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Justice for All? The Effects of Political Liberalism, Previous Behavior, and
Identity on Perceptions of Green and Environmental Injustice

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Identity on Perceptions of Green and Environmental Injustice**

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An abstract of
A thesis submitted to the Faculty of the
James T. Laney School of Graduate Studies of Emory University
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Abstract

Justice for All? The Effects of Political Liberalism, Previous Behavior, and Identity on Perceptions of Green and Environmental Injustice **By Christie Parris**

What influences individuals' perceptions of injustice with respect to environmental issues? I examine how political liberalism, previous environmentally friendly behavior, and environmental identity affect perceptions of both green and environmental injustice. To test my hypotheses I use data from a survey administered to an incoming cohort of first year college students at a southeastern university. My results show that perceptions of both types of injustice are significantly affected by respondents' degree of political liberalism and their environmental identity. Additionally, previous environmentally friendly behavior, including reducing, reusing, recycling, and advocacy-oriented behaviors, impact green and environmental justice perceptions indirectly, as mediated by environmental identity. These results confirm that liberal individuals who have enacted environmentally friendly behavior and who have a strong environmental identity are more likely than others to perceive injustice regarding the environment. My findings have implications for colleges and universities wishing to encourage their student populations to engage in ongoing environmentally responsible behaviors.

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Table of Contents

| | |
|--|----|
| Introduction..... | 1 |
| Conceptualizing Justice..... | 5 |
| Predicting Green and Environmental Injustice Perceptions | 9 |
| Methods..... | 18 |
| Results..... | 25 |
| Discussion..... | 29 |
| References..... | 33 |
| Appendix A: Variable Coding..... | 47 |

List of Figures and Tables

| | |
|---|----|
| Figure 1: Green and Environmental Justice Direct Effects Model..... | 11 |
| Figure 2: Green and Environmental Justice Mediating Model..... | 17 |
| Table 1: Descriptive Statistics..... | 26 |
| Table 2: Correlation Matrix..... | 26 |
| Table 3: Nonstandardized Regression Coefficients for the Effects of Previous Behavior, Political Liberalism, and Environmental Identity on Perceptions of Green and Environmental Justice | 27 |

Justice for All? The Effects of Political Liberalism, Previous Behavior, and
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INTRODUCTION

The verdict is in: green is the new black. Environmentalism and sustainability have swept mainstream American life from the automobile industry to the fashion industry, and college campuses are no exception. According to the National Wildlife Federation (2008), leadership and day-to-day operations within colleges and universities are greener than they were in 2001 (also see Wong 2008). Studies of the greening of college and university campuses illustrate the shift toward environmentally-friendly operations, with a particular emphasis on sustainable dormitories (Marcell, Agyeman, and Rappaport 2004; Peterson, Shunturov, and Janda 2007). These studies explore students' perceptions of environmental issues such as energy consumption, water conservation, and pro-environmental legislation, as well as their experiences living in sustainable, or 'green,' dorms. In this paper I examine the factors that shape students' evaluