gender beliefs and attitudes were assessed in two ways. First, items were selected from the traditional gender roles and feminist attitudes subscales of the Sex Role Attitude Inventory or SRAI (Renzetti, 1987). The feminist attitudes subscale was dropped from analysis due to a lack of internal consistency. Due to space constraints and repetition of some of the concepts in the machismo scale, only 4 items from the attitudes towards traditional gender roles subscale were used. These remaining 4 items have an internal consistency of .62. While only moderate, this is an acceptable level, and these questions were retained since they reflect attitudes about gender roles in the public sphere (e.g., work and politics) whereas the machismo scale reflects attitudes about the private sphere (e.g., who has authority in a family and close relationships).

Second, selected items from the machismo subscale of the Multiphasic

Assessment of Cultural Constructs – short form (Cuéllar, Arnold, & González, 1995) were used. Machismo items that overlapped with items in the SRAI were dropped to avoid repetition, resulting in a 13 item scale. Cronbach's co-efficient alpha for this scale is .80, demonstrating high internal consistency. The SRAI public role items and Machismo scale items two were combined into one scale in order to create one traditional gender attitudes variable. This single scale has a Cronbach's alpha of .84.

Environmental Attitudes

The New Ecological Paradigm or NEP (Dunlap, et al. 2000) was used to assess environmental attitudes. This 15-item scale consists of three facets: belief that nature is balanced in complex ways and humans can upset this balance, resources are limited, and humans should not try to dominate nature. The NEP is not only about holding attitudes that support the environment or protection of the environment. Rather, it is focused on a person's basic conceptualization of the human relationship to the environment. The New Ecological Paradigm is one that is ecocentric, placing the needs of the environment at the center of one's concern or at least on equal level with human needs. This is in contrast to an anthropocentric paradigm where human needs are central and nature's needs are peripheral. An anthropocentric view is not necessarily anti-environmental but it is a more instrumental view of nature. A person can have pro-environmental attitudes and desire to protect the environment with their motivation being that nature should be protected since it fulfills a human need, not because it deserves protection in and of itself. As such, the NEP is not necessarily a measure of whether one holds pro-environmental attitudes or not but whether one has pro-environmental attitudes rooted primarily in an ecocentric worldview. Dunlap, et al. (2000) have suggested that while the scale is composed of different conceptual facets, it is a single scale and should be used that way. Dunlap, et al. recognize that other researchers have found 2-4 possible dimensions to the scale. Their own research has found up to four possible factors. However, they recommend using the NEP as a single scale based on their findings that 1) all 15 items load heavily on a single unrotated factor and demonstrate high internal consistency (alpha = .83) and 2) several items load heavily on multiple factors when the measure is analyzed using a principal components

analysis and varimax rotations. Using Cronbach's test for internal consistency, coefficient alpha is .64 for this sample, lower than the alpha of .83 the measure's authors have reported (Dunlap, et al. 2000).

Environmental Behaviors

Items were selected from an environmental behavior measure (Clayton, 2003). They covered 4 main categories: sustainable consumption (buying organic or growing own food, selecting products with minimal packaging), recycling, conservation (turning off lights, not letting the water run while washing dishes or brushing teeth), and political/organizational (voting for politicians based on environmental policies, belonging to environmental groups). Items were added or modified to reflect options for pro-environmental behaviors available in Buenos Aires. For example, there is not an official system of recycling in Buenos Aires but there is a highly organized system of scavenging for recyclable materials by groups of "cartoneros." This makes it difficult for an individual person to ensure that their waste will be recycled if they wanted to do so (e.g. there is no system of bins or drop-off points). However, a person can make an effort to separate their trash so it can be more easily gathered by cartoneros and more likely to enter the recycling stream and so a recycling item was modified to reflect this possibility. So, the original item was "Recycle (paper, cardboard, cans, phone books, etc.)" and was modified to read "Throw recyclables (e.g., paper, aluminum cans, bottles) in the trash (don't separate for cartoneros)." Six behaviors that negatively affect the environment were reverse coded and combined with 7 pro-environmental behaviors, resulting in a 13 item scale. Two items included in the questionnaire were dropped from analyses: one about driving one's own car whenever possible and one about taking public transportation. Eighty-seven participants indicated they did not have a car and so the question about driving one's own car was not applicable to about one third of the sample. This also most likely influenced likelihood of taking public transportation. Since these two behaviors were so heavily influenced by an outside limitation they were dropped from the analyses, leaving 11 items. Cronbach's alpha for this scale was .51. There was considerable range on the means and standard deviations of the remaining 11 items, so I standardized the scores for each item and used the mean of the standardized

scores to create the scale score. Cronbach's alpha for this scale using standardized scores was .56. While this alpha indicates only moderate internal consistency of this measure, behavioral measures of this sort—in which few individuals engage in all of the behaviors—are not expected to have particularly high internal consistency.

Taken together, the measures described above were used to test the proposed hypotheses. Figure 2.1, below, outlines which measures were used for each test.

Figure 2.1 Buenos Aires Study of Materialism, hypotheses and measures

<u>Hypotheses</u> (<i>constructs are italicized</i>)	<u>Measures</u>
<i>Materialistic values</i> and <i>right wing authoritarianism</i> and will be positively correlated.	Material Values Scale (MVS), Right Wing Authoritarianism Scale (RWA)
People high in <i>materialistic values</i> will have lower levels of <i>ecocentric attitudes</i> than people low in materialistic values.	MVS, New Ecological Paradigm (NEP)
People high in <i>materialistic values</i> will have higher levels of endorsement of <i>traditional gender attitudes</i> than people low in materialistic values.	MVS, Sex Role Attitudes Inventory (public role items), Machismo scale
People high in <i>right-wing authoritarianism</i> will have lower levels of <i>ecocentric attitudes</i> than people low in materialistic values.	RWA, NEP
People high in <i>right-wing authoritarianism</i> will have higher levels of endorsement of <i>traditional gender attitudes</i> than people low in right-wing authoritarianism.	RWA, Sex Role Attitudes Inventory (public role items), Machismo scale
<i>Right wing authoritarianism</i> will partially mediate the relationship between <i>materialistic values</i> and endorsement of <i>traditional gender attitudes</i> and <i>ecocentric attitudes</i> .	RWA, MVS, Sex Role Attitudes Inventory (public role items), Machismo scale, NEP
People high in <i>traditional gender attitudes</i> will be low in <i>ecocentric attitudes</i> .	Sex Role Attitudes Inventory (public role items), Machismo scale, NEP
People high in <i>materialistic values</i> will have lower levels of involvement in <i>pro-environmental activities</i> than people high in materialistic values.	MVS, Environmental behaviors measure
People high in <i>ecocentric attitudes</i> will have higher levels of involvement in <i>pro-environmental activities</i> than people low in ecocentric attitudes.	NEP, Environmental behaviors measure
 <u>Analysis Strategy</u>	

First, descriptive statistics were calculated, including mean scores, standard deviations, and variance for the measures described above. Tests for normal distribution

using normal probability plots were also conducted. Given that the data were distributed normally, tests for linear, correlation relationships were run. I assessed the correlation relationships between 1) materialistic values and right wing authoritarianism, materialistic values and traditional gender attitudes and ecocentric attitudes, 2) right wing authoritarianism and traditional gender attitudes and ecocentric attitudes, and 3) ecocentric attitudes and environmental behaviors. Since I proposed that right wing authoritarianism fully or partially mediated the relationship between materialistic values and traditional gender attitudes and ecocentric attitudes, multiple regressions were run to test for mediation. Finally, to assess possible class and gender effects, all analyses were run separately for a lower and higher education group and for women and men. I conducted tests for differences between the mean scores and correlations between these groups. Figure 2.2 outlines the statistical tests that were used for each hypothesis.

Figure 2.2 Plan of Analysis for Buenos Aires Study of Materialism

<u>Interest:</u>	<u>Statistical Approach:</u>
Relationships between MVS, RWA, traditional gender attitudes, and NEP.	Bi-variate correlations (Spearman r)
Relationships between MVS, NEP and involvement in environmentalist activity.	Bi-variate correlations (Spearman r)
The role of RWA as mediating the relationships between MVS and traditional gender attitudes and NEP.	Multiple regression (or partial correlations)
Mean differences among class and gender groups on MVS, RWA, NEP, traditional gender attitudes, and environmental behaviors.	T-tests (gender) and one-way ANOVA (class)
Class and gender effects on relationships, between variables of interest.	Bi-variate correlations, separately for each class group and for each relationship outlined above. To test the mediation model, multiple regression.

Study 2: Radcliffe Class of 1964

Participants

Participants in the second study were 105 women who have participated in the Radcliffe College Class of 1964 longitudinal study (Stewart, 1974, 1978, 1980; Stewart & Salt, 1981; Stewart & Vandewater, 1993). This study began in 1964 with 244 participants (see, Winter, McClelland & Stewart, 1981) and has continued with periodic assessments, recently about once a decade. I will be analyzing data from the most recent wave of data collection, a questionnaire assessment in 2005; it is the seventh they have completed since the study began. Participation across all waves has ranged from 103 (in 1986) to 133 (in 1979). Previous analyses have not indicated systematic differences between the Radcliffe Class of 1964 respondents and non-respondents either within a particular wave of data collection or over time (Stewart & Vandewater, 1993). I conducted analyses comparing those who responded to the 2005 questionnaire with those who did not and did not find any significant differences between respondents and non-respondents on major demographic variables (e.g., income, marital status, highest level of education).

In 2005, the average participant age was 62 years. Virtually all the women in this sample were of white European background. Data on highest level of education achieved was last collected in 1996, indicating this is a highly educated group where 80% of the respondents had a post-graduate degree (47% had a doctorate (e.g., MD, JD, or Ph.D.), 33%, had a master's degree). This was also a relatively wealthy sample. In 2005, 6% reported a monthly household income of less than \$40,000, 28% between \$40,000 and \$100,000, 30% between \$100,000 and \$200,000 and 22% over \$200,000. At the time of assessment, this cohort was approaching retirement age and 26% had already retired. The majority was still involved in some kind of employment; 52% had a salaried position and 44% were self-employed (some participants were involved in both kinds of work).

In the 2005 sample, 8% of the participants had never been married, 47% had been divorced at least once, and 61% were currently married. Three percent of the women reported that their partner was a female. A table outlining some of the

demographics of this sample as they compare to the sample used in Study 1 can be found in Appendix A.

Study Design

In this study, I used data collected in the 2005 questionnaire that included open ended and closed ended questions on several topics, including the kinds of activities they were involved in, what was important to them, and assessments of personality and various attitudes.

Participants were contacted first via e-mail; however, if an e-mail address was not available, they were contacted by postal letter. In the e-mail, members of the class of 1964 were asked to participate and provided with an electronic link to an online version of the survey. The postal version of the letter included a paper survey as well as an electronic link address. Participants contacted by both methods were informed that they could take the survey either online or using a paper hardcopy.

Two months after the original mailing, the women who had not yet participated were sent reminders. Again, e-mail was utilized whenever possible for these follow-up contacts. Three months after that reminder, the women who had not yet participated were called and reminded of the survey and asked if they would like any assistance or if they had any concerns about the survey. Of the women who participated, 57% used paper and pencil whereas 43% took the survey online. One hundred and five participants out of the 233 contacted completed the questionnaire, yielding a 45% response rate.

Measures

Materialistic Values

The Material Values Scale (MVS) (Richins & Dawson, 1992) described in Study 1 was also used in Study 2, though it was reduced from 18 to 13 items due to space constraints. Two items each were dropped from the success and centrality subscales, and one item was dropped from the happiness subscale. The items dropped were those that loaded least strongly on to their respective factors, according to the

factor loadings reported by the scale's creators in Richins & Dawson, 1992. After the Radcliffe 2005 questionnaire was created, I became aware of a shortened version of the MVS (Richins, Mick, & Monroe, 2004). The shortened form consists of 15 items; 12 of the 13 items used in the Radcliffe 2005 questionnaire are part of that 15 item scale. Only one centrality subscale item, "I usually only buy the things I need," was not included in Richins' shortened form but was included in the Radcliffe questionnaire. Internal consistency of the overall scale, as measured by Cronbach's alpha, was .76.

Right Wing Authoritarianism

As in Study 1, Right Wing Authoritarianism (RWA) was assessed using a 10 item scale that was derived from an unpublished, 20 item version (Altemeyer, 1998) that in turn was derived from Altemeyer's 30 item scale. In this sample, the 10 item scale had a reliability of alpha = .8.

Gender Attitudes

The Intersectional Consciousness subscale of the Feminist Intersectional Consciousness measure (Greenwood, 2005) assesses a person's "awareness of multiple grounds of identity when considering how the social world is constructed when deciding what collective goals to pursue, and when selecting the appropriate means for pursuing those goals" (Greenwood, 2005, p. 4). This is a useful, if not ideal, measure of feminist attitudes for two reasons. First, the existence of sexism as a social problem is assumed in the content of the items. For example, one item reads, "In order to achieve the changes we seek, we must fight racism as well as sexism." Second, as Zucker (1998) has argued, thinking "structurally" about one's identity and place in society as a woman might enable a person to think similarly about other marginalized identity groups (p 97). Zucker found that women she interviewed who had high levels of feminist consciousness had higher levels of race related consciousness than those who were non-feminists or egalitarians (women who supported reported moderate levels of feminist consciousness but resisted being labeled as feminists) (Zucker, 1998). Being a feminist and supporting non-traditional gender attitudes does not necessarily mean a person will endorse an "intersectional consciousness." However, it would be difficult to

have an intersectional consciousness and not endorse feminist attitudes, especially given the content of the items in this measure. The 5 items of the Intersectional Consciousness scale are listed in Appendix C. The Intersectional Consciousness subscale in the Radcliffe sample demonstrated good internal consistency ($\alpha = .82$), higher than Greenwood's (2005) results ($\alpha = .74$).

Environmental attitudes

An abbreviated, 11 item version of the 15 item The New Ecological Paradigm (NEP) (Dunlap, et al., 2000) described in Study 1 was used in Study 2. One "limits" item and all three "eco-crisis" items were dropped. Dunlap and colleagues (2000) reported an alpha co-efficient of .83 for the 15 item scale; co-efficient alpha for the Radcliffe sample was .81.

Environmental Activism

A checklist was used to assess participants' involvement in several political activities over the past 9 years, including the environmental movement. This checklist is a modified version of Fendrich and Lovoy's (1988) multi-dimensional measure of political behavior. Activities covered a wide range of levels of involvement, from activities that required a little effort or one time involvement to activities that required more effort, time, or public commitment. Specifically, these activities are signed a petition, donated money to an organization, wrote a letter or called a public office, attended a meeting, was an active member of an organization, and attended a rally or demonstration. Participants were asked to check the activities they engaged in for each of the 16 political causes listed. Thus, this is a measure of whether a person ever engaged in an activity; it is not a measure of frequency of involvement (i.e., a check could indicate that a person signed one petition or that she signed ten petitions). Political involvements in environmentalism were analyzed as a scale of 0-6, with involvement in any activity having a value of 1. Involvements were also analyzed as categorical variables to identify differences in mean scale scores that might vary by type of involvement.

Taken together, the measures described above were used to test the proposed hypotheses. Figure 2.3 outlines which measures were used for each test.

Figure 2.3 Radcliffe Class of 1964 Study, hypotheses and measures

<u>Hypotheses</u> (<i>constructs are italicized</i>)	<u>Measures</u>
<i>Materialistic values</i> and <i>right wing authoritarianism</i> and will be positively correlated.	Material Values Scale (MVS), Right Wing Authoritarianism Scale (RWA)
People low in <i>materialistic values</i> will have higher levels of <i>ecocentric attitudes</i> than people high in materialistic values.	MVS, New Ecological Paradigm (NEP)
People high in <i>materialistic values</i> will have lower levels of endorsement of <i>intersectional consciousness</i> than people low in materialistic values.	MVS, Intersectional Consciousness Scale (IC)
People high in <i>right-wing authoritarianism</i> will have lower levels of <i>ecocentric attitudes</i> than people low in materialistic values.	RWA, NEP
People high in <i>right-wing authoritarianism</i> will have lower levels of endorsement of <i>feminist attitudes</i> than people low in right-wing authoritarianism.	RWA, IC
<i>Right wing authoritarianism</i> will partially mediate the relationship between <i>materialistic values</i> and endorsement of <i>intersectional consciousness</i> and <i>ecocentric attitudes</i> .	RWA, MVS, IC, NEP
People high in <i>feminist attitudes</i> will be high in <i>ecocentric attitudes</i> .	IC, NEP
People high in <i>materialistic values</i> will have lower levels of involvement in <i>pro-environmental activities</i> than people high in materialistic values.	MVS, Political participation in environmentalism checklist
People high in <i>ecocentric attitudes</i> will have higher levels of involvement in <i>pro-environmental activities</i> than people low in ecocentric attitudes.	NEP, Political participation in environmentalism checklist

Analysis Strategy

As in Study 1, descriptive statistics were calculated, including mean scores, standard deviations, and variance for the measures described above. Tests for normal

distribution using normal probability plots were also conducted. Since the data were distributed normally, tests for linear, correlations were run. I assessed the correlations between 1) materialistic values and right wing authoritarianism, 2) materialistic values and intersectional consciousness and ecocentric attitudes 3) right wing authoritarianism and intersectional consciousness and ecocentric attitudes, 4) materialistic values and environmental behaviors, and 5) ecocentric attitudes and environmental behaviors. Since I proposed that right wing authoritarianism fully or partially mediates the relationship between materialistic values and intersectional consciousness and ecocentric attitudes, multiple regressions were run to test for mediation. Environmental behaviors were looked at individually and t-tests were run to see if there were differences in attitudes between those who engaged in a behavior versus those who did not. Finally, to assess possible class differences, all analyses were run separately for a lower and higher income group. I conducted tests for differences between the mean scores and correlations between these groups. Figure 2.4 lists the statistical tests that were used for each hypothesis.

Figure 2.4 Plan of Analysis for Radcliffe Class of 1964 Study

<u>Interest:</u>	<u>Statistical Approach:</u>
Relationships between MVS, RWA, Intersectional Consciousness (IC) and NEP.	Bi-variate correlations (Spearman r)
Relationships between MVS, NEP, and involvement in environmentalist activity.	Bi-variate correlations (Spearman r)
Mean differences among groups based on involvement in an environmental activity on MVS, RWA, IC, and NEP.	T-tests
The role of RWA as mediating the relationships between MVS and IC and NEP.	Multiple regression (or partial correlations)

CHAPTER III

Results

Overview of results

In this chapter, I present the results of the analyses examining the relationships among material values, authoritarianism, attitudes towards gender, ecocentric attitudes and pro-environmental behaviors in the Buenos Aires Study of Materialism. I will first present the correlation matrix of the key variables of interest (Table 3.2). This is followed by the results of multivariate regression analyses conducted to test for mediating relationships (Figure 3.1). Next, correlations between the individual pro-environmental behaviors with attitudinal variables are presented. To further explore these attitude and behavior analyses for the group as a whole, analyses tested for the effects of gender and class. Correlation and regression results are first presented separately by gender and then separately by class group.

Following the Buenos Aires study results, I will present the results of Radcliffe Class of 1964 study. This presentation will follow a similar pattern as the Buenos Aires study, consisting first of the correlations among the key variables, then multivariate regressions to test for mediating relationships, if appropriate.

Buenos Aires Study

To address hypotheses one, two, and three, bi-variate correlation tests were conducted. To better understand these correlations, Table 3.1 lists the means and standard deviations for material values, right wing authoritarianism, traditional gender attitudes, ecocentric attitudes and environmental behaviors, followed by Table 3.2 that lists the correlations among these key variables. There were several significant

correlations in the expected directions. As hypothesized, material values were positively correlated with right wing authoritarianism. Also as hypothesized, material values were positively correlated with traditional gender attitudes and negatively correlated with ecocentric attitudes. Thus, hypotheses 1, 2, and 3 are supported.

In line with earlier findings in the literature, right wing authoritarianism was positively correlated with traditional gender attitudes and negatively correlated with ecocentric attitudes. RWA was not correlated with environmental behavior. T-tests comparing the strength of correlations between MVS and gender and ecocentric attitudes with the correlations between RWA and those same attitudes revealed that there were significant differences in correlation co-efficients. The correlation between RWA and gender attitudes was significantly higher than MVS and gender attitudes ($z = -2.49, p = .01$). Similarly, RWA was more highly correlated with ecocentric attitudes than MVS was ($z = 2.4, p = .02$). Hypotheses were not generated about the relationship between traditional gender attitudes and ecocentric attitudes but they were, in fact, negatively correlated with each other.

Table 3.1 Buenos Aires Study: Descriptive Statistics of Key Variables, All Participants (n=240)

Measure*	Mean	Standard Deviation
Material Values Scale	3.51	.83
Right Wing Authoritarianism	3.53	.85
Traditional Gender Attitudes	2.83	.86
New Ecological Paradigm	4.77	.70
Pro-environmental behavior scale	1.36	.50

**Adjusted 6 point scale used for MVS, RWA, TGA, and NEP. 5 point scale used for Environmental Behaviors.*

Table 3.2 Buenos Aires Study: Relationships Between Key Variables, All Participants (n=240)

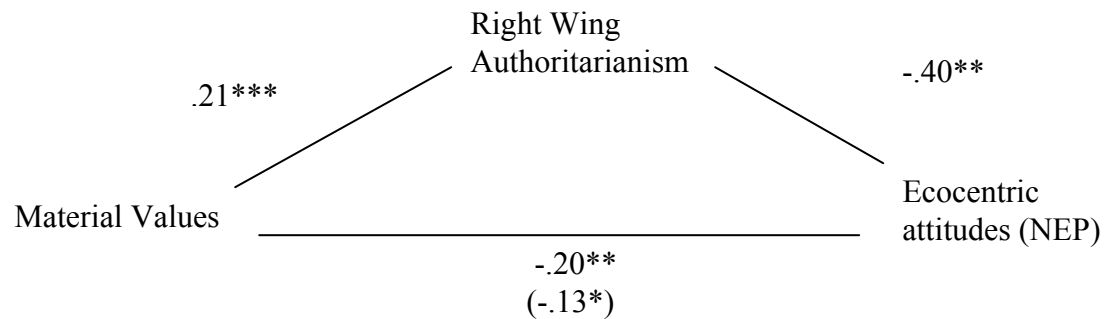
Measure	MVS	RWA	TGA	NEP
Materialistic Values (MVS)	---			
Authoritarianism (RWA)	.21***	---		
Traditional Gender Attitudes (TGA)	.31***	.50***	---	
Ecocentric Attitudes (NEP)	-.20***	-.35***	-.30***	---
Pro-environmental behaviors scale	-.20**	.03	-.08	.06

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Since all of the attitudinal variables showed significant relationships with each other, it was possible to test the hypothesis that authoritarianism was mediating the relationship between material values and attitudes towards the environment and gender. This test was done by conducting multiple regressions. The first regression shows that there is a significant negative relationship between material values and the dependent variable, both ecocentric attitudes and traditional gender attitudes. Next, authoritarianism was added to the model and the beta weight between the IV and DV was reassessed. If the beta weight between the IV and DV decreases when the mediator is added to the model, this is evidence for a mediation effect, i.e. the mediator is accounting for some or all of the indirect effect of the IV on the DV. As a final step, a Sobel test was run to see whether the indirect effect of material values on the dependent variable via authoritarianism was significantly different from zero.

Conducting these analyses on material values, authoritarianism, and ecocentric attitudes, we see the beta weight did indeed drop when authoritarianism was added to the model (see, Figure 3.1). A Sobel test confirms that this finding is significant. However, the relationship between material values and ecocentric attitudes remained significant, suggesting that authoritarianism is only partially mediating the relationship.

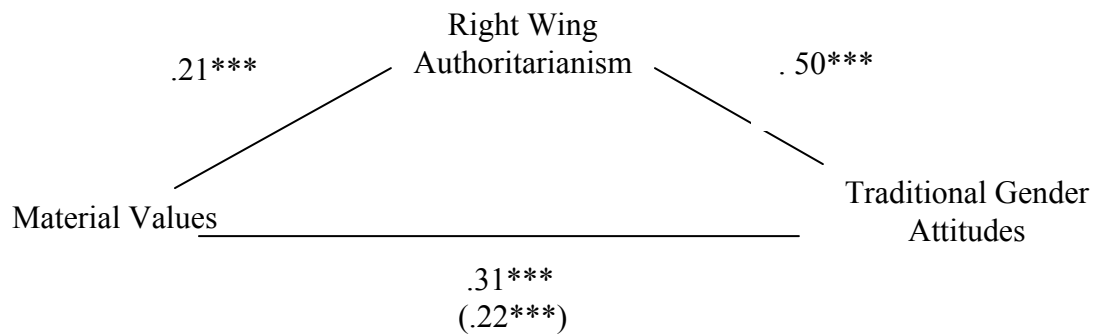
Figure 3.1 Buenos Aires Study: Summary of Regression Analysis to Examine Role of RWA as Mediating the Relationship of MVS with NEP, All Participants (n=240)



Sobel $z = -2.72$
 $p = 0.007$

Multiple regressions were then conducted with traditional gender attitudes as the dependent variable. The beta weight signifying the relationship between material values and traditional gender values dropped when authoritarianism was added to the regression model (see, Figure 3.2). The Sobel test results confirm that the mediation effect is significant. As with ecocentric attitudes, results suggest partial mediation. However, since the relationship remains significant, the mediation is only modest in accounting for the relationship between material values and traditional gender attitudes.

Figure 3.2 Buenos Aires Study: Summary of Regression Analysis to Examine Role of RWA as Mediating the Relationship of MVS with Traditional Gender Attitudes, All Participants (n=240)



Sobel $z = 2.91$
 $p = 0.004$

Addressing the fifth hypothesis, correlation analyses were conducted to identify relationships between pro-environmental behaviors and ecocentric attitudes. Table 3.3 shows that ecocentric attitudes were positively correlated with taking public transportation only.

While hypotheses were not formulated concerning the relationships of environmental behaviors to other attitude variables, it is worth noting that material values were negatively correlated with throwing trash in the street (reversed) ($r = -.19$, $p = .005$), voting for politicians based on environmental policies ($r = -.14$, $p = .04$), and the pro-environmental behavior scale ($r = -.2$, $p = .004$). Authoritarianism was correlated negatively with throwing trash in the street (reversed) ($r = -.14$, $p = .03$), buying or growing organic food ($r = .16$, $p = .02$), and buying items with minimal packaging ($r = .15$, $p = .03$). Traditional gender attitudes were correlated negatively with throwing trash in the street (reversed) ($r = -.21$, $p = .001$). This indicates that the reason someone does not throw trash in the street might not be related to environmental concerns. It could be related to concerns about propriety or lawfulness since it's negatively related to material values, authoritarianism and traditional gender attitudes. However, this logic does not

account for why authoritarianism is positively correlated with buying or growing organic food and buying items with minimal packaging.

Table 3.3 Buenos Aires Study: Descriptive Statistics of Specific Pro-Environmental Behaviors, All Participants

Measure*	Mean	Standard Deviation	N
Throw trash in street**	2.81	1.26	234
Buy used things (e.g., clothes and furniture)	.72	1.06	229
Get new disposable bags when shopping**	2.46	1.59	212
Buy organic or grow own food	.64	1.02	231
Use aerosol products**	2.10	1.34	231
Buy products with minimal packaging	1.16	1.27	223
Participate in local environmental groups	.39	.92	232
Vote based on environmental policies	.69	1.06	226
Drive own car whenever possible**	1.69	1.66	134
Donate money to environmental groups	.29	.76	227
Take public transportation whenever possible	2.69	1.53	231
Let water run (e.g., when brushing teeth)**	2.03	1.46	233
Throw recyclables in garbage**	1.64	1.56	232
Pro-environmental scale (excludes transportation items)	1.36	.50	234

* 5 point Likert scale used, 0 = "never do this" to 4 = "always do this"

** indicates a reversed item.

Table 3.4 Buenos Aires Study: Relationships Between NEP Score and Specific Environmental Behaviors, All Participants

Environmental behavior	Correlation	N
Throw trash in street	-.10	233
Buy used things (e.g., clothes and furniture)	-.05	228
Get new disposable bags when shopping	.03	211
Buy organic or grow own food	.08	230
Use aerosol products	.02	230
Buy products with minimal packaging	-.08	222
Participate in local environmental groups	-.00	231
Vote based on environmental policies	.01	225
Drive own car whenever possible	.01	133
Donate money to environmental groups	-.10	226
Take public transportation whenever possible	.13*	230
Let water run (e.g., when brushing teeth)	-.12	232
Throw recyclables in garbage	.01	231
Pro-environmental behavior scale (excludes transportation items)	.06	233

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

The effect of gender and class

To see if there are gender and class-based effects on the relationships among these attitudes and behaviors, the same analyses described above were conducted separately for each gender and class group. The results for the gender-based analyses will be presented first, followed by the class-based analyses. Testing for differences between the mean scores of women and men on the variables of interest (material values, right wing authoritarianism, ecocentric attitudes, traditional gender attitudes and environmental behaviors), t-tests showed one significant difference. Men had a higher mean score on traditional gender attitudes ($t = 4.29$, $p = .000$, mean difference = .547) than women. Table 3.5 summarizes the mean scores and standard deviations for women and men.

Table 3.5 Buenos Aires Study: Descriptive Statistics of Key Variables, Women (n=142) and Men (n=97)

Measure	Women		Men	
	Mean	Standard Deviation	Mean	Standard Deviation
Material Values Scale	3.47	.81	3.60	.87
Right Wing Authoritarianism	3.52	.86	3.58	.84
Traditional Gender Attitudes	3.09	.92	3.63	1.02
New Ecological Paradigm	4.82	.65	4.72	.77
Pro-environmental behaviors	1.38	.48	1.33	.53

I conducted tests for differences between the correlation coefficients for women and men for the relationships among the key variables and between ecocentric attitudes and environmental behaviors. No significant differences based on gender were found.

Next, I will present the results of correlation and regression analyses performed separately for women and men.

Analyses of women as a group

Within the group of women who participated in the Buenos Aires Study (n = 142), material values were positively correlated with traditional gender attitudes and negatively correlated with ecocentric attitudes and pro-environmental behaviors. Right wing authoritarianism was positively correlated with traditional gender attitudes and negatively correlated with ecocentric attitudes. Traditional gender attitudes were negatively correlated with ecocentric attitudes. There was not a significant relationship between material values and right wing authoritarianism nor was there a relationship between ecocentric attitudes and pro-environmental behaviors. Table 3.6 summarizes the correlation results below.

Table 3.6 Buenos Aires Study: Relationships Among Key Variables, Women Only (n=142)

Measure	MVS	RWA	TGA	NEP
Materialistic Values (MVS)	--			
Authoritarianism (RWA)	.16	--		
Traditional Gender Attitudes (TGA)	.30***	.51***	--	
Ecocentric Attitudes (NEP)	-.19*	-.32**	-.26***	--
Pro-environmental behaviors	-.20**	.09	-.09	.09

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Since there was not a significant relationship between material values and authoritarianism, authoritarianism cannot mediate the relationship between material values and ecocentric attitudes or traditional gender attitudes. Therefore, tests for mediation were not conducted.

Correlation analyses were run between ecocentric attitudes and each pro-environmental behavior to see if there were any patterns in behavior that were obscured when they were all considered together. There was only one significant correlation of

ecocentric attitudes with buying organic food or growing one's own. See Table 3.7 below.

Table 3.7 Buenos Aires Study: Relationships Between NEP Score and Specific Environmental Behaviors, Women Only

Environmental behavior	Correlation	N
Pro-environmental behavior scale (excludes transportation items)	.09	139
Throw trash in street	-.10	139
Buy used things (e.g., clothes and furniture)	-.03	136
Get new disposable bags when shopping	-.04	123
Buy organic or grow own food	.17*	137
Use aerosol products	-.11	139
Buy products with minimal packaging	-.02	128
Participate in local environmental groups	.05	138
Vote based on environmental policies	.07	133
Drive own car whenever possible	.13	73
Donate money to environmental groups	.05	133
Take public transportation whenever possible	.07	136
Let water run (e.g., when brushing teeth)	-.07	138
Throw recyclables in garbage	.08	138

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Analyses of men as a group

Within the group of men who participated in the Buenos Aires Study (n=97), there was a significant, positive correlation between material values and right wing

authoritarianism. Material values were positively correlated with traditional gender attitudes and negatively correlated with ecocentric attitudes. Right wing authoritarianism was positively correlated with traditional gender attitudes and negatively correlated with ecocentric attitudes. Traditional gender attitudes were negatively correlated with ecocentric attitudes.

Looking at the measures of behavior, there is no significant relationship between material values and the pro-environmental behavior scale. Table 3.8 below provides a summary of these correlation results. Since the correlation coefficients were different for women and men, I performed tests for significant differences between the correlations. No significant differences in levels of correlations were found.

Table 3.8 Buenos Aires Study: Correlation Matrix of Scale Scores, Men Only (n=97)

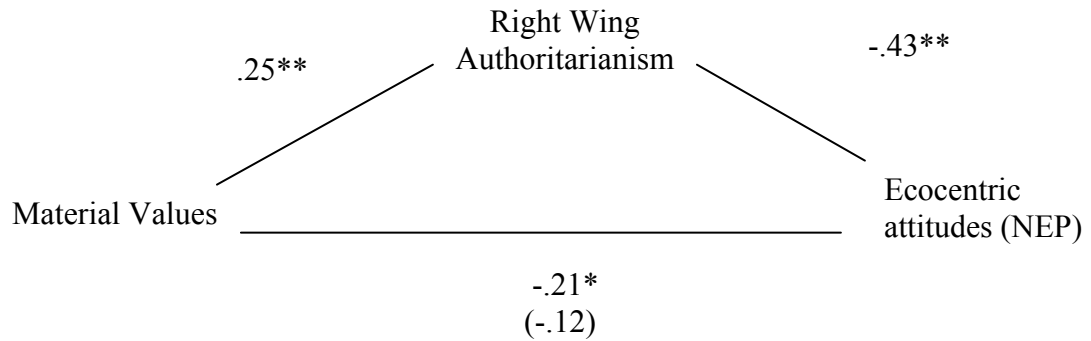
Measure	MVS	RWA	TGA	NEP
Materialistic Values (MVS)	---			
Authoritarianism (RWA)	.25**	---		
Traditional Gender Attitudes (TGA)	.28**	.49***	---	
Ecocentric Attitudes (NEP)	-.21*	-.43***	-.34**	---
Pro-environmental behaviors	-.17	-.05	-.05	.03

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Within men as a group, all of the attitudinal variables showed significant relationships with each other and so it was possible to test the hypothesis that authoritarianism was mediating the relationship between material values and attitudes towards the environment and gender. This test was done by conducting multiple regressions. First, conducting these analyses on material values, authoritarianism, and ecocentric attitudes, we see the beta weight did drop and the relationship between material values and ecocentric attitudes was no longer significant when authoritarianism

was added to the model (see, Figure 3.3), suggesting partial mediation. A Sobel test confirms that this finding is significant.

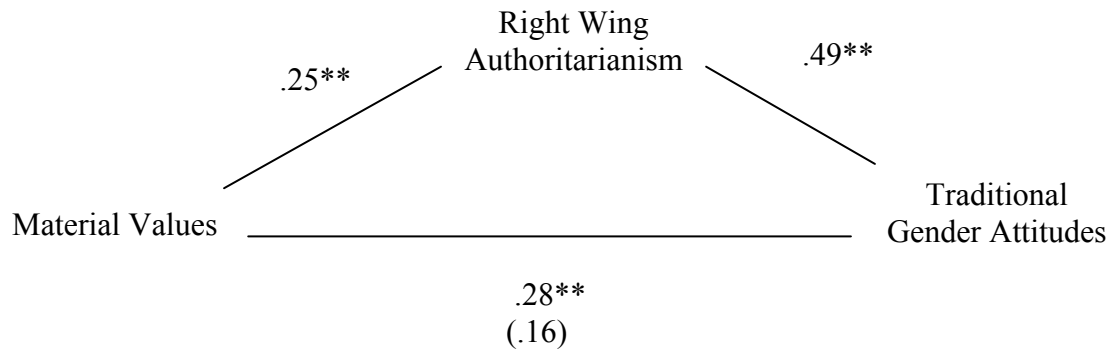
Figure 3.3 Buenos Aires Study: Summary of Regression Analysis to Examine Role of RWA as Mediating the Relationship of MVS with Ecocentric Attitudes, Men Only (n=97)



Sobel $z = -2.15$
 $p = 0.03$

Second, when right wing authoritarianism is included in the regression as an independent variable predicting traditional gender attitudes, the relationship between material values and traditional gender attitudes is no longer significant. A Sobel test confirms that this finding is significant. See Figure 3.4 below. This suggests that right wing authoritarianism partially mediates this relationship.

Figure 3.4 Buenos Aires Study: Summary of Regression Analysis to Examine Role of RWA as Mediating the Relationship of MVS with Traditional Gender Attitudes, Men Only (n=97)



Sobel $z = 2.23$
 $p = 0.03$

As I did in the analyses of women, I ran correlations between ecocentric attitudes and each of the environmental behaviors to see if there were any behavioral patterns that were not identified by looking at the behaviors as a scale. None of the individual behaviors were significantly correlated with ecocentric attitudes. For a summary of the coefficients, see Table 3.9 below.

Table 3.9 Buenos Aires Study: Relationships Between NEP Score and Specific Environmental Behaviors, Men Only

Environmental behavior	Correlation	N
Pro-environmental behavior scale (excludes transportation items)	.03	94
Throw trash in street	-.09	94
Buy used things (e.g., clothes and furniture)	-.08	92
Get new disposable bags when shopping	.10	88
Buy organic or grow own food	-.04	93
Use aerosol products	-.02	91
Buy products with minimal packaging	.05	94
Participate in local environmental groups	-.05	93
Vote based on environmental policies	-.06	92
Drive own car whenever possible	-.12	60
Donate money to environmental groups	-.06	93
Take public transportation whenever possible	.18	94
Let water run (e.g., when brushing teeth)	-.17	94
Throw recyclables in garbage	-.08	93

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Class

Education was used as a proxy for social class. Table 3.10 below provides a summary of the descriptive statistics for the key variables for both groups. I conducted t-tests to identify differences between the means of two education groups (those who do

not have a university education and those who do have a university education) on the variables of interest (material values, right wing authoritarianism, ecocentric attitudes, traditional gender attitudes and environmental behaviors). These analyses showed two significant differences. Participants who do not have a university education (n = 109) have a higher mean score on traditional gender attitudes (t = 3.87, p = .000, mean difference = .50, df = 230) and right wing authoritarianism (t = 4.92, p = .000, mean difference = .52, df = 227) than those who do have a university education (n = 124).

Table 3.10 Buenos Aires Study: Descriptive Statistics of Key Variables, Participants who do not have a University Education Only (n = 109)

Measure	Mean	Standard Deviation
Material Values Scale	3.09	.69
Right Wing Authoritarianism	3.27	.67
Traditional Gender Attitudes	3.06	.87
New Ecological Paradigm	4.04	.56
Pro-environmental behaviors	1.35	.50

Table 3.11 Buenos Aires Study: Descriptive Statistics of Key Variables, Participants with a University Education Only (n=124)

Measure	Mean	Standard Deviation
Material Values Scale	2.93	.73
Right Wing Authoritarianism	2.82	.70
Traditional Gender Attitudes	2.63	.81
New Ecological Paradigm	4.12	.64
Pro-environmental behaviors	1.34	.50

I conducted bi-variate correlation tests on the key variables for each education group. See Tables 3.12 and 3.13 for summaries of the correlation results.

Participants who do not have a university education

Within the group of participants who do not have a university education (n=109), there is a significant, positive correlation of material values with traditional gender attitudes and a negative correlation with ecocentric attitudes. Right wing authoritarianism is positively correlated with traditional gender attitudes and negatively correlated with ecocentric attitudes. Traditional gender attitudes are negatively correlated with ecocentric attitudes.

As expected, material values are negatively correlated with pro-environmental behaviors. However, there is no relationship between material values and right wing authoritarianism, which means authoritarianism cannot act as a mediator between material values and gender and environmental attitudes.

Table 3.12 Buenos Aires Study: Relationships Among Key Variables, Participants Who Do Not Have a University Education Only (n=109)

Measure	MVS	RWA	TGA	NEP
Materialistic Values (MVS)	---			
Authoritarianism (RWA)	.14	---		
Traditional Gender Attitudes (TGA)	.31***	.34***	---	
Ecocentric Attitudes (NEP)	-.25**	-.31**	-.26**	---
Pro-environmental behaviors	-.20*	.11	-.04	-.15

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Participants who have a university education

Within the group of participants who have a university education (n=124), there is a significant, positive correlation of material values with traditional gender attitudes and with right wing authoritarianism. There is a significant negative correlation of material values with ecocentric attitudes and with pro-environmental behaviors. Right wing authoritarianism is positively correlated with traditional gender attitudes and negatively correlated with ecocentric attitudes. Traditional gender attitudes are negatively correlated with ecocentric attitudes. Ecocentric attitudes are positively correlated with pro-environmental behaviors.

Table 3.13 Buenos Aires Study: Relationships Among Key Variables, Participants Who Have a University Education Only (n=124)

Measure	MVS	RWA	TGA	NEP
Materialistic Values (MVS)	---			
Authoritarianism (RWA)	.23**	---		
Traditional Gender Attitudes (TGA)	.29***	.55***	---	
Ecocentric Attitudes (NEP)	-.20*	-.40***	-.34***	---
Pro-environmental behaviors	-.23**	-.08	-.16	.23**

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Two correlation coefficients were significantly different from each other in these two education groups: authoritarianism and traditional gender attitudes ($z = 1.99$, $p = .05$), and ecocentric attitudes and the environmental behaviors scale ($z = -2.9$, $p = .004$).

I also investigated the role of class by including education in regressions where a significant relationship had already been identified. None of the relationships were affected when education was included as a variable in the model. I also controlled for monthly household income (using regressions) and there was one significant finding. In a model where material values and authoritarianism predicted ecocentric attitudes, the significance of material values dropped from statistically significant to a trend when income was included in the regression. Next, within group differences were explored.

Participants who do not have a university education

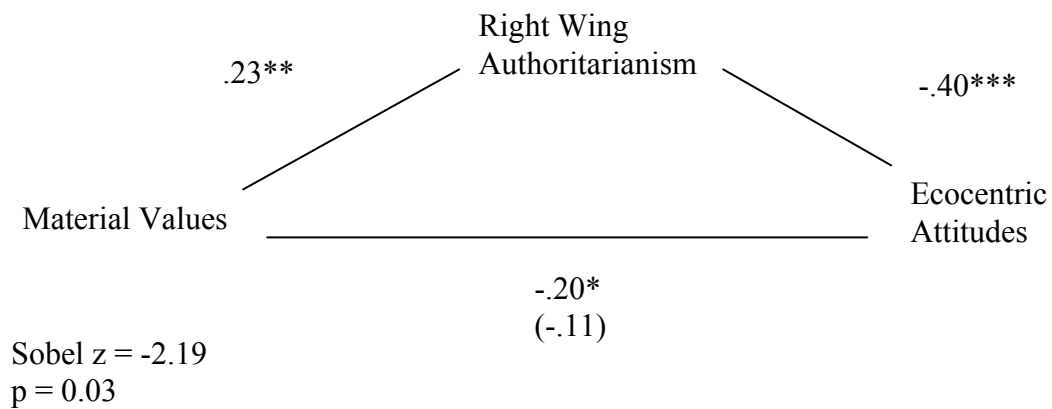
There is not a significant relationship between MVS and RWA in the subsample that does not have a university education. Therefore, RWA cannot act as a mediator in the relationship between MVS and NEP nor between MVS and traditional gender attitudes. Tests for mediation were not conducted. The lack of relationship between MVS and RWA in the non-university educated group prompted me to look at a

possible gender difference in education level. There is a significant difference in education, with more women having at least some university education than men ($\chi^2 = 7.96, p = .005$).

Participants who have a university education

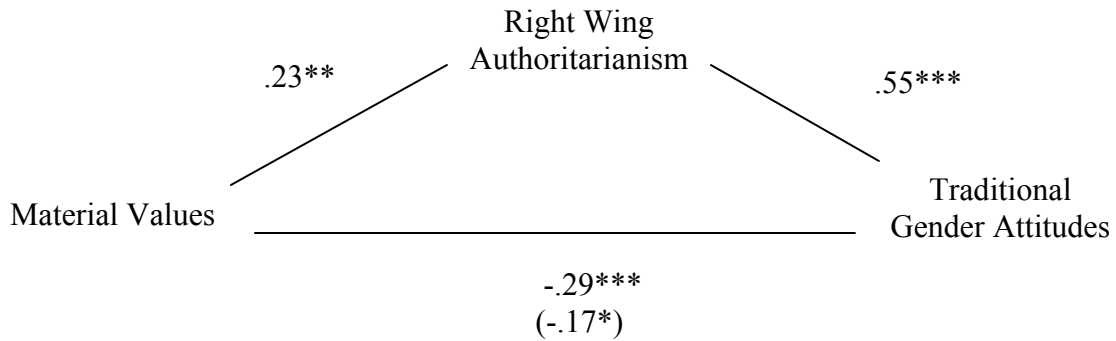
When right wing authoritarianism is included in the regression as an independent variable predicting ecocentric attitudes, the relationship between material values and ecocentric attitudes is no longer significant. This suggests that right wing authoritarianism fully mediates this relationship.

Figure 3.5 Buenos Aires Study: Summary of Regression Analysis to Examine Role of RWA as Mediating the Relationship of MVS with Ecocentric Attitudes, Participants Who Have a University Education



When right wing authoritarianism is included in the regression as an independent variable predicting traditional gender attitudes, the relationship between material values and traditional gender attitudes is still significant but is reduced. This suggests that right wing authoritarianism partially mediates this relationship.

Figure 3.6 Buenos Aires Study: Summary of Regression Analysis to Examine Role of RWA as Mediating the Relationship of MVS with Traditional Gender Attitudes, Participants Who Have a University Education



Sobel $z = 2.39$
 $P = 0.02$

Material values as a mediator?

While regression analyses were conducted to test the hypothesized mediating role of authoritarianism, the hypothesized model does not eliminate the possibility that material values could mediate the relationships between authoritarianism and gender and environmental attitudes. Regressions were run to test material values as a mediator in all of the scenarios where authoritarianism was assessed as a mediator. In none of these analyses did the beta weight drop to zero or drop as much as when authoritarianism was tested as the mediating variable. See Appendix E, Figures E.1- E.6 for results of these regression analyses.

Radcliffe Class of 1964 Study

In the Radcliffe sample, the relationships that were tested in the Buenos Aires study were also tested here wherever possible. The first task in addressing hypotheses 1-5 was to identify relationships among the key variables. Table 3.14 summarizes the descriptive statistics for the key variables to provide a context for interpreting correlations among them, presented in Table 3.15.

Looking at these results in relation to the hypotheses, we see that material values were not related to right wing authoritarianism. However, material values were significantly negatively correlated with ecocentric attitudes. Since material values did not have a significant relationship with authoritarianism, it is not possible for authoritarianism to mediate the relationship between material values and ecocentric attitudes. (This also means that there cannot be a test of authoritarianism as a mediator in the relationship between material values and intersectional consciousness as there was between material values and gender attitudes in the Buenos Aires study.) Therefore, hypothesis one is partially supported.

In hypothesis two, I proposed that material values would be negatively correlated with intersectional consciousness; however, this relationship was not supported by the results. Turning to the hypotheses about attitude-behavior relationships, material values were negatively correlated with pro-environmental behaviors, supporting part of hypothesis three. Also supporting hypothesis four, ecocentric attitudes were positively correlated with pro-environmental behaviors.

Hypotheses were not formulated about the other relationships but some results are worth noting. In line with previous research, right wing authoritarianism was negatively correlated with feminist and ecocentric attitudes. There were no significant differences in the correlation coefficients of MVS and RWA with feminist and ecocentric attitudes. Intersectional consciousness was positively correlated with ecocentric attitudes and pro-environmental behaviors.

Table 3.14 Radcliffe Study: Descriptive Statistics of Key Variables, All Participants (n=105)

Measure*	Mean	Standard Deviation
Material Values Scale	2.20	.63
Right Wing Authoritarianism	1.69	.60
Intersectional Consciousness	4.43	1.01
New Ecological Paradigm	4.59	.63
Environmental Activism	2.29	1.79

*A six point scale was used for all measures

Table 3.15 Radcliffe Study: Relationships between All Variables, All Participants (n=105)

Measure	MVS	RWA	IC	NEP
Materialistic Values (MVS)	---			
Authoritarianism (RWA)	.044	---		
Intersectional Consciousness (IC)	-.18	-.37***	---	
Ecocentric Attitudes (NEP)	-.22*	-.39***	.2*	---
Pro-environmental behaviors (EB)	-.27*	-.20	.3**	.31**

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Behavioral Outcomes

The correlation analysis (see Table 3.16) shows that there is a positive relationship between ecocentric attitudes and engagement in pro-environmental activities. To gain a more detailed understanding of the relationships between pro-environmental behaviors and attitudes, relationships between individual activities and attitudes were examined. As seen in Table 3.16 below, ecocentric attitudes are positively correlated with pro-environmental activities as a group as well as with the specific activities of writing a letter on behalf of an environmental cause and attending a rally.

Table 3.16 Radcliffe Study: Relationships Between New Ecological Paradigm (NEP) Score and Specific Environmental Behaviors (n=105)

Environmental Behavior	Correlation with NEP
All pro-environmental activities	.31**
Signed a petition	.17
Contributed money	.20
Wrote a letter or called political representative	.29**
Attended a meeting	.16
Active in organization	.20
Attended a rally	.27**

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Class

To see if income affects the relationships under study, I first divided the Radcliffe into two groups, based on the median income of the sample, and then conducted analyses to identify between group differences. Table 3.17 is a summary of

the descriptive statistics of the key variables for both groups. T-tests revealed that there were no there were no significant differences between the means of the two income groups.

Table 3.17 Radcliffe Study, Descriptive Statistics of Key Variables, Participants with Household Income Less than \$100k (n=32-35) and Greater than \$100k (n=50-55)

Measure*	Less than \$100k		Greater than \$100k	
	Mean	Standard Deviation	Mean	Standard Deviation
Material Values Scale	2.21	.57	2.19	.66
Right Wing Authoritarianism	1.63	.76	1.74	.53
Intersectional Consciousness	4.58	.96	4.31	1.04
New Ecological Paradigm	4.62	.57	4.53	.64
Environmental Activism	2.18	1.62	2.36	1.91

*A six point scale was used for all measures

Correlations

Next, I conducted correlations to identify significant relationships among the key variables in both groups. Summaries of these correlations can be found in Tables 3.18 and 3.19 below. There were noticeable differences between the two groups. In the group of women with a household income of less than \$100k per year, there was only one significant relationship: authoritarianism was negatively correlated with ecocentric attitudes.

Table 3.18 Radcliffe Study: Relationships between All Variables, Participants with Household Income Less Than \$100k (n =32-35)

Measure	MVS	RWA	IC	NEP
Materialistic Values (MVS)	---			
Authoritarianism (RWA)	-.24	---		
Intersectional Consciousness (IC)	.03	-.31	---	
Ecocentric Attitudes (NEP)	.05	-.54***	-.003	---
Pro-environmental behaviors	.14	-.22	.28	.21

+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Table 3.19 Radcliffe Study: Relationships between All Variables, Participants with Household Income Greater than \$100k (n =50-55)

Measure	MVS	RWA	IC	NEP
Materialistic Values (MVS)	---			
Authoritarianism (RWA)	.28*	---		
Intersectional Consciousness (IC)	-.33**	-.41**	---	
Ecocentric Attitudes (NEP)	-.39**	-.19	.30*	---
Pro-environmental behaviors	-.36**	-.18	.31**	.37**

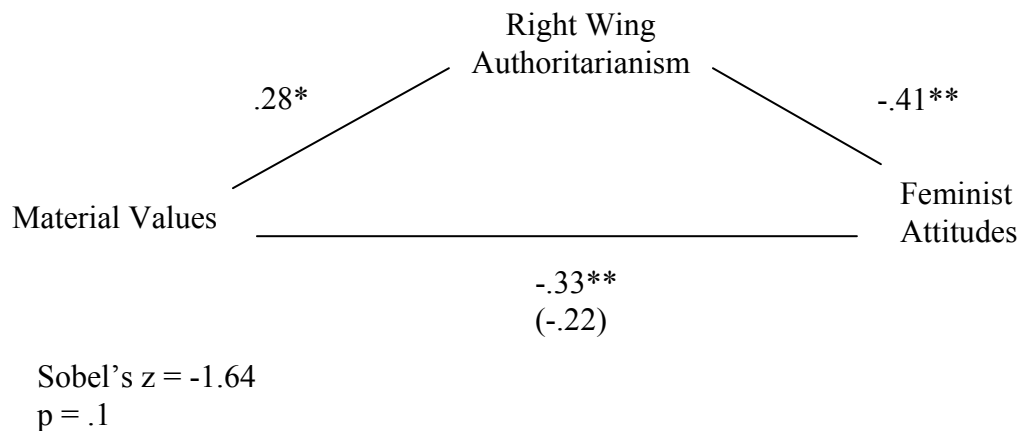
+ $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Looking at participants with a household income greater than \$100k per year, there are several significant relationships (see Table 3.19 above). Material values were 1) positively related to right wing authoritarianism and 2) negatively correlated with intersectional consciousness. There was a negative relationship between material values and ecocentric attitudes and pro-environmental behaviors, ecocentric attitudes were

positively correlated with pro-environmental behaviors and intersectional consciousness, authoritarianism was negatively correlated with intersectional consciousness, intersectional consciousness was positively correlated with pro-environmental behaviors.

Since material values, authoritarianism, and feminist attitudes were all related, the next step was to test whether authoritarianism acted as a mediator in this relationship. When right wing authoritarianism is included in a regression as an independent variable predicting feminist attitudes, the relationship between material values and feminist attitudes is no longer significant. This suggests that right wing authoritarianism at least partially mediates this relationship. A Sobel test does not confirm this but this could be due to the fact that this too conservative a test given the small n of this sub-sample (see Figure 3.7 below).

Figure 3.7: Radcliffe Study: Summary of Regression Analysis to Examine Role of RWA as Mediating the Relationship of MVS with Feminist Attitudes, Participants with Household Income Greater than \$100k (n =50-55)



Next, I performed tests for significant differences between the correlation coefficients of both income groups. There was a significant difference in three relationships involving materialistic values: materialistic values and authoritarianism ($z = -2.36, p = .02$), ecocentric attitudes ($z = 2.06, p = .04$), and pro-environmental behaviors ($z = 2.27, p = .02$). There were two relationships with a trend towards

significant difference, materialistic values and intersectional consciousness ($z = 1.64$, $p = .1$), and authoritarianism and ecocentric attitudes ($z = -1.83$, $p = .07$).

I also included income as a control variable in regression models of the bivariate relationships described earlier as a way of testing for the effect of class. Only one relationship, material values with pro-environmental behaviors, changed significantly ($p = .007$ dropped to $p = .06$ when income is included in the model). Since marital status can affect a woman's access to income and thereby affect class status, I checked to see if marital status was a relevant variable in this model. Current marital status was correlated with household income but at a low level ($r = .28$, $p = .009$) and so did not seem to be a relevant class variable.

Material values as a mediator?

As in the Buenos Aires study, the relationships hypothesized do not eliminate the possibility that material values could mediate the relationships between authoritarianism and gender and environmental attitudes instead of authoritarianism acting as the mediator. A regression was run to test material values as a mediator in the one set of data where this was possible, the sub-sample of participants with household income greater than \$100k on the relationship between authoritarianism and feminist attitudes. In this analysis the beta weight did not drop to zero or drop as much as when authoritarianism was tested as the mediating variable. See Appendix E, Figure E.7 for results of this regression.

Buenos Aires and Radcliffe Comparison

While it is not appropriate to draw conclusions about differences in scale scores between the two studies' samples due to language differences and to many differences in the samples' demographics such as age, gender, socio-economic status, and different cultural backgrounds, it is useful to compare the means to give a more complete context for interpreting the results in both studies.¹ The descriptive statistics and t-test results

¹ Recall that the Buenos Aires questionnaire used a 7 point Likert scale and the Radcliffe study used a 6 point Likert scale for the MVS, RWA, and NEP measures. The Buenos Aires data was thus adjusted to a 6 point scale, by multiplying each

show that the Radcliffe Study participants have a significantly lower mean score in material values and right wing authoritarianism and a higher mean score in ecocentric attitudes than the Buenos Aires Study participants.

Table 3.20 T-test of Differences between Scores on Key Variables Tested in Both Studies

Measure	Buenos Aires mean (n= 240)	Radcliffe mean (n = 105)	t	Significance
Material Values Scale	3.05	2.20	-10.04	.000
Right Wing Authoritarianism	2.83	1.72	-13.02	.000
New Ecological Paradigm	4.04	4.59	7.65	.000

A more appropriate point of comparison to the Radcliffe sample in the Buenos Aires sample is the group of women with a university education. When only these women are compared with the Radcliffe sample, the significant differences in means found using the whole sample remain (see Table 3.21 below). There is also a significant difference in the variance in scores in authoritarianism; the Radcliffe participants having a much smaller variance in scores than the Buenos Aires participants ($F = 8.21$, $p = .005$).

participant's mean scale score by 6/7, so the means in both studies would be comparable. Scores created from this adjusted data has been used in all of the analyses in this dissertation. Also, reverse-scored items were reversed by changing responses to the scale value "opposite" the one marked (e.g., a response of 6 was changed to a 0 on the 0-6 point scale). These reversed values were the used when calculating the mean in both Radcliffe and Buenos Aires Studies.

Table 3.21 T-test of Differences between Scores on Key Variables Tested in Both Studies, Women With a University Education Only

Measure	Buenos Aires mean (n = 84)	Radcliffe mean (n = 102)	t	Significance
Material Values Scale	2.98	2.20	-7.83	.000
Right Wing Authoritarianism	2.63	1.72	-9.74	.000
New Ecological Paradigm	4.14	4.59	5.1	.000

CHAPTER IV

Discussion

In this chapter I will present an overview of the results, first from the Buenos Aires study and then from the Radcliffe study. For each study I will review the significant relationships among participants' attitudes and the relationships between attitudes and environmental behaviors. In addition, I will discuss how some aspects of social context (i.e., gender and class) seem to affect these relationships. After summarizing these results, I will discuss conclusions that can be drawn from these findings, particularly the role of authoritarianism as a mediator between material values and attitudes towards gender and the environment, and how this model of interconnected attitudes relates to environmental behaviors. Finally, I will discuss the results of the two studies in relationship to each other, exploring the roles of culture, national experience, and socioeconomic factors in individuals' differing levels of acceptance of this set of attitudes and values and involvement in environmental activities.

Buenos Aires: Material values, authoritarianism, and outcome attitudes

As predicted, I found that people with more material values also scored higher on authoritarianism. This relationship was modest but significant, supporting a similar (yet to be published) finding of a positive correlation between material values and authoritarianism in the literature (Duriez et al., 2005) and contrasting another study that found very weak and not statistically significant relationships (Roet et al., 2006). Also as predicted, people high in material values showed lower support for ecocentric attitudes and higher support for traditional gender attitudes than people low in material values. These findings are consistent with similar findings by Kasser (2000), who found

that materialistic people were low in support for environmentalist attitudes, and offer empirical evidence for a theorized but previously untested link between material values and gender attitudes.

The findings for authoritarianism were similar to the results for material values. Those reporting more authoritarian attitudes endorsed traditional gender attitudes at higher levels, and also tended to not endorse environmentally progressive attitudes. These findings are in line with previous studies of attitudes held by authoritarians (Duncan, 2006; Duncan, Peterson, & Winter, 1997; Haddock & Zanna, 1994; Peterson, Doty, & Winter, 1993). It is also notable that the relationships between authoritarianism and these attitudes were significantly stronger than the relationships of these attitudes with material values.

Since the requisite first-order relationships were confirmed in these data, it was possible to investigate whether authoritarianism mediated the relationships between material values and normative attitudes towards gender and the environment. In the Buenos Aires sample, authoritarianism partially mediated the negative relationship between material values and ecocentric attitudes and fully mediated the positive relationship between material values and traditional gender attitudes.

There was also support for the ecofeminist theory (Merchant, 1980, 2003; Reuther, 1993; Shiva & Mies, 1993) that attitudes towards the environment and women are related. Based on ecofeminist theory, I proposed that those who espouse traditional gender attitudes are unlikely to support the protection of nature for its intrinsic, non-instrumental value. Supporting this hypothesis, the data from this study show that people who strongly supported traditional gender attitudes were lower in ecocentric attitudes than those who did not. While evidence for ecofeminist theory has been drawn from historical evidence and discourse analyses (see, e.g., Merchant, 2003, for an analysis of the narratives generated by the Christian Biblical and Western Enlightenment traditions as they pertain to perceptions of gender and nature) this relationship has not previously been tested at the level of individual psychology. Finding that these broad, society-level associations are related within individual persons' sets of attitudes lends weight to the ecofeminist argument.

Buenos Aires: Attitudes and environmental behavior

Participants' engagement in everyday pro-environmental behaviors listed on the survey was, on average, quite low (mean = 1.36, on a 0 - 4 scale) for any particular behavior; the sample clustered tightly around the mean (standard deviation = .5). The measure of everyday environmental behavior assessed both the frequency of respondents' engagement in any given activity and the number of activities they engaged in from the list I offered. One important finding is that people who had higher levels of material values engaged less often in pro-environmental behaviors when these behaviors were analyzed as a group and for several specific behaviors. Surprisingly, people with higher levels of ecocentric attitudes did not report higher levels of being involved in environmental behaviors. The measure of environmental behavior was problematic in that there was low frequency of engagement, even at the most minimal level, in almost all behaviors and there was little variance in participants' engagement in the activities taken together as a group or for any given behavior. There are two possible reasons for this. First, the measure I used was one created for a North American context and adapted for the Buenos Aires context. This meant many of the items were translated into Spanish and used as is, though a few were changed more substantially in an attempt to reflect what people in Argentina do. Yet the adapted measure may still not have captured environmental activities people in Buenos Aires can engage in as well as a measure developed there would have. A second reason is related to the first in that there are far fewer developed infrastructures, government administered or commercially run, for individual environmental behaviors. One example that stands out is the complete lack of a recycling system for residential waste in Buenos Aires. There is a highly developed, informal system that has expanded in recent years based on scavenging, but a set of norms has not been established for non-scavengers to work with the scavengers to recycle paper, metals, etc. (e.g. sorting trash from recyclables before putting it out on the street), nor is there any way for a person to recycle goods outside of the scavenging system. This creates a situation in which it is difficult for people to engage in environmental behaviors and to measure differences in levels of engagement in the activities that do exist but are not universally available. This situation suggests the importance of reconceptualizing environmentally sustainable activity, particularly in places with few infrastructures supporting these activities. It also

highlights the importance of awareness of the environmental impact of certain activities. Like equal access, equal knowledge cannot be assumed. Two people might be equally uninformed about the environmental consequences of their behaviors and may choose to engage or not engage in an activity. This engagement or lack of engagement would be unrelated to their attitudes towards the environment, if they have not consciously connected the environmental impact to their action. The lack of environmental education in Argentina may make awareness particularly relevant as a barrier to engagement in environmental behaviors and may help explain the lack of connection between ecocentric attitudes and environmental behaviors.

Buenos Aires: The role of gender and class

The social context of gender and class were important factors to include in analysis of this data, considering that gender and class both affect participants' experiences of social and economic hierarchies. Women's and men's mean scores on attitude and behavior measures were quite similar; the only significant difference was that men held more traditional gender attitudes than women. There were no statistically significant differences in the relationships among attitudes between women and men; however, the relationship between endorsing material values and authoritarianism was significant for men but not for women. This means that, for men, as support for material values increased, authoritarianism tended to increase as well. This correlation of values and attitudes did not exist for women. In fact, authoritarianism partially mediated the relationship between material values and gender attitudes and environmental attitudes in men but not in women. This raises two questions: why would authoritarianism be related to material values and mediate the relationship between material values and gender and environmental attitudes in men? And conversely, why wouldn't it act this way in women?

In the introduction, I raised the possibility that authoritarianism might be related to material values and act as a mediator between material values and gender and environmental attitudes in that authoritarianism offers a set of ideological beliefs that support inequitable distributions of power and resources according to hierarchical structures. This set of beliefs can be used to justify other attitudes that implicitly

endorse inequitable distributions of power across various social and economic domains. The implicit endorsement of hierarchy found in material values encourage a person to support hierarchical distributions of power that are consistent with authoritarianism and its correlate attitudes. In the presence (or acceptance) of authoritarianism, a person has an ideology that justifies her or his endorsement of material values and traditional gender and environmental attitudes. In the absence (or rejection) of authoritarianism, a person has a set of ideological beliefs that allows for the rejection of material values and traditional gender and environmental attitudes.

It is my view that gender differences in status and experiences of inequity derived from this status differential contribute to the finding in this study that there is a tendency for men to associate material values, authoritarianism, and traditional gender and environmental attitudes and for women to not make this association. If a belief that hierarchical structures are appropriate, even desirable, means of distributing power and resources marks both material values and authoritarianism, it is possible that men justify their higher position in socio-economic hierarchies by adopting material values and authoritarianism. This explanation would fit Jackman's (1994) theory that dominant groups need to adopt belief systems that justify the expropriative relationships with subordinate group members that allow them to maintain privilege in society. However, it must be acknowledged that a correlation between material values and authoritarianism does not mean that men have greater support for material values and/or authoritarianism. In fact, the data in this study do not show a significant difference in the mean scores in material values or authoritarianism between women and men. It does mean that men in the Buenos Aires sample tend to *associate* authoritarianism with material values to a greater degree than women do, both in accepting these two sets of beliefs and rejecting them. This correlation suggests that if you have a high status in a given hierarchy (in this case, status derived from being male) and you have high material values, you also support authoritarian socio-economic structures and attitudes. This is a logical outcome if you have material wealth, you acknowledge that you want this wealth, and thus are comfortable supporting a system that benefits you in this material way. If you are high status and reject material values, you also reject authoritarian structures and attitudes. This also is a logical outcome; you may have

material wealth but if you believe you do not want it and you do not support the hierarchically structured system from which your material privilege is derived, this is consistent with your beliefs and general belief in meritocracy. Your ideological system as a high status person connects material values and authoritarianism, whether you accept or reject these values and attitudes. This belief system can allow a high status person to justify their position within a hierarchy without needing to justify the actual source of their privilege and, moreover, believe that their privilege is mainly merit based, not a result of structural inequalities.

If you're a low status person, in this case, a woman, the lack of correlation between material values and authoritarianism suggests there is tendency to disconnect, or at least not associate, your material wealth (or lack thereof) with support for a hierarchically structured system built on an assumption of meritocracy. A low status person may realize that what material wealth they have is not really determined by whether or not they support a hierarchical system in which they are usually cut out of the benefits those in higher status positions have.

A second social context I considered was class. The complicated economic situation in Argentina is one that includes basic, universal education and relatively high educational levels. However, earning capacity is often low, resulting in a lack of correlation between income and education. Therefore, class was defined in this study by education level, not income. Having at least some university education was used as an indication of higher resources, in terms of integration into middle and upper social class culture and greater potential access to higher paying jobs. There were only two differences between the education groups in terms of level of support for certain attitudes; the group that did not have some university education scored higher in authoritarianism (.45 difference in mean scores) and traditional gender attitudes (.43 difference in mean scores). There were also two differences in the strength of the relationship between attitudes. For those with more education, ecocentric attitudes were more strongly related to engagement in environmental behavior. There was a non-significant correlation ($r = -.148$, $p = .13$) for those who did not have university education versus a significant correlation ($r = .23$, $p \geq .05$) for those who have at least some university education; the difference in correlations was statistically significant.

We can only speculate about why this relationship holds only for those with more education, but it could be a result of greater awareness of the environmental impact of behaviors and a better understanding of natural systems, gained through the course of their more extensive education. One important similarity between these two groups is that greater support for material values was related to lower levels of engagement in pro-environmental behaviors.

There was also a significant difference in the strength of the correlation between participants' authoritarianism and endorsement of traditional gender attitudes: this relationship was significantly stronger for members of the higher education group ($r = .55, p \geq .01$) than it was for members of the lower education group ($r = .34, p \geq .01$). For members of the lower education group, the data show that they have higher mean scores in support for traditional gender attitudes and authoritarianism, however these variables, while correlated, were not as strongly correlated as in the higher education group. Education may have exposed those participants with university education to critiques of traditional gender attitudes and social and political systems based on a centralized authority, as well as feminist critiques that tie these two concepts together, identifying the source of gender inequity in patriarchal systems.

Similarly, authoritarianism was significantly related to material values for those with university education, but not for those without it. However, there was *not* a significant difference in the correlations between these two groups. The presence of a significant relationship between material values and authoritarianism in the higher education group allowed for a test of authoritarianism as a mediating variable in material values' relationships with gender and environmental attitudes. This test revealed that authoritarianism did act as at least a partial mediator of both of these relationships in this higher resourced group. This finding supports my earlier argument that authoritarianism may function in high status groups as an ideological set of beliefs that justify hierarchical structures in other domains, or the lack of authoritarianism duly justifies a rejection of the appropriateness of hierarchy without having to give up the benefits one has as a high status person.

Buenos Aires Study: Summary

I hypothesized that people with greater acceptance of material values would show stronger support for traditional gender attitudes and weaker support for ecocentric attitudes than people with lower acceptance of material values and that these relationships would be at least partially mediated by authoritarianism. The Buenos Aires data support these hypotheses.

These results suggest that there are personality characteristics, authoritarianism and material values, that can inform someone's acceptance or rejection of attitudes towards gender and the environment. Material values are connected to two kinds of attitudes that support socially normative, hierarchical systems: 1) general and ideological in the form of authoritarianism and 2) specific in terms of traditional beliefs about the environment and gender. The argument underlying this hypothesis is that people who endorse hierarchy-based, socially normative attitudes or values in one area will endorse them in others (see, e.g., research on right-wing authoritarianism in Altemeyer, 1996).

The mediation model was confirmed overall. Further analyses showed that it held for people with a university education and men, but not for women or people with lower resources in terms of education. Men and people with a university education often have positions closer to the top of social, political, and economic hierarchies. Or if they don't have these positions, they have greater potential for access to these positions or may perceive themselves as having potential access in ways that women and people with fewer educational resources may not. This could be a reason why these values and attitudes were more interrelated than they were in women and people without a university education. Men and those with exposure to higher education do not show greater support for these values and attitudes than do women or those without higher education, but they do tend to adopt these hierarchical attitudes across categories. That is, these attitudes are more highly correlated in men and people with relatively more resources than people at lower levels in the social hierarchies. Future studies aimed at understanding gender and class based differences in perceptions of access to social and economic power specifically through access to or reflected by material possessions may help explain how authoritarianism relates to material values.

One conclusion that can be drawn about the connections between attitudes and environmental behaviors is that material values matter. Endorsement of material values was the psychological construct most consistently related to everyday environmental behavior. In the group as a whole and in all the sub-sample analyses, except for men as a group, material values were negatively related to pro-environmental behavior. However, it is clear that ecocentric attitudes, which were rather high in the Buenos Aires sample, were not sufficient to motivate environmental behavior as they were measured in this study. These results raise three important points in understanding environmental behavior. The first, most obvious conclusion, is that ecocentric attitudes simply do not predict these everyday environmental behaviors. This contradicts earlier findings using the New Ecological Paradigm that have found relationships between these attitudes and pro-environmental behavior (Clark, Kotchen & Moore, 2003; Dunlap et al., 2000). It is possible that the ecocentric attitudes represented in the New Ecological Paradigm measure are “too distant,” in terms of their content, to the behaviors measured in Buenos Aires to be significantly related to them. However, there is considerable disagreement over the power of attitudes in predicting environmental behavior (Stern, 2000). This finding of a lack of relationship between ecocentric attitudes may reflect a real lack of correspondence between what people purport to support and what they actually support through their behavior. Second, an emic approach that focuses on identifying the behaviors available in local contexts is preferable to an etic approach that assumes there are universally measurable behaviors. Third, the lack of infrastructure for environmental behaviors needs to be accounted for when assessing individual behavior, yet it is not clear how to do that. Since there was a relationship, albeit a weak one, between material values and environmental behaviors, the environmental behaviors measure may be tapping into some coherent and meaningful set of activities. The low strength of that relationship combined with the low frequency of engagement in the behaviors and the lack of relationship with attitudes more likely to be related to environmental behaviors than material values suggest that the measure could be developed in a way that better addresses the available opportunities for environmental actions. A more accurate measure assessing psychological, individual differences would also measure different choices within the

same set of opportunities or, if opportunities are not equal due to lack of infrastructure, account for that difference in opportunity. More study is needed of the structural barriers, available kinds of environmental behavior in the Buenos Aires setting, and other psychological factors such as levels of awareness that allow for or promote environmental behaviors.

Radcliffe: Material values, authoritarianism, and outcome attitudes

One predicted relationship between material values and other attitudes was supported by the data. Participants with higher endorsement of material values demonstrated less support for ecocentric attitudes. However, contrary to expectations, there was no relationship between a person's material values and feminist attitudes. Also counter to my hypotheses and in contrast with results from the Buenos Aires study, there was not a significant relationship between material values and authoritarianism in the Radcliffe sample. The results of other analyses of authoritarianism paralleled the findings in the Buenos Aires study and the literature. Authoritarianism was correlated negatively with support for both feminist and environmentalist attitudes.

There was evidence for three out of five of the predicted relationships among the main attitudes under study. However, since there was not a relationship between authoritarianism and material values, there was no support for the proposed model in which authoritarianism mediates the relationship between material values and attitudes about gender and the environment. One explanation for this may be the very low mean and low variance around the mean for authoritarianism. Authoritarian attitudes are not a common set of attitudes for this group of women, an outcome that makes sense given their generational, education, and class backgrounds. These women came of age at the beginning of a major cultural shift in the U.S. when obedience to authority and acceptance of traditional social norms were directly challenged (Stephens, 1998). There is also substantial evidence in the literature that connects higher levels of education and higher class status with lower levels of support for authoritarian beliefs (Altemeyer, 1988; 1996).

Beyond measurement issues, the three reasons proposed earlier to explain why material values and authoritarianism could be related are relevant here. First, the Radcliffe women may live primarily in local cultures where a person does not gain material wealth or access to goods through obedience to central authority figures. Thus, adopting authoritarian attitudes does not help them fulfill their material values. Second, since they have a low mean score in material values, they would not feel the insecurity Duriez et al. (under review) suggested is a result of being materialistic. If they feel secure in their social comparisons with others and satisfied with their material possessions, they would not need to cope by adopting authoritarian attitudes. Third, if material values require a belief in the correctness of hierarchical distributions of power that is consistent with authoritarian attitudes, perhaps their low scores in both material values and authoritarianism and the lack of relationship between these two variables reflects the fact that, as a group, the Radcliffe women do not believe in hierarchical distributions of power as an appropriate way of structuring society.

A final explanation is that authoritarianism is not related to material values in this sample because as women much of their access to material goods is restricted since their access to wealth is likely to be through their husband's incomes. Lacking control over access to material goods might make them less invested in a system of control as represented in authoritarian attitudes.

Finally, there was a significant positive relationship between feminist attitudes and ecocentric attitudes. This relationship was not hypothesized, but lends further support to the ecofeminist argument that undergirds the proposed model. This argument is based on the idea that Western societies are built on systems of domination, systems that rely on the stability of certain power relationships, specifically gender relations and those between humans and the natural environment. Beliefs that support this structure, especially beliefs about power relationships, emerge from this basic structuring of society. In this way, support for hierarchically structured attitudes cuts across domains, as this finding demonstrates.

Radcliffe: Environmental behavior

On average, participants engaged in 2.3 out of 6 environmental activism oriented behaviors. The number of activities participants engaged in varied a great deal (standard deviation = 1.79). The activity participants did most was signing a petition (n = 42), followed by writing a letter and donating money (both n = 34), attending a meeting (n = 26), being active in an organization (n = 20), and attending a rally (n = 14). Three sets of attitudes were related to higher levels of engagement in environmental activism. People low in material values and people high in ecocentric attitudes were more likely to engage in environmental activism. Feminist attitudes and environmental activism were also positively correlated; it's not clear whether this relationship reflects an underlying linkage between attitudes about gender and the environment, between feminism and activism, or both.

Radcliffe: The social context of class

To assess whether class is an important contextual factor conditioning these relationships in the Radcliffe sample (which was entirely university-educated), the group was split at their median household income of \$100k/year. There were no significant differences in the average scores on the value, attitudinal, and behavioral measures between the two groups. However, the two groups looked very different in terms of how the variables related to one another. Among those women with household incomes lower than \$100k, there was only one significant relationship; in this group, those with higher levels of authoritarianism exhibited less support for ecocentric attitudes than those low in authoritarianism. In contrast, in the group with household incomes over \$100k, all of the attitudes and behavioral measures were related to each other except for authoritarianism and environmental activism. Several of these relationships were significantly different between the two groups. Specifically, those in the over \$100k household income group had significantly stronger relationships between their scores on material values and authoritarianism, ecocentric attitudes, and environmental activism than those in the lower income group. Additionally, authoritarianism mediated the relationship between material values and both ecocentric and feminist attitudes in the group with household income over \$100k. In the group

with household income lower than \$100k, the lack of relationships among almost all of the variables precluded authoritarianism acting as a mediator.

These results were similar in some ways to the results of the class-based analyses of the Buenos Aires data. The primary similarities are that there was no relationship between material values and authoritarianism in the lower class status subset of the sample and thus, authoritarianism did not act as a mediator between material values and gender and environmental attitudes in that group, while it did act as a mediator in the higher class status group. The Radcliffe women with higher household incomes, like the Buenos Aires participants with higher class status due to education, connect material values, authoritarianism, and gender attitudes whereas their peers with lower incomes do not.² Again, this could be due to high status participants' use of either the acceptance or rejection of RWA as way of adopting a set of ideological beliefs that justify their privileged position nearer to the top of the hierarchy, either by supporting authority dominated, hierarchical systems or by rejecting them and thus being able to justify one's position based on individual merit, not system benefit.

But what about that lack of relationship among values, attitudes, and behaviors among the women in the lower class status group? This is still a relatively privileged group - why don't these constructs connect together for these women as compared to their wealthier peers? There is an issue of the small size of this sample ($n = 35$); statistical tests on a sample this size may not be sensitive enough to identify the significance of weak to moderate relationships. Whether this is the case or whether these relationships simply do not exist in this sub-sample, it is useful to examine other data we have from these women to understand the possible reasons why material values and authoritarianism are sometimes not related, even in a relatively advantaged group. I identified a few cases of the highest and lowest scorers in the less than \$100k household income group on both the material values (MVS) and authoritarianism (RWA) scales. I then looked at some of the circumstances in the lives of women who showed different patterns of RWA and MVS (High MVS - High RWA ($n = 2$), High MVS - Low RWA

² It should be noted that Radcliffe participants with relatively lower class status connect authoritarianism with lack of support for ecocentric attitudes whereas their higher class status peers do not.

(n = 4) , Low MVS – High RWA (n = 2) , and Low MVS – Low RWA (n = 4)) to see if there were key similarities and differences among these participants. I explored this using demographic data and information from the “high and low points” section of the 2005 survey where participants had the opportunity to write in an open-ended format about their high and low points over the past ten years.

Marital status stood out as a significant feature, both as a defining feature of the lower income group and as characteristic of the selected High and Low cases. In t-tests of income differences based on marital status of the entire 2005 Radcliffe sample with income data (n = 80), there is a trend indicating that if participants had *ever* been divorced (regardless of whether they are currently married or not) they had lower household incomes in 2005 (mean = 2.83, sd = 1.40) than their never divorced peers (mean = 3.36, sd = 1.50) (t = 1.75, p = .08)³. The *currently divorced* tend to have higher salaries in 2005 (mean = 3.76, sd = 1.92) than their not currently divorced peers (mean = 2.84, sd = 1.99) (t = 1.72, p = .088). However, the *currently married* have *significantly higher household incomes* (mean = 3.44, sd = 1.41) than the not married (mean = 2.64, sd = 1.38) (t = 2.66, p = .009).

Single status, either as a result of never marrying or living with an unmarried partner, or as a result of divorce or death of a spouse, affects these women’s household income. In the greater than \$100k household income group, there are significantly more currently married women than in the less than \$100k income group ($\chi^2 = 11.58$, p = .001). Interestingly, there are seven never married, never partnered women in the entire 2005 sample and all of them report household income below the median level. Single status may result in increased material insecurity and in some women, increase material values. Of the 6 high scorers on the material values scale in the less than \$100k income group, only 2 are currently married and 1 of those women had been divorced. One of the Low RWA – High MVS participants wrote about a recent divorce as a significant low point, citing it as a “major financial stress.” Along with the emotional turmoil, she found the financial impact and material manifestation of the divorce very difficult: “The

³ Household income was coded as 1 = <\$40k, 2 = \$40k – \$100k, 3 = \$100k - \$200k, 4 = \$200k - \$300k, 5 = \$300k - \$400k, 6 = >\$400k.

Yearly salary was coded as 1 = not working for pay, 2 = <\$20k, 3 = \$20k - \$50k, 4 = \$50k - \$100k, 5 = \$100k - \$150k, 6 = \$150k - \$200k.

falling apart of the once-beautiful house. Now it is also the relative poverty. The trouble just paying the utility bills. Being unable to retire. Unable to buy a new dress.” Divorce and the resulting lower income does not necessarily increase material values. All 4 of the Low RWA-Low MVS participants were divorced and had low material values scores. But their divorced and single status and, for 3 of the 4 participants, the demands placed on them caring for their own and adult children’s severe illnesses, likely contributed to their lower income status.

Marital status may not only affect material security but it may also affect more directly the beliefs and values under study. Experiencing divorce has been shown to be a politicizing experience (see, Fahs, 2007) and perhaps that process contributes to the low RWA scores in this lower income group. Of the 8 lowest RWA scoring participants, 7 had been divorced, only 1 re-married, and 1 has never been married. In contrast, none of the 4 highest RWA scorers has ever been divorced, 3 are currently married, and 1 has never been married.

Of the cases in this lower income group whose material values and authoritarianism were related and as such were similar to the higher income group’s attitude pattern, the social and professional activities they wrote about matched these attitudes, especially in the Low-Low category. These women wrote about engagement in non-traditional activities that were not particularly materially focused, such as culture festivals, “genealogy projects”, and travel. One woman even wrote that she really enjoyed the “egalitarian approach” to a school partnership project in which she was involved.

Turning to those participants who were less similar to their wealthier peers in terms of a lack of correlation between their authoritarian attitudes and material values, the two high RWA – low MVS participants write about more traditional engagements. One is highly involved in religious activities “teaching bible study” and working at a religious college. This is similar to another high RWA scorer who was also highly religious but, in contrast, was a high scorer in MVS. Religiosity, a correlate of authoritarianism, may be experienced differently in terms of material values; in the case of the high RWA – low MVS participant, her religion may encourage a support of tradition and convention and a disregard for “worldly goods” whereas the high RWA –

high MVS participant may feel a more encompassing support for convention that extends to the material world, even if she has less access to material goods than her wealthier peers. The other high RWA – low MVS participant did not mention religion but her hobbies did tend to focus on more traditional, domestic oriented crafts such as doing patchwork and making dollhouse rugs. None of the three low RWA – high MVS participants who wrote about their high and low points in the 2005 survey mentioned religion. Two low RWA – high MVS participants tended to dwell on either measures of success and comparison to others (e.g., “they want big offices, lots of money, and lots of leaves”) or feelings of material deprivation.

Some of the women with less than the median income are similar to their peers in the higher income group, particularly associating authoritarianism and material values and rejecting both. Of those who do not fit this pattern, those expressing low and high material values along with high authoritarianism, seem to be in the lower income category possibly as a result of their more traditional lifestyle choices. Those expressing high material values and low authoritarianism seem to have been affected by a change in income due to divorce. One possible conclusion to draw from this exploratory analysis is that the lack of access to income generated by a partner, usually a high earning male partner, does make a difference overall in the income level of this subsample as a whole but seems to have a greater psychological effect on some participants, highlighting their material values while they maintain low authoritarianism.

Radcliffe: Summary

In this study I hypothesized that the model of attitudes and behaviors that functioned in the Buenos Aires sample would emerge in the Radcliffe sample as well. The results of the analysis of the higher income sub-set of the Radcliffe sample support this hypothesis, but there was no support for the model in the sample as a whole nor in the lower income sub-set. The connection between holding material values and lack of support for pro-environmental attitudes that was seen in the Buenos Aires study and in previous research (Kasser, 2000) was upheld. However, there were no connections in this sample between material values and feminist attitudes or authoritarianism. Previous

literature and the Buenos Aires study results show that authoritarianism is related to support of traditional gender attitudes and hostility towards feminism. The Radcliffe data add to this evidence and demonstrate that authoritarianism is related as well to a lack of support for progressive gender attitudes.

Similar to the Buenos Aires results, material values were related to environmental behavior, though in this study behaviors were strictly activist in nature. Supporting Stern's Value-Belief-Norm model of environmental behavior, ecocentric attitudes were related to environmental activism. This could indicate that the New Ecological Paradigm is better at predicting political activism on behalf of the environment in first world nations than it is at predicting everyday environmental behaviors. Further study is required to see if the relationship between the new ecological paradigm and everyday behaviors exists in first world nations. This would help clarify whether the lack of relationship in Buenos Aires is due to the nature of the behavior measured or the context of a poor but industrialized nation.

Feminist attitudes and environmental activism were positively related. This is a new finding, suggested by some earlier research (Inglehart, 1990; 2000) but not studied directly. This relationship might indicate that recognition of a system of domination in one area, gender or the environment, may lead a person to recognize similar systems of domination in the other area and result in actions aimed at changing both systems.

Buenos Aires and Radcliffe studies in relation to each other

Results from the Buenos Aires and Radcliffe studies cannot be compared directly, in terms of mean levels of variables, since the samples are different from one another on many characteristics: age, education, income, and gender. Moreover, the samples are drawn from two different national cultures. The American and Argentine cultures, broadly construed, may share some features but constitute very different living experiences, with different social norms, culture based assumptions, and even physical infrastructure that affects how people do things and perceive the world around them.

So why did I test this same model in these two very different samples? I thought that material values would be present in both (though in slightly different forms and at different levels) and function in the same way in both samples. I expected that the

cultural context of consumerism was similar enough that material values would function as a general values system related to socially normative gender and environmental attitudes. Even though these two samples cannot be directly compared, it is important and useful to discuss what is learned when thinking about the relationships among variables in the two studies in relation to each other. The similarities and differences in the relationships among the variables in these two samples can help inform our understanding of what factors may possibly affect the psychological variables under study in these individuals.

The results of both studies were remarkably similar on several counts. In both samples, participants' material values were negatively related to their ecocentric attitudes and environmental behaviors, authoritarianism was related to gender attitudes (negatively to feminist attitudes, positively to traditional attitudes) and negatively related to ecocentric attitudes, and gender attitudes and environmental attitudes were related to each other in the expected directions. This indicates that at least these variables may relate to each other in similar ways in limited contexts (e.g., members of other industrialized nations, highly influenced by European culture, both socially and politically).

There were three differences in relationships amongst variables between the two samples. The most notable difference was the absence of the predicted relationship between material values and authoritarianism in the Radcliffe sample that was present in the Buenos Aires samples. However, this relationship *was* present in the wealthier sub-set of the Radcliffe sample. It was absent in the non-university educated group in Buenos Aires as well as in the lower household income group of Radcliffe, both the lower resourced, lower class status sub-sets relative to their peers in their respective samples. The unanticipated finding that material values and authoritarianism were related in certain groups, namely among Argentine men and those with higher relative resources (education or income) in both samples, and unrelated among Argentine women and groups with fewer socio-economic resources raised significant questions about the roles of gender and class in psychological variables related to hierarchy and the support of socially normative attitudes and beliefs.

The second difference was that in the Buenos Aires sample there was a relationship between material values and gender attitudes whereas there was no relationship between these two variables in Radcliffe. This could be due to cultural differences in consumption in these two contexts. Consumption among the general population in Buenos Aires may be more frequently associated with conventional, traditional gender roles (e.g., in advertising) whereas the Radcliffe women, as a demographic niche targeted in ways that may not highlight traditional gender attitudes as often, may not be as exposed nor as open to these advertising messages. Also, there was a difference in gender attitude measurement; the Radcliffe participants were assessed in terms of their support for feminist attitudes whereas the Buenos Aires participants were assessed in terms of their support for traditional gender attitudes.

The last difference in relationships was that ecocentric attitudes were positively correlated with environmental behaviors in the Radcliffe sample but there was no relationship in the Buenos Aires sample. This difference could be due to structural differences and issues of access to environmental behaviors between the Argentina and the U.S. It could also be due to the difference in the nature of the behaviors measured in the two samples, i.e. ecocentric attitudes predict activist behavior but not everyday environmental behavior.

Overall Conclusions

Hierarchical systems and supporting psychological variables

On the surface, materialism is about a desire for material goods as a means to happiness and seeing possessions as a marker of success. But these studies lend support to the idea that material values are rooted in a hierarchical ideology. There is evidence that material values are connected to attitudes that support socially-normative, hierarchical systems. There were relationships in the contexts examined between having material values and *not supporting* environmentalist attitudes that have the potential to disrupt current, hierarchically structured systems and *supporting* inequitable attitudes about gender. There was also more limited evidence for material values being related to

a lack of support for feminist attitudes. This study and previous research shows that authoritarianism is strongly related to these same sets of attitudes that material values are related to and that support a hierarchical ideology. Authoritarianism, even at low levels and across cultural contexts, was more consistently and more highly correlated to the predicted attitudes than material values. This pattern of correlation and evidence for authoritarianism's mediating function suggests that it is more strongly related to support for or rejection of hierarchical attitudes about gender and the environment than material values. However, material values remain a reliable correlate of attitudes that support gender based hierarchy and negatively correlate with gender and environmental attitudes that disrupt conventional hierarchies.

These two variables, while demonstrating similar patterns of relationship with hierarchical, normative attitudes, were not always related to each other. Also, authoritarianism did not always mediate the relationships between material values and environmental and gender attitudes. The mixed support from the Buenos Aires and Radcliffe studies for the idea that material values are related to authoritarianism reflects mixed findings in the literature (though it should be noted that there is scant research on the topic, with only 2 other known studies done on the subject). In the studies I presented here, holding materialist values did not consistently relate to being an authoritarian but was sometimes dependent on a person's membership in gender and class groups.

Social Context

Gender and class both affected the strength and pattern of relationships among attitudes and values in both samples. In the higher resourced and higher status groups of both samples (men, the university educated, the wealthy), those with higher levels of materialistic values were also more authoritarian than those with lower levels of materialistic values but this was not the case for their lower resourced peers. Material values were related to authoritarianism in the general Buenos Aires sample but when divided into class groups, only upper class members' material values were related to authoritarianism, and when divided into gender groups, only men's material values were related to authoritarianism. In the Radcliffe sample, there was no relationship

between material values and authoritarianism in the general sample. But when the sample was divided into class groups, the relationship did emerge for the upper class group. These findings suggest that upper class status, relative to one's peers, is a social context conducive to material values being linked to authoritarianism while relative lower class status is not conducive to this relationship. However, the relative nature of this class context is noteworthy. The Radcliffe sample generally has many more resources, e.g., college and post-graduate levels of education, an average household income of about \$100k, and living in communities with high standards of living, well-developed public infrastructures, and greater economic security than in Buenos Aires. In a global hierarchy, the Radcliffe participants are on a "higher rung" than the Buenos Aires participants. This would suggest that the Radcliffe participants' material values would be linked to authoritarianism while the Buenos Aires participants' would not. However the data do not fit that expectation; there was correspondence only for the high income Radcliffe participants and for the Buenos Aires sample as a whole and for men and the highly educated considered separately. This indicates that the role of status and/or personal resources in the correspondence of material values and authoritarianism is specific to a person's *local* experience of status. Class status may affect how closely a person associates material values with authoritarianism but it depends upon a high status or access to resources relative to one's peers, not to distant, unseen peers in a larger global hierarchy. This is important because this means that there is not necessarily a material threshold that allows for a correlation of material values with authoritarianism in a person's psychology. The Radcliffe "lower" class certainly has greater material wealth and access to resources than the Buenos Aires "upper" class. Instead, elevated status or dominant group membership may incline a person towards this outcome, irrespective of the "floor" or "ceiling" of material wealth or resources. The social context based differences in these studies imply that the existence of a hierarchy and being a "winner" within it may promote a greater coherence in attitudes while having a middle or low status may promote either adoption or rejection of material values unrelated to adoption or rejection of authoritarian attitudes. For the privileged, materialism is related to authoritarianism. For the less privileged, it isn't; the belief in material goods representing success, being a route to happiness, and acquiring

things being important to a person are *not* related to being subservient, conventional, and willing to aggress against norm violators. This outcome might be a result of men and members of the upper classes having greater control of and access to money while women and members of the middle and lower classes have less control and more limited access to money. If you're an upper class person, having an authoritarian outlook and supporting conventional forms of control increases your access to money whereas if you're a middle or lower class person, supporting conventional authority is less likely to increase your access to material wealth but could possibly limit it. This explanation is also applicable to understanding the gender difference; part of traditional belief systems in the US and Argentina is that women should be limited to unremunerated work in the private sphere or lower paying positions in the public sphere, and material wealth should be accessed primarily through a man who is engaged in higher paying work in the public sphere.

Implications of social context differences

The results revealed differences in coherence among attitudes, more than in levels of endorsement. The difference in coherence suggested that when a hierarchical system doesn't benefit a person, one is less likely to support the system in total or one's support is more selective. This is a purely speculative interpretation but it suggests to me that when you are in a lower position in a social hierarchy, you're less likely to embrace the idea of hierarchy being an appropriate way of structuring society *across domains*. It is not the case that people with greater privilege necessarily accept hierarchy across the board – they often reject it. But it is likely that the more they accept material values as part of their value system, the more they accept the whole “package” of other hierarchically structured attitudes. Conversely, the more they reject material values, the more they reject the same “package” of beliefs. For people in subordinate groups with less privilege, their acceptance of material values may or may not correlate with an acceptance of a hierarchical structuring of society or willingness to obey authorities and submit to their conventions.

Ecofeminism

Consistent with ecofeminist theory that maintains that in contemporary societies there is coherence in attitudes about gender and the natural environment (Merchant, 1980, 2003; Reuther, 1993; Shiva & Mies, 1993), those who supported traditional gender attitudes did not tend to have an ecocentric view of the natural environment. While there has been evidence for this connection in historical and sociological studies, this study provided an empirical test for locating this connection within the individual person's psychology. Ecofeminists have been making an argument that should be taken seriously by both feminists and environmentalists: there are parallel systems of domination in our beliefs about gender and the environment and they are connected to each other. These beliefs justify and bolster subsequent structures that enable women and nature to be treated as subordinates in similar ways.

Environmental Behavior

Material values and ecocentric attitudes seem to be related to engagement in environmental behaviors, in that having material values is related to a lack of engagement in both everyday and activist environmental behaviors and having ecocentric attitudes is related to activist environmental behavior and, in a high education group, everyday activities. The relationships are modest but material values were consistently negatively related to pro-environmental behavior, while ecocentric attitudes, the psychological construct I expected to be most predictive of environmental behavior, were less consistently related.

Materialistic values are focused on the acquisition of possessions, necessarily entailing the consumption of resources. Some pro-environmental behaviors directly target resource conservation at the level of personal consumption choices, such as reducing fuel consumption by taking public transportation or re-using goods instead of buying them new. Even though many other environmental actions are not related specifically to reducing material consumption, many are tangentially related to consumption via production or resource conservation, e.g. pollution regulation, forest protection, and reducing greenhouse gas emissions. Also, many pro-environmental

actions that require resource conservation are currently low status actions, like using public transportation, or actions associated with poverty like re-using products or owning a small number of older clothes (Schor, 1998). Many pro-environmental behaviors include moving away from individual ownership towards communal ownership, also counter to materialistic values that stress the importance of individual possession (Kasser, 2002). Given the opposing goals of materialistic values and pro-environmental behavior, the connection between having materialistic values and lower levels of engagement in pro-environmental actions makes sense. Thinking about the implications of this relationship between material values and environmental behavior, would campaigns to change attitudes about the environment affect behavior or would campaigns to change support for materialistic goals be more effective? In both samples, material values were connected to environmental behavior, both activist and everyday, despite the problems with the everyday behavior measure. The data here are not adequate to draw firm conclusions but suggest that one route to changing behavior could be through material values. However, the strategy of trying to change environmental attitudes in order to change behaviors is actually less certain.

According to the Value-Belief-Norm model of behavior (Stern, 1992) ecocentric attitudes would be more likely than material values to predict environmental behavior since ecocentric attitudes are more specifically related to these behaviors. Ecocentric attitudes were related to activist behaviors in Radcliffe and everyday behaviors only in the more highly educated sub-sample in Buenos Aires. These findings raise three considerations: 1) ecocentric attitudes may be good predictors of activist behavior and not as good predictors of everyday behaviors, 2) ecocentric attitudes may be most relevant as predictors of behavior in privileged groups, and 3) the measure of everyday environmental behaviors may have been problematic in that people were not able to express their ecocentric attitudes (i.e., “live their values) through the behaviors presented in the survey due to lack of opportunity or lack of relevance of the behaviors in their lives. I believe this last point, the difficulty in assessing environmental behavior, was a primary limitation in this analysis. These studies highlighted the problems with measuring environmental behavior, particularly measuring individual action within the context of structural opportunities and barriers. Structural factors and

opportunity can greatly constrain or facilitate a person's engagement in environmental activities, particularly everyday environmental activities, and it is difficult to account for these in a limited set of behaviors in a survey.

Limitations and future directions

These studies have demonstrated that measuring environmental behavior is a challenge for several reasons. A primary challenge encountered in these studies is being able to identify pro-environmental behaviors, especially considering the different contexts in which people live. Even among people with very similar backgrounds and current lifestyles, the actual opportunity for engaging in a set of behaviors can vary tremendously due to context-dependent opportunities and constraints (e.g. local infrastructure, demands placed on one's time). A person's opportunity to act in environmentally sustainable ways can reflect "bigger" choices that in turn reflect one's level of environmental concern (e.g., having to commute long distances in a car between home and work can reflect a choice to live far from one's work because of prioritizing factors such as house size or taxes over environmental impact considerations). It can also be unrelated to one's environmental concern and reflect an inability to live out one's priorities due to factors beyond one's control (e.g., choosing a home far from work because of being unable to afford housing closer to one's workplace or having to change jobs more often than one can change homes). Measures of frequency of engagement cannot distinguish these differences. Qualitative follow-up would be useful to help understand the larger context and string of decisions, opportunities, and limits that have contributed to an outcome. This qualitative exploration would also help development of better measures of behavior that could better assess the context of a behavior as well as the outcomes. A second issue we face in understanding the motivations and actual engagement in environmental behavior is that we do not assess intention when only assessing the occurrence of a behavior. Understanding motivation for a behavior is important because it can help us predict whether people will continue to engage in an activity, and assess their commitment to a behavior. People who engage in environmental behaviors with intentions other than protecting the environment may not continue to engage in a behavior if an incentive is

removed or barrier appears. For example, if a person recycles cans mainly because of the financial incentive of a claiming a deposit refund, and the refund system is eliminated it is unlikely the person will continue to recycle their cans at the same level they did before. Some behaviors could also be engaged in out of habit. As long as the habit continues and the outcome is desirable, we may not be concerned with its motivation. But habits can change when the structures that support them change and it would be helpful to know what structures need to be in place to sustain a habit or if non-structural, psychological motivations could motivate the same behavior when structural supports are removed. Assessing frequency of a behavior is a start to understanding people's engagement in activities but frequency alone is a poor guide to understanding the origins and intended consequences of an action.

In these studies gender-related behavior was not measured. Again there is a problem of assessing both the intended meaning and the consequences of a behavior. Does engaging in a behavior traditionally associated with one gender (e.g. painting one's nails) indicate gender conformity and thus attitudes supportive of traditional gender norms? Assessing what mainstream (and unconventional) gendered behavior is requires knowledge of the social norms and gender-related conventions of behavior that can vary according to context, such as age cohort, class cohort, or location. While some generalizations can be made across contexts, a better measure would be context-specific, or even person-specific (though the utility of a person-specific measure is low). Qualitative study of how much women and men believe they are asserting gender identity through certain actions and what engaging in conventional or unconventional gender behaviors means to them could be a first step in developing a measure for quantitative use as well as being helpful in itself in understanding what attitudes and beliefs about gender are characteristic of people who engage in certain sets of behaviors. Expressions of gender through consumption behaviors would be of particular interest to better understand connections with material values and gender attitudes, and possibly environmental attitudes.

Another limitation of this project was that the sample of Radcliffe alumnae used in Study 2 was a very narrow demographic slice of the US population. Testing this model with samples that include men and adults across a wide range of ages and income

levels would help us understand the contextual influences on and how generalizable this model might be in the US population. It would also be useful to include measures of both activist and everyday environmental behaviors in a larger survey of adults to see if material values and ecocentric attitudes were related to a range of behaviors since I only examined activist behaviors in the US sample and only everyday behaviors in the Buenos Aires sample.

The Radcliffe study participants had very low levels of material values and authoritarianism that may indicate that these women do indeed have low levels of these values and attitudes. But it is possible that these measures do not tap into these constructs with these groups – in other words, that the women do have material values and authoritarian attitudes but not as expressed in these measures. This seems unlikely for authoritarianism since the Altemeyer measure has been tested in many groups and refined over many years of administration. Material values, however, seems more likely to suffer from a problem of measurement. Materialism as measured in the MVS may reflect a more middle and working class vision of materialism, instead of capturing the concerns with connoisseurship and experience via material goods that some literature indicates may be relevant to members of the upper class but not so important to members of the middle and lower classes (Holt, 1998). This means their materialism has a different form and expression, not that it doesn't exist.

Another psychological variable to consider is social dominance orientation (SDO). While right-wing authoritarianism (RWA) reflects an acceptance of authority based, hierarchical social structures, social dominance orientation reflects a desire to dominate others in a hierarchical system, primarily through the dominance of one's social groups (Sidanius & Pratto, 1999; Sidanius, Levin, Federico & Pratto, 2001). There is evidence in the literature suggesting a connection between materialism and SDO, in fact a stronger connection than that between RWA and materialism (Roets et al., 2006). If both RWA and SDO are related to materialism and gender and environmental attitudes in different samples, this could further strengthen the model proposed here and increase the evidence supporting the idea that hierarchical ideologies generally are an important feature in this constellation of beliefs. Or if there is not a connection between SDO and materialism, we would know that hierarchy is less

important than I have proposed. Parsing out the difference between accepting domination and desire to dominate in these relationships can also help us understand the motivations for holding material values and supporting more traditional attitudes towards gender and the environment.

Future studies could also have practical benefits for activists advocating for institutional and individual behavioral changes; these outreach activities can also be a source of information for studies. Environmentalists promoting sustainable consumption through appeals to reject hierarchically structured systems (e.g., rebel against authority, remove oneself from capitalist market systems) might especially appreciate the findings regarding the importance and nuance of social context. People who are dominant in socio-economic hierarchies and who espouse ecocentric, feminist, and other hierarchy-rejecting attitudes might respond well to calls to break away from material values in ways that are tied to rejecting authoritarian structures. However, such appeals might have the opposite effect on conservatives dominant in the hierarchy. It is harder to predict the outcome of appeals to change gender or environmental attitudes or behavior that include a rejection of authority-based social structures and a rejection of material values in subordinate group members as compared to members in a dominant group. People not at the top of the socio-economic hierarchy may or may not be responsive to campaigns that tie rejecting material values with larger calls to reject hierarchical systems. One possible way of studying this interaction of psychological factors and socio-economic context could be to plan an actual behavioral change campaign or modify an existing one. In a real intervention in two cities with very different socioeconomic situations, one could craft different messages to change a specific behavior, such as reducing use of toxic household products, to 1) include appeals to reject authority and social conventions, 2) specifically not reference systems of domination, 3) address material values and appeal to reject them, 4) specifically avoid reference to material values and 5) include an appeal to reject both material values and conventional authority. These could be targeted to different households and their use of toxic household products could be monitored. Differences based on message, city of residence, individual socio-economic circumstances, and the

interactions of these conditions, could help illuminate how and why people respond to different appeals, and which is more effective and for whom.

Gathering qualitative data from open-ended interviews is another way to better understand how gender, class, and gender by class groups perceive hierarchy, their relationship to it, and materialism. This kind of study would give researchers and activists a better sense of what material values mean to those in less secure or marginalized positions in social and economic hierarchies and thus what kinds of messages might be more appealing in attempts to change those values and related behaviors as well as identify tangible, material and structural barriers to this change. Interviews may help identify sets of ideological attitudes more appropriate to different groups that mediate material values and gender and environmental attitudes and behaviors. Quantitative studies could then examine whether the variables identified in the qualitative studies mediate material values and gender and environmental attitudes and behaviors in larger samples, and the extent of their generalizability across social, cultural and economic contexts. Individual interviews and focus groups might also help identify the non-psychological factors, primarily issues of economic and material disparity, that may prevent a person from meaningfully connecting materialistic values with systems of dominant authority and attendant traditional attitudes towards gender and the environment. Though making this connection does not necessarily result in more sustainable behaviors, the evidence linking material values to environmental behaviors suggests that lowering material values might provide a motivation or a context for increasing sustainable behaviors. And as seen in this dissertation, lower material values are associated with lower levels of authoritarianism in people that have likely achieved a greater sense of material stability and opportunity through higher class status, though it is difficult to tell whether this is due to a perception of advantage involving social comparison with lower status others or due to the experience of actual advantage or a combination of the two.

Summary

Surveying men and women of different ages, economic means and social classes in two cultures that share an economic system oriented towards consumption yet differ

in material access and success within this system on both personal and national levels, I have identified some of the individual person based and social context differences that inform a person's support for conventional beliefs about gender and the environment. Overall, there is a pattern in which people with higher levels of materialistic values expressed less support for feminist and environmentalist attitudes than those with lower levels of materialistic values. People with higher levels of authoritarianism show the same pattern of attitude support. However, people who have higher levels of materialism do not necessarily have higher levels of authoritarianism.

The theoretical model I tested with these data was that materialistic values would be related to traditional gender attitudes and a lack of support for ecocentric attitudes, and that these relationships would be partially mediated by right wing authoritarianism. Ecocentric attitudes would also predict engagement in environmental behaviors. There is mixed support for this model. There is strong support for both material values and authoritarianism being generally related to normative attitudes towards gender and the environment across national contexts. But the results of these studies also indicate that socio-historical, cultural, gender, and class contexts are highly influential in shaping values and attitudes and how they interact, warranting more nuanced explanations.

Looking at the practical implications of these findings, calls by environmentalists and feminists to disobey authority may resonate most with those who are well resourced and already have liberal attitudes but not with the well resourced who hold more conservative attitudes nor those who are not well resourced, regardless of their attitudes. Environmentalist and feminist messages that are more supportive of mainstream, conventional, hierarchical structures might appeal to those who are well resourced and who hold conservative attitudes (though since this group is marked by support of conventional gender and environmental attitudes, it seems unlikely they would respond to this appeal to reverse their attitudes) and, again, may not speak to those who aren't as well resourced in the socio-economic hierarchy, regardless of other attitudes. Environmentalist and feminist appeals to change attitudes and behaviors may be of greater interest to people lower in social and economic hierarchies, if messages are tailored to those groups and acknowledge the varying attachments people have to

materialism and authoritarianism. Effective appeals would likely need to address different values and ideologies not yet identified in these studies.

One final point: the results from this study offer clear support for the ecofeminist theory that systems of domination of women and nature that underpin the distribution and maintenance of power in Western societies, are highly relevant in concrete ways, not just in abstract terms. This study shows that conventional beliefs about gender and the environment tend to be related (as is rejection of them), and these beliefs are also related more broadly to support for hierarchical social structures, in the form of authoritarianism. These conventional beliefs are also often related to material values, values that, as a result of their primary function or as an unintended consequence, support inequitable material distribution based on social hierarchies.

APPENDICES

Appendix A

Demographic summary, Studies 1 & 2

	<u>Buenos Aires</u>	<u>Radcliffe</u>
<i>Sample size</i>	240	105
<i>Women</i>	142	105
<i>Men</i>	97	0
<i>Age range</i>	18-81 (18-28 is largest group)	62-64
<i>Current income bracket/ current class status</i>	Relative to Argentine population: many upper, some middle, some lower. Some experience and many perceive deprivation, across class categories	Mostly Upper
<i>Race and ethnicity</i>	Majority white, European descent	Majority white, European descent
<i>Location</i>	Large City	Varied

Appendix B

Matrix of measures used in Studies 1 & 2

	<u>Buenos Aires</u>	<u>Radcliffe</u>
<i>Materialism and beliefs about Consumption</i>		
Material Values Scale	18 items	13 items
Attitudes towards consumption questions	9 items	
<i>Right Wing Authoritarian attitudes</i>		
Right Wing Authoritarianism	12 items, shortened Spanish version	10 items
<i>Gender attitudes</i>		
Sex Role Attitude Inventory	4 public role items	N/A
Machismo scale	12 items	N/A
Intersectional Consciousness	N/A	5 items
<i>Environmental attitudes</i>		
New Environmental Paradigm	20 items	10 items
<i>Environmental behaviors</i>		
Everyday environmental behaviors	12 items	N/A
Political activism	N/A	6 items

Appendix C

Buenos Aires Study of Materialism and Radcliffe Class of 1964 Study survey items:
English version

Material Values Scale (Richins & Dawson, 1992)

(7 point Likert scale – Buenos Aires; 6 point Likert scale - Radcliffe)

Success

1. I admire people who own expensive homes, cars, and clothes.
2. Some of the most important achievements in life include acquiring material possessions.
3. I don't place much emphasis on the amount of material objects people own as a sign of success.
4. The things I own say a lot about how well I'm doing in life.
5. I like to own things that impress people.*
6. I don't pay much attention to the material objects other people own.*

Centrality

7. I usually only buy the things I need.
8. I try to keep my life simple, as far as possessions are concerned.
9. The things I own aren't all that important to me.
10. I enjoy spending money on things that aren't practical.*
11. Buying things gives me a lot of pleasure.
12. I like a lot of luxury in my life.
13. I put less emphasis on material things than most people I know.*

Happiness

14. I have all the things I really need to enjoy life.
15. My life would be better if I owned certain things I don't have.
16. I wouldn't be any happier if I owned nicer things.
17. I'd be happier if I could afford to buy more things.
18. It sometimes bothers me quite a bit that I can't afford to buy all the things I like. *

** denotes an item NOT included in the Radcliffe questionnaire*

Right Wing Authoritarianism (Altemeyer, 1998)

(7 point Likert scale – Buenos Aires; 6 point Likert scale – Radcliffe)

In BOTH Buenos Aires and Radcliffe

1. The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leaders in power, and silence the troublemakers spreading bad ideas.

2. Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly.
3. Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else.
4. There is absolutely nothing wrong with nudist camps.

Only in Buenos Aires (Seoane & Garzón, 1992)

1. It's always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubts in people's minds.
2. It'd be better for all if the authorities censured magazines and films to keep such despicable material beyond the reach of young people.
3. The facts on crime, sexual immorality, and the recent public disorders indicate all show we have to crack down harder on deviant groups and troublemakers if we want to save our moral standards and preserve law and order.
4. Gays and lesbians are just as healthy and moral as anybody else.
5. Definitely, the authorities, parents, and national leaders are usually right, while the people who are protesting don't know what they're talking about.
6. The true key to a "life of dignity" is obedience, discipline, and adherence to what is already established.
7. It's better to be open and receptive to people who are going against the establishment, because new ideas are indispensable for progressive change.
8. Our country will be great if we honor the ways of our forefathers, do what the authorities tell us to do, and get rid of the "rotten apples" who are ruining everything.

Only in Radcliffe

1. Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs.
2. The "old-fashioned ways" and "old-fashioned values" still show the best way to live.
3. What our country needs is a strong, determined leader who will crush evil, and take us back to our true path.
4. Some of the best people in our country today are those who are challenging our government, criticizing religion, and ignoring the "normal way things are supposed to be done."
5. There are many radical, immoral people in our country today, who are trying to ruin it for their own godless purposes, whom the authorities should put out of action.
6. There is no "ONE right way" to live life; everybody has to create their own way.

Intersectional Consciousness (Greenwood, 2005)

1. Understanding the life experiences of women from different ethnic groups helps women to achieve our goals.
2. In order to achieve the changes we seek, we must fight racism as well as sexism.
3. Black and white women experience sexism in different ways.

4. Sex and race are inseparable issues in the lives of women.
5. All oppressions are tied together.

Machismo scale (Cuéllar, Arnold & González, 1995)

(Buenos Aires Study only, 7 point Likert scale)

1. A man should not marry a woman who is taller than him.
2. It is the mother's special responsibility to provide her children with proper religious training.
3. Boys should not be allowed to play with dolls and other girls' toys.
4. Parents should maintain stricter control over their daughters than their sons.
5. A wife should never contradict her husband in public
6. Men are more intelligent than women.
7. No matter what people say, women really like dominant men.
8. Some equality in marriage is a good thing but by and large the father ought to have the main say so in family matters.
9. I would be more comfortable with a male boss than with a female boss.
10. It is important for a man to be strong.
11. Girls should not be allowed to play with boys' toys such as soldiers and footballs.
12. Wives should respect the man's position as head of the household.

Sex Role Attitude Inventory scale, public role items (Renzetti, 1987)

(Buenos Aires Study only, 7 point Likert scale)

1. For a woman, marriage and family should be more important than a career.
2. Most men are better suited emotionally for politics than are most women.
3. There are some jobs and professions that are more suitable for men than for women.
4. Career women tend to be masculine and domineering

New Environmental Paradigm (Dunlap, et al., 2000)

(7 point Likert scale – Buenos Aires, 6 point Likert scale - Radcliffe)

1. We are approaching the limit of the number of people the earth can support.*
2. Humans have the right to modify the natural environment to suit their needs.
3. When humans interfere with nature it often produces disastrous consequences.
4. Human ingenuity will insure that we do NOT make the earth unlivable.
5. Humans are severely abusing the environment.*
6. The earth has plenty of natural resources if we just learn how to develop them.
7. Plants and animals have as much right as humans to exist.
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
9. Despite our special abilities, humans are still subject to the laws of nature.
10. The so-called "ecological crisis" facing humankind has been greatly exaggerated.*
11. The earth is like a spaceship with very limited room and resources.
12. Humans were meant to rule over the rest of nature.
13. The balance of nature is very delicate and easily upset.

14. Humans will eventually learn enough about how nature works to be able to control it.
15. If things continue on their present course, we will soon experience a major ecological catastrophe. *

** denotes an item NOT included in the Radcliffe questionnaire*

Everyday environmental behavior (Clayton, 2003 - modified)

(Used only in Buenos Aires Study. 5 point Likert scale, 0 = never do; 4 = always do)

1. Drop litter in the street (e.g., cigarettes, papers, etc.)
2. Buy used furniture and clothes, etc. whenever possible.
3. Get new, disposable bags whenever I shop.
4. Buy organic produce or grow one's own without chemicals.
5. Attempt to buy food and other products with minimal packaging.
6. Use aerosol cans.
7. Participate in the activities of local environmental groups.
8. Vote for political figures on the basis of their environmental positions.
9. Drive my own car whenever possible. (If not applicable check) (DROPPED)
10. Donate money to environmental organizations.
11. Take public transportation whenever possible. (DROPPED)
12. Let the water run when washing the dishes or brushing my teeth.
13. Throw recyclables (e.g., paper, aluminum cans, bottles) in the trash (don't separate for cartoneros).

Involvement in environmental political activities (Fendrich & Lovoy, 1988; Cole & Stewart, 1996 - modified)

(Used only in Radcliffe study. Presence/absence checklist; check indicates involvement in past 9 years)

1. Signed a petition
2. Contributed money
3. Wrote a letter or called a public office
4. Attended a meeting
5. Was an active member of an organization
6. Attended a rally or demonstration

Appendix D

Buenos Aires Study of Materialism survey items: Spanish version/ Las preguntas de la encuesta de la Investigación de Materialismo en Buenos Aires: Versión Español

Material Values Scale

Éxito

1. Admiro a la gente que posé casas caras, coches y ropas lujosas.
2. Algunas de las metas más importantes en la vida incluyen el obtener bienes materiales.
3. Disfruto gastando dinero en cosas que no son prácticas.
4. Sería más feliz si pudiera comprarme más cosas.
5. No pongo mucho énfasis en la cantidad de bienes materiales que la gente posee como una forma de éxito.
6. Me gusta poseer cosas que impresionan a la gente.

Centralidad

7. Normalmente compro sólo las cosas que necesito.
8. Las cosas que poseo dicen mucho sobre el éxito que tengo en la vida.
9. Intento que mi vida sea simple en lo referente a las posesiones.
10. Las cosas que poseo no son tan importantes para mí.
11. El comprar cosas me da mucho placer.
12. Me gusta mucho tener lujo en mi vida.
13. Pongo menos énfasis en cosas materiales que la mayoría de la gente que conozco.

Felicidad

14. Tengo todas las cosas que necesito para disfrutar de veras la vida.
15. No le presto mucha atención a los objetos materiales que otras personas poseen.
16. Mi vida sería mejor si poseyera algunas cosas que no tengo.
17. No sería más feliz si poseyera cosas más bonitas.
18. A veces me molesta bastante el que no pueda proporcionarme el comprar algunas de las cosas que me gustaría.

Right Wing Authoritarianism

1. Siempre es mejor fiarse de los juicios de las autoridades políticas y religiosas que de lo que dicen los agitadores de nuestra sociedad que tratan de sembrar la duda.
2. Sería mejor para todos que las autoridades censuraran las revistas y películas para mantener el material despreciable fuera del alcance de los jóvenes.
3. Los crímenes, la inmoralidad sexual y los actuales desórdenes públicos, nos indican que debemos imponernos más tajantemente y tratar de acabar con los que provocan problemas, si queremos salvar nuestra moral y preservar la ley y el orden.
4. No hay nada inmoral o enfermizo en una persona homosexual.

5. En esta época de desorden y crisis, las leyes deben ser más estrictas especialmente con los agitadores y revolucionarios que pretenden cambiar el orden establecido
6. Las personas ateas y los no creyentes son sin duda alguna tan buenas y virtuosas como las que van a la iglesia regularmente.
7. Cada uno tiene derecho a tener su propio estilo de vida, sus creencias religiosas e inclinaciones sexuales siempre que no hagan daño a los demás.
8. En definitiva, las autoridades, los padres, y los líderes nacionales suelen tener razón, mientras que la gente que protesta no sabe de lo que está hablando.
9. No hay absolutamente nada malo en los campos nudistas.
10. La verdadera clave para “una vida digna” es la obediencia, la disciplina y ajustarse a lo que está establecido.
11. Es mejor estar abiertos y receptivos con las personas que van en contra de lo establecido, porque las nuevas ideas son indispensables para un cambio progresista.
12. Nuestro país sería mejor si respetáramos a nuestros antepasados e hicieramos lo que las autoridades nos dicen, y nos libráramos de las “manzanas podridas” que lo están estropeando todo.

Machismo scale

1. Un hombre no debería casarse con una mujer más alta que él.
2. Es la responsabilidad específica de la madre el instruir a los hijos en la religión.
3. No se debería permitir que los niños jueguen con muñecas, u otros juguetes para niñas.
4. Las madres y los padres deberían mantener un control más estricto de sus hijas que de sus hijos.
5. Los hombres son más inteligentes que las mujeres.
6. No importa lo que la gente diga, a las mujeres en realidad le gustan los hombres dominantes.
7. Una igualdad relativa en el matrimonio es una buena cosa, pero en general la opinión del padre es la que se debe tener más en cuenta en asuntos familiares.
8. Yo estaría más cómoda con un jefe que con una jefa.
9. Es importante para un hombre el ser fuerte.
10. No se debería permitir que las niñas jugasen con juguetes de niños, como soldados o pelotas de fútbol.
11. Las esposas deberían respetar el lugar del hombre como cabeza de familia.

Sex Role Attitude Inventory (SRAI), public roles

1. Para una mujer, el matrimonio y la familia han de ser más importantes que una carrera.
2. La mayoría de los hombres, pueden afrontar las emociones relacionadas con la política de forma más efectiva que la mayoría de las mujeres.
3. Hay trabajos y profesiones más apropiados para los hombres que para las mujeres.
4. Las mujeres profesionales tienden a ser más masculinas y dominantes.

New Ecological Paradigm

1. Nos estamos aproximando al límite máximo de gente que la Tierra puede mantener.
2. La raza humana tiene el derecho de modificar el medio ambiente para alcanzar las necesidades humanas.
3. Cuando la raza humana interfiere con la naturaleza a menudo produce consecuencias desastrosas.
4. La inteligencia humana asegurara que NO hagamos de la tierra un lugar inhabitable.
5. La raza humana está abusando seriamente del medio ambiente.
6. La Tierra tiene todos los recursos naturales que necesitamos si aprendemos a usarlos correctamente.
7. Las plantas y los animales tienen tanto derecho como la raza humana a existir.
8. El equilibrio de la naturaleza es lo suficientemente fuerte para aceptar el impacto industrial de las naciones modernas.
9. A pesar de nuestras habilidades especiales la raza humana está todavía sujeta a las leyes naturales.
10. Las consecuencias de la, hoy en día, llamada ‘crisis ecológica’ han sido desproporcionadamente exageradas.
11. La Tierra es como una nave espacial con recursos y espacios limitados.
12. La raza humana estaba destinada a gobernar sobre el resto de la naturaleza.
13. El equilibrio del medio ambiente es muy delicado y se puede turbar fácilmente.
14. La raza humana aprenderá finalmente un día lo suficiente sobre la naturaleza para poder controlarla.
15. Si las cosas continúan así muy pronto experimentaremos una gran catástrofe ecológica.

Everyday environmental behaviors

1. Tiro basura en la calle (p.ej. cigarillos, papelitos, etc.).
2. Compró muebles usados y ropa usada, etc. siempre que sea posible.
3. Consigo bolsas nuevas y de un solo uso siempre que va de compras.
4. Compró productos orgánicos o cultivo mis propios productos sin agroquímicos.
5. Intento comprar alimento y otros productos con el empaquetado mínimo.
6. Uso productos en latas de aerosol.
7. Participo en las actividades de los grupos protectores del medio ambiente.
8. Voto por los políticos en base a sus posiciones medio ambientales.
9. Conduzco mi coche propio siempre que puede hacerlo (si no aplicable, marque).
10. Dono dinero a las organizaciones protectoras del medio ambiente.
11. Tomo transporte público siempre que sea posible.
12. Dejo el agua corriendo cuando lavo los platos o me lavo mis dientes.
13. Tiro los productos reciclables (papel, botellas, latas aluminios, etc.) en la basura (no separé para los cartoneros).

Appendix E

Regression analyses assessing material values as a mediator between authoritarianism and gender and environmental attitudes, Buenos Aires and Radcliffe studies

Figure E.1 Buenos Aires Study: Summary of Regression Analysis to Examine Role of Material Values as Mediating the Relationship of RWA with NEP, All Participants (n=240)

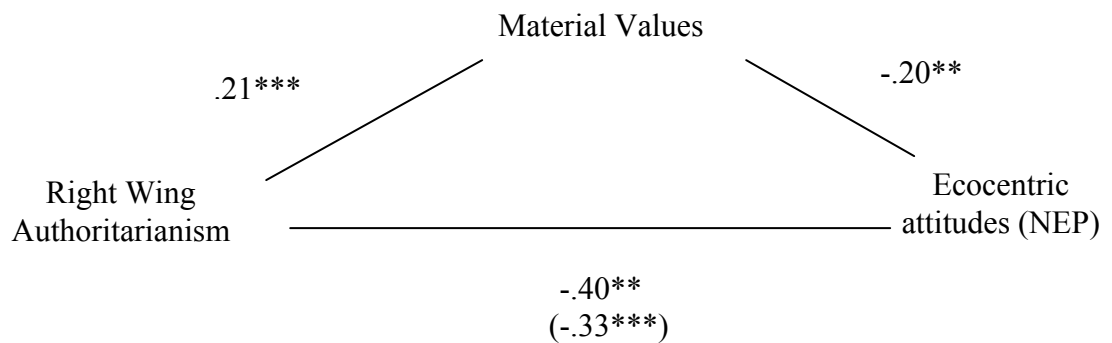


Figure E.2 Buenos Aires Study: Summary of Regression Analysis to Examine Role of Material Values as Mediating the Relationship of RWA with Traditional Gender Attitudes, All Participants (n=240)

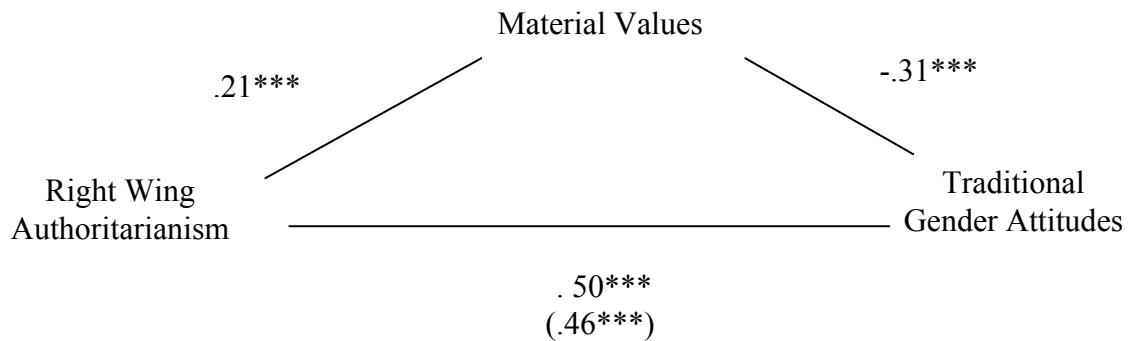


Figure E.3 Buenos Aires Study: Summary of Regression Analysis to Examine Role of Material Values as Mediating the Relationship of RWA with Ecocentric Attitudes, Men Only (n=97)

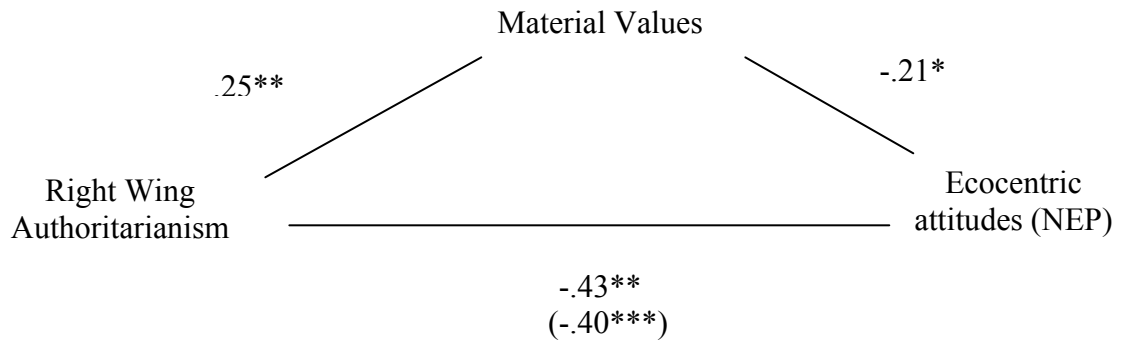


Figure E.4 Buenos Aires Study: Summary of Regression Analysis to Examine Role of Material Values as Mediating the Relationship of RWA with Traditional Gender Attitudes, Men Only (n=97)

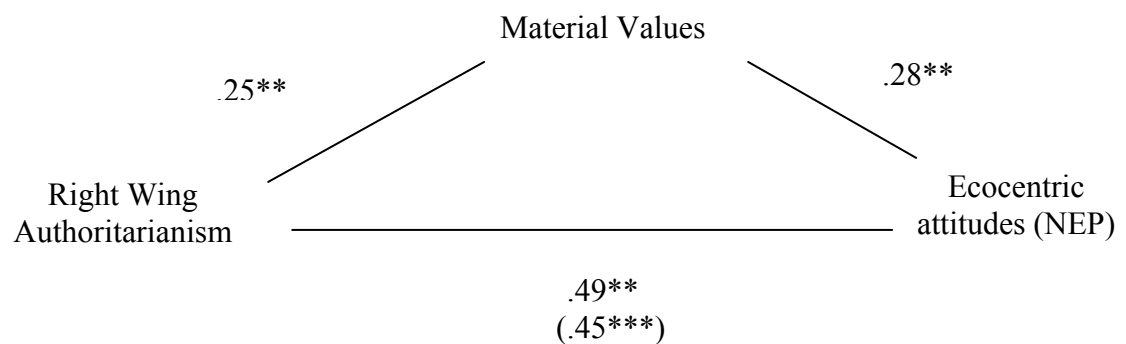


Figure E.5 Buenos Aires Study: Summary of Regression Analysis to Examine Role of Material Values as Mediating the Relationship of RWA with Ecocentric Attitudes, Participants Who Have a University Education

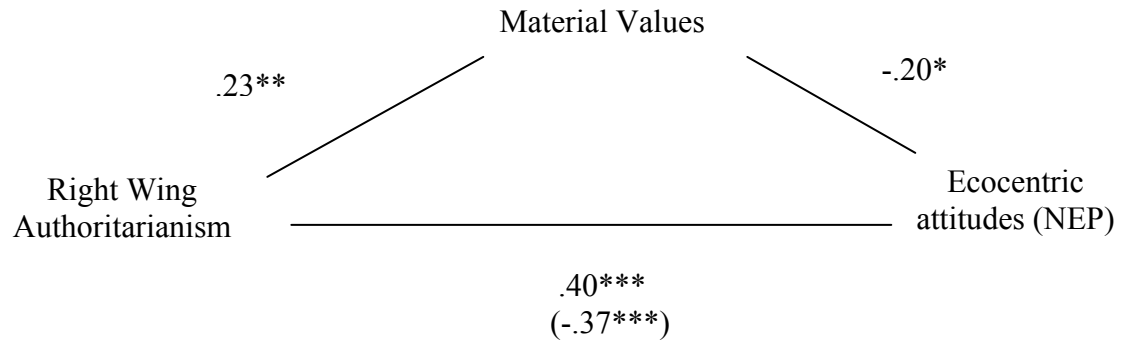


Figure E.6 Buenos Aires Study: Summary of Regression Analysis to Examine Role of Material Values as Mediating the Relationship of RWA with Traditional Gender Attitudes, Participants Who Have a University Education

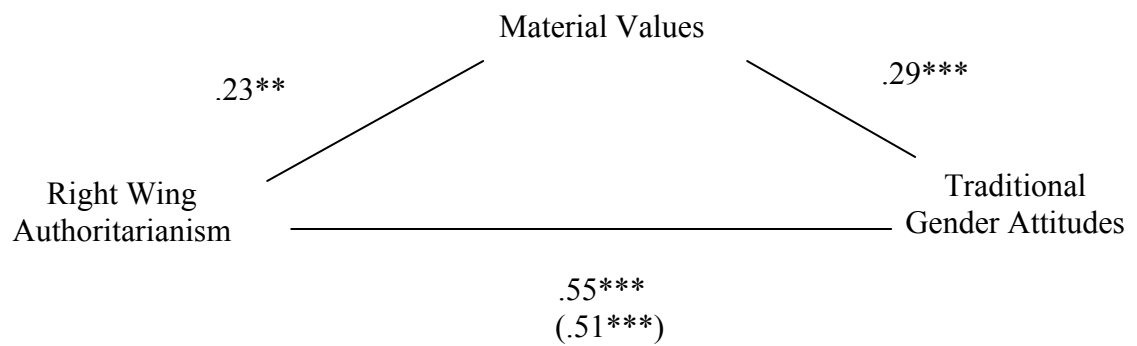
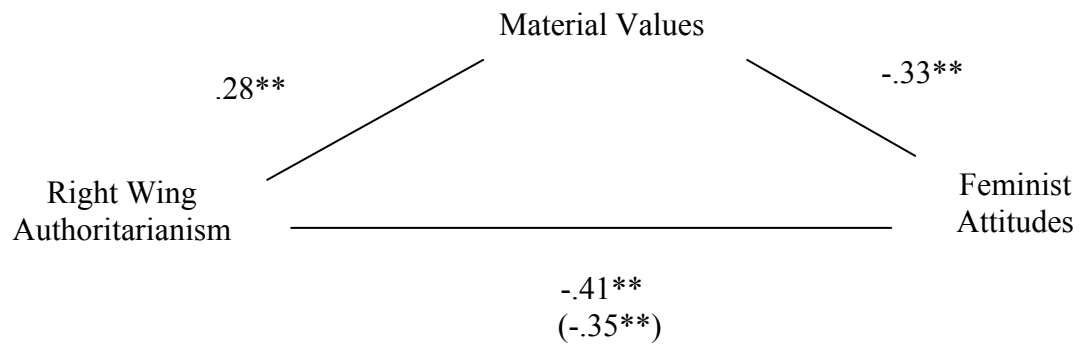


Figure E.7 Radcliffe Study: Summary of Regression Analysis to Examine Role of Material Values as Mediating the Relationship of RWA with Feminist Attitudes, Participants with Household Income Greater than \$100k (n =50-55)



BIBLIOGRAPHY

Bibliography

- Aini, M.S., Fakhru'l-Razi, A., Lau, S.M., & Hashim, A.H. (2002). Practices, attitudes and motives for domestic waste recycling. *International Journal of Sustainable Development and World Ecology*, 9(3), 232-238.
- Abramson, P.R. & Inglehart, R. (1995). *Value change in global perspective*. Ann Arbor, MI: University of Michigan Press.
- Altemeyer, B. (1988). *Enemies of freedom: Understanding right-wing authoritarianism*. San Francisco: Jossey-Bass Publishers.
- Altemeyer, R. (1996). *The authoritarian specter*. San Francisco: Jossey-Bass Publishers.
- Altemeyer, B. (1998). *A 20-item version of the RWA scale*. Unpublished paper. Winnipeg: University of Manitoba.
- Ajzen, I. & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Appaduarai, A. (1986). *The social life of things: Commodities in cultural perspective*. Cambridge: Cambridge University Press.
- Arbuthnot, J. (1977). The roles of attitudinal and personality variables in the prediction of environmental behavior and knowledge. *Environment and Behavior*, 9(2), 217-232.
- Astorga, P., Berges, A. R., & Fitzgerald, V. (2005). The standard of living in Latin America during the twentieth century. *The Economic History Review*, 58(4), 765-796.

- Balderjahn, I. (1988). Personality variables and environmental attitudes as predictors of ecologically responsible consumption patterns. *Journal of Business Research*, 17(1), 51-56.
- Bardi, A., & Schwartz, S. H. (2003). Values and behavior: Strength and structure of relations. *Personality and Social Psychology Bulletin*, 29(10), 1207-1220.
- Bernasek, A. (2006, Aug 6). The rich spend just like you and me. *New York Times*, 3.4.
- Black, J. S., Stern, P. C., & Elworth, J. T. (1985). Personal and contextual influences on household energy adaptations. *Journal of Applied Psychology*, 70(1), 3-21.
- Bodur, M., & Sarigollu, E. (2005). Environmental sensitivity in a developing country: Consumer classification and implications. *Environment and Behavior*, 37(4), 487-510.
- Bordo, S. (1993). *Unbearable Weight: feminism, Western culture, and the body*. Berkeley: University of California Press.
- Bourdieu, P. (1984). *Distinction: a social critique of the judgment of taste* (Richard Nice, Trans.). Cambridge, MA: Harvard university Press. (Originally published in 1979)
- Brechin, S.R. (1999). Objective problems, subjective values, and global environmentalism: evaluating the postmaterialist argument and challenging a new explanation. *Social Science Quarterly*, 80(4), 793 – 817.
- Brechin, S. R., & Kempton, W. (1994). Global environmentalism: A challenge to the postmaterialism thesis? *Social Science Quarterly*, 75(2), 245-269.
- Burgess, D., & Borgida, E. (1999). Who women are, who women should be: Descriptive and prescriptive gender stereotyping in sex discrimination. *Psychology, Public Policy, and Law*, 5(3), 665-692.
- Chatterjee, A., & Hunt, J. M. (1996). Self-monitoring as a personality correlate of materialism: An investigation of related cognitive orientation. *Psychological Reports*, 79(2), 523-528.
- Chatterjee, A., Hunt, J. M., & Kernan, J. B. (2000). Social character of materialism. *Psychological Reports*, 86(3), 1147-1148.
- Clark, C. F., Kotchen, M. J., & Moore, M. R. (2003). Internal and external influences on pro-environmental behavior: Participation in a green electricity program. *Journal of Environmental Psychology*, 23(3), 237-246.

- Clayton, S. (2003). Environmental identity: A conceptual and an operational definition. In S. Clayton & S. Opatow (Eds.), *Identity and the natural environment* (pp. 45-65). Cambridge, MA: MIT Press.
- Cole, E. R., & Stewart, A. J. (1996). Meanings of political participation among black and white women: Political identity and social responsibility. *Journal of Personality and Social Psychology*, 71(1), 130-140.
- Cordano, M., Welcomer, S. A., & Scherer, R. F. (2003). An analysis of the predictive validity of the new ecological paradigm scale. *Journal of Environmental Education*, 34(3), 22-28.
- Cuéllar, I., Arnold, B., & González, G. (1995). Cognitive referents of acculturation: Assessment of cultural constructs in Mexican Americans. *Journal of Community Psychology*, 23, 339-356.
- D'Adamo, O. J., & García Beaudoux, V. (1996). Creencias sociales contemporáneas y sistema democrático. *Psicología Política*, 12, 35-45.
- D'Adamo, O. J., García Beaudoux, V., & Ferrari, G. (1995). Actitudes sociopolíticas, autoritarismo, categorización y contexto social. *Psicología Contemporanea*, 2(2), 70-75.
- Dalton, R. J., Gontmacher, Y., Lovrich, N. P., & Pierce, J. C. (1999). Environmental attitudes and the new environmental paradigm. In R. J. Dalton, P. Garb, N. P. Lovrich, J. C. Pierce, & J. M. Whitely (Eds.), *Critical masses: Citizens, nuclear weapons production, and environmental destruction in the United States and Russia* (pp. 195--230). Cambridge, MA: MIT Press
- Dietz, T., Stern, P. C., & Guagnano, G. A. (1998). Social structural and social psychological bases of environmental concern. *Environment and Behavior*, 30(4), 450-471.
- Duncan, L. E., Peterson, B. E. & Winter, D. G. (1997). Authoritarianism and gender roles: Toward a psychological analysis of hegemonic relationships. *Personality and Social Psychology Bulletin*, 23(1), 41-49.
- Duncan, L. E., Peterson, B. E., & Ax, E. E. (2003). Authoritarianism as an agent of status quo maintenance: Implications for women's careers and family lives. *Sex Roles*, 49(11), 619-630.
- Duncan, L.E. (2006). What feminist and political psychologists can learn from each other: The case of authoritarianism. *Feminism & Psychology*, 16(1), 58-64.

- Dunlap, R. E., & Van Liere, K. D. (1978). The "new environmental paradigm": A proposed measuring instrument and preliminary results. *Journal of Environmental Education*, 9, 10-19.
- Dunlap, R.E., Van Liere, K.D., Mertig, A.G., & Jones, R.E. (2000). Measuring endorsement of the New Ecological Paradigm: a revised NEP scale. *Journal of Social Issues*, 56(3), 425-442.
- Duriez, B., Vansteenkiste, M., Soenens, B. & De Witte, H. (under review). The Social Costs of Extrinsic Relative to Intrinsic Goal Pursuits: Their Relation with Right-Wing Authoritarianism, Social Dominance, and Prejudice.
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.
- Eagly, A. H., Wood, W., & Diekmann, A. B. (2000). Social role theory of sex differences and similarities: A current appraisal. In T. Eckes, & H. M. Trautner (Eds.), *The developmental social psychology of gender* (pp. 123-174). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Ebreo, A., & Vining, J. (2001). How similar are recycling and waste reduction? Future orientation and reasons for reducing waste as predictors of self-reported behavior. *Environment and Behavior*, 33(3), 424-448.
- ECLAC (Economic Commission for Latin America and the Caribbean). (2007). *Social Panorama of Latin America 2006. United Nations Publication LC/G.2326-P*. ISSN Online version 1684 – 1425. Santiago, Chile: United Nations Publications. Retrieved June 25, 2007, from ECLAC Website: <http://www.eclac.org/cgi-bin/getProd.asp?xml=/publicaciones/xml/4/27484/P27484.xml&xsl=/dds/tpl-i/p9f.xsl&base=/tpl-i/top-bottom.xsl>
- Eisenstein, Z.R. (Ed.). (1979). *Capitalist patriarchy and the case for socialist feminism*. New York: Monthly Review Press.
- Fahs, B. (2007). Second shifts and political awakenings: Divorce and the political socialization of middle-aged women. *Journal of Divorce & Remarriage*, 47, 43-66.
- Faludi, S. (1991). *Backlash: the undeclared war against American women*. New York: Anchor Books, Doubleday.

- Fendrich, J. M., & Lovoy, K. L. (1988). Back to the future: Adult political behavior of former student activists. *American Sociological Review*, 53(5), 780-784.
- Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley Publishing Co.
- Fiske, S. T., & Stevens, L. E. (1993). What's so special about sex? Gender stereotyping and discrimination. In S. Oskamp, & M. Costanzo (Eds.), *Gender issues in contemporary society* (pp. 173-196). Newbury Park, CA: Sage Publications, Inc.
- Gagnon-Thompson, S. C., & Barton, M. A. (1994). Ecocentric and anthropocentric attitudes toward the environment. *Journal of Environmental Psychology*, 14(2), 149-157.
- Galbraith, J. K. (1958). *The affluent society*. Boston: Houghton Mifflin.
- Gamba, R. J., & Oskamp, S. (1994). Factors influencing community residents' participation in commingled curbside recycling programs. *Environment and Behavior*, 26(5), 587-612.
- Gardner, G. T., & Stern, P. C. (1996). *Environmental problems and human behavior*. Needham Heights, MA: Allyn & Bacon.
- Gelman, S. A., & Taylor, M. G. (2000). Gender essentialism in cognitive development. In P. H. Miller, & E. Kofsky Scholnick (Eds.), *Toward a feminist developmental psychology* (pp. 169-190). New York: Routledge.
- Greenwood, R.M. (2005, May 5). *Intersectional Consciousness*. Paper presented at the Midwestern Psychological Association annual meeting, Chicago, IL.
- Guagnano, G. A., Stern, P. C., & Dietz, T. (1995). Influences of attitude-behavior relationships: A natural experiment with curbside recycling. *Environment and Behavior*, 27(5), 699-718.
- Haddock, G. & Zanna, M. P. (1994). Preferring “housewives” to “feminists”: categorization of the favorability of attitudes toward women. *Psychology of Women Quarterly*, 18, 25-52.
- Hansen, A. (2002). Discourses of nature in advertising. *The European Journal of Communication Research*, 27 (4), 499-511.
- Hochschild, A.R. (1983). *The managed heart: Commercialization of human feeling*. Berkeley: University of California Press.

- Hochschild, A.R. (1989). *The second shift: Working parents and the revolution at home*. New York: Viking.
- Holt, D. B. (1998). Does Cultural Capital Structure American Consumption? *Journal of Consumer Research*, 25(1), 1-25.
- Hunt, J. M., Kernan, J. B., Chatterjee, A., & Florsheim, R. A. (1990). Locus of control as a personality correlate of materialism: An empirical note. *Psychological Reports*, 67(3), 1101-1102.
- Inglehart, R. (1997). *Modernization and postmodernization: Cultural, economic, and political change in 43 societies*. Princeton, N.J. : Princeton University Press.
- Inglehart, R. (Ed.). (2003). *Human values and social change: Findings from the values surveys*. Boston: Brill.
- Inglehart, R. (2005). *Modernization, cultural change, and democracy: The human development sequence*. New York: Cambridge University Press.
- Inglehart, R. & Norris, P. (2003). *Rising tide: Gender equality and cultural change around the world*. Cambridge, UK: Cambridge University Press.
- Jackman, M. (1994). *The velvet glove: Paternalism and conflict in gender, class, and race relations*. Berkeley: University of California Press.
- Kasser, T. (2002) *The high price of materialism*. Cambridge, MA: MIT Press.
- Kasser, T., & Ahuvia, A. (2002). Materialistic values and well-being in business students. *European Journal of Social Psychology*, 32(1), 137-146.
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22(3), 280-287.
- Kidd, Q., & Lee, A. (1997). Postmaterialist values and the environment: A critique and reappraisal. *Social Science Quarterly*, 78(1), 1-15.
- Lefcourt, H. (1996). Perspective-taking humor and authoritarianism as predictors of anthropocentrism. *Humor: International Journal of Humor Research*, 9(1), 57-71.

- Lipset S.M. (1959). Democracy and Working-Class Authoritarianism. *American Sociological Review*, 24, 482-502.
- Lye, D. N., & Waldron, I. (1997). Attitudes toward cohabitation, family, and gender roles: Relationships to values and political ideology. *Sociological Perspectives*, 40(2), 199-225.
- MacKinnon, C.A. (1987). *Feminism unmodified: discourses on life and law*. Cambridge, MA: Harvard University Press.
- MacKinnon, C.A. (2001). Sex equality: On difference and dominance. In A. C. Herrmann and A. J. Stewart (Eds.), *Theorizing Feminism: Parallel Trends in the Humanities and Social Sciences* (2nd ed.) (pp. 232-53). Boulder, CO: Westview Press.
- MacKinnon, C.A. (2006). *Are women human?: And other international dialogues*. Cambridge, MA: Belknap Press of Harvard University Press.
- Martin, Karin A. 1998. Becoming a gendered body: Practices of preschools. *American Sociological Review*, 63(4), p.494-511.
- Marx, K. (1976). *Capital: A critique of political economy* (Ben Fowkes, Trans.). New York: Vintage Books. (Original work published in 1867)
- McCracken, G. D. (1988). *Culture and consumption*. Bloomington: Indiana University Press.
- McRobbie, A. (1999). *In the culture society: Art, fashion, and popular music*. London: Routledge.
- Merchant, C. (1980). *The death of nature: Women, ecology, and the scientific revolution*. San Francisco, CA: Harper & Row.
- Merchant, C. (2003). *Reinventing Eden*. New York: Routledge.
- Merriam-Webster's Collegiate Dictionary, Tenth edition*. (1997). Springfield, MA: Merriam-Webster, Inc.

- Mies, M., & Shiva, V. (1993), *Ecofeminism*. London: Zed Books.
- Nooney, J. G., Woodrum, E., Hoban, T. J., & Clifford, W. B. (2003). Environmental worldview and behavior: Consequences of dimensionality in a survey of North Carolinians. *Environment and Behavior*, 35(6), 763-783.
- Nordlund, A. M., & Garvill, J. (2002). Value structures behind proenvironmental behavior. *Environment and Behavior*, 34, 740-756.
- Oreg, S., & Katz-Gerro, T. (2006). Predicting pro-environmental behavior cross-nationally: Values, the theory of planned behavior, and value-belief-norm theory. *Environment and Behavior*, 38(4), 462-483.
- Ortner, S. B. (1974). Is female to male as nature is to culture? In & M.Z. Rosaldo & L. Lamphere (Eds.) *Woman, culture and society* (pp. 67-87). Stanford, CA: Stanford University Press.
- Oskamp, S., Harrington, M. J., Edwards, T. C., & Sherwood, D. L. (1991). Factors influencing household recycling behavior. *Environment and Behavior*, 23(4), 494-519.
- Padavic, I., & Reskin, B. (2002). *Women and men at work*. Thousand Oaks, CA: Pine Forge Press.
- Paterson, M., & Dalby, S. (2006). Empire's ecological tyreprints. *Environmental Politics*, 15(1), 1-22.
- Peterson, B. E., Doty, R. M. & Winter, D. G. (1993). Authoritarianism and attitudes toward contemporary social issues. *Personality and Social Psychology Bulletin*, 19(2), 174-184.
- Pollan, M. (2001). *The botany of desire: a plant's eye view of the world*. New York: Random House.
- Poortinga, W., Steg, L., & Vlek, C. (2004). Values, environmental concern, and environmental behavior: A study into household energy use. *Environment and Behavior*, 36(1), 70-93.
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67(4), 741-763.

- Rauwald, K. S., & Moore, C. F. (2002). Environmental attitudes as predictors of policy support across three countries. *Environment and Behavior*, 34(6), 709-739.
- Renzetti, C.M. (1987). New wave or second stage? Attitudes of college women toward feminism. *Sex Roles*, 16, 265-277.
- Reuther, R. R. (1993). Ecofeminism: Symbolic and social connections of the oppression of women and the domination of nature. In C. J. Adams (Ed.) *Ecofeminism and the Sacred*. New York: Continuum.
- Richins, M. L. (1995). Social comparison, advertising, and consumer discontent. *American Behavioral Scientist*, 38(4), 593-607.
- Richins, M.L. & Dawson, S. (1990). Measuring material values: A preliminary report of scale development. In M. Goldberg, G. Gorn, R. Pollay (Eds.), *Advances in Consumer Research*, vol. 17 (pp. 169-175). Provo, UT: Association for Consumer Research.
- Richins, M.L. & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research*, 19, 303-316.
- Richins, M. L., Mick, D. G., & Monroe, K. B. (2004). The material values scale: Measurement properties and development of a short form. *Journal of Consumer Research*, 31(1), 209-219.
- Rock, D. (2002). Racking Argentina. *New Left Review*, 17, 54-86.
- Rokeach, M. (1968). *Beliefs, attitudes, and values; A theory of organization and change*. San Francisco: Jossey-Bass.
- Rokeach, M. (1973). *The nature of human values*. New York: Free Press.
- Sarup, G. (1976). Gender, authoritarianism, and attitudes toward feminism. *Social Behavior and Personality*, 4(1), 57-64.
- Saunders, S., & Munro, D. (2000). The construction and validation of a consumer orientation questionnaire (SCOI) designed to measure Fromm's (1995) 'marketing character' in Australia. *Social Behavior and Personality*, 28(3), 219-240.

- Schiebinger, L. L. (1989). *The mind has no sex?: Women in the origins of modern science*. Cambridge, MA: Harvard University Press.
- Schor, J.B. (1998). *The overspent American: Upscaling, downshifting, and the new consumer*. New York: Basic Books.
- Schultz, P., & Stone, W. (1994). Authoritarianism and attitudes toward the environment. *Environment and Behavior*, 26(1), 25-37.
- Schwartz, S. (1973) Normative explanations of helping behavior: A critique, proposal, and empirical test. *Journal of Experimental Social Psychology*, 9(4), 349-364.
- Schwartz, S. (1977). Positive and negative referent others as sources of influence: A case of helping. *Sociometry*, 40(1), 12-21.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1-66.
- Schwartz, S. H., & Boehnke, K. (2004). Evaluating the structure of human values with confirmatory factor analysis. *Journal of Research in Personality*, 38, 230-255.
- Scott, D., & Willits, F. K. (1994). Environmental attitudes and behavior: A Pennsylvania survey. *Environment and Behavior*, 26(2), 239-260.
- Seoane, J. & Garzón, A. (1992). Creencias sociales contemporaneas, autoritarismo, y humanismo./ Contemporary social beliefs, authoritarianism, and humanism. *Psicología Política*, 5, 27-52.
- Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York: Cambridge University Press.
- Sidanius, J., Levin, S., Federico, C. M., & Pratto, F. (2001). Legitimizing ideologies: The social dominance approach. In J. T. Jost, & B. Major (Eds.), *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations*. (pp. 307-331) Cambridge, UK: Cambridge University Press.

- Smith, A. G., & Winter, D. G. (2002). Right-wing authoritarianism, party identification and attitudes toward feminism in student evaluations of the clinton-lewinsky story. *Political Psychology*, 23(2), 355-383.
- Spence, J. T., & Hahn, E. D. (1997). The attitudes toward women scale and attitude change in college students. *Psychology of Women Quarterly*, 21(1), 17-34.
- Steg, L., Dreijerink, L., & Abrahamse, W. (2005). Factors influencing the acceptability of energy policies: A test of VBN theory. *Journal of Environmental Psychology*, 25(4), 415-425.
- Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407-424.
- Stern, P. C., & Dietz, T. (1994). The value basis of environmental concern. *Journal of Social Issues*, 50(3), 65-84.
- Stern, P. C., Dietz, T., & Guagnano, G. A. (1995). The new ecological paradigm in social-psychological context. *Environment and Behavior*, 27(6), 723-743.
- Stern, P. C., Dietz, T., & Kalof, L. (1993). Value orientations, gender, and environmental concern. *Environment and Behavior*, 25(3), 322-348.
- Stern, P.C., Dietz, T., Abel, T., Guagnano, G.A., & Kalof, L. (1999) A value-belief-norm theory of support for social movements: The case of environmentalism, *Human Ecology Review*, 6(2), 81-97.
- Stewart, A. J. (1974). Longitudinal prediction from personality to life outcomes among college-educated women. Unpublished doctoral dissertation, Harvard University.
- Stewart, A. J. (1978). A longitudinal study of coping styles of self-defining and socially defined women. *Journal of Consulting and Clinical Psychology*, 46, 1079-1084.
- Stewart, A. J. (1980). Personality and situation in the prediction of women's life patterns. *Psychology of Women Quarterly*, 5, 195-206
- Stewart, A. J., & Healy, J. M. (1989). Linking individual development and social changes. *American Psychologist*, 44(1), 30-42.
- Stewart, A. J., & Salt, P., (1981). Life-stress, life styles, depression and illness in adult women. *Journal of Personality & Social Psychology*, 40, 1063-1069.

- Stewart, A. J., & Vandewater, E. A. (1993). "If I had it to do over again..." Midlife review, midcourse corrections, and women's well-being in midlife. *Journal of Personality and Social Psychology*, 76(2), 270-283.
- Swim, J. K., Aikin, K. J., Hall, W. S., & Hunter, B. A. (1995). Sexism and racism: Old-fashioned and modern prejudices. *Journal of Personality and Social Psychology*, 68(2), 199-214.
- Swim, J. K., & Cohen, L. L. (1997). Overt, covert, and subtle sexism: A comparison between the attitudes toward women and modern sexism scales. *Psychology of Women Quarterly*, 21(1), 103-118.
- Switzer, J.V. (1997). *Green backlash: The history and politics of the environmental opposition in the US*. Boulder, CO: Lynne Reinner Publishers.
- Tendencias Económicas. (2002). *La Economía Argentina /The Argentinian Economy*. Buenos Aires: Tendencias Económicas.
- Tevik, J. (2003) Porteño logics: the Meaning of taste and morality in social classification in Buenos Aires. Unpublished thesis. University of Bergen, Norway. <http://www.uib.no/elpub/2003/h/708004/Hovedoppgave.pdf> accessed May 14, 2004.
- Twenge, J. M. (1999). Mapping gender: The multifactorial approach and the organization of gender-related attributes. *Psychology of Women Quarterly*, 23, 485.
- Twohey, M. (2005, Nov 14) The great "coastie" divide. *Milwaukee Journal Sentinel*, Milwaukee, WI. <http://www.jsonline.com/story/index.aspx?id=370655> accessed September 20, 2006.
- UNESCO Institute for Statistics/World Education Indicators. (2002). *Educational attainment of the adult population (1999)*. Retrieved November 5, 2006, from UNESCO Institute for Statistics Website: http://www.uis.unesco.org/ev.php?URL_ID=5295&URL_DO=DO_TOPIC&URL_SECTION=201
- Veblen, T. (1965). *The theory of the leisure class*. New York: A. M. Kelley, Bookseller. (Originally published in 1899)
- Vining, J., & Ebreo, A. (2002). Emerging theoretical and methodological perspectives on conservation behavior. In R. B. Bechtel, & A. Churchman (Eds.), *Handbook of environmental psychology* (pp. 541-558). John Wiley & Sons, Inc.
- West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender and Society*, 1, 125.

- Whitley, B. E. J., & Ægisdóttir, S. (2000). The gender belief system, authoritarianism, social dominance orientation, and heterosexuals' attitudes toward lesbians and gay men. *Sex Roles*, 42(11), 947-967.
- Winter, D.G., McClelland, D.C. & Stewart, A.J. (1981). *A New Case for the Liberal Arts: Assessing Institutional Goals and Student Development*. San Francisco: Jossey-Bass.
- Wood, W., & Eagly, A. H. (2002). A cross-cultural analysis of the behavior of women and men: Implications for the origins of sex differences. *Psychological Bulletin*, 128(5), 699-727.
- Wuthnow, R. (1985). State Structures and Ideological Outcomes. *American Sociological Review*, 50, 799-821.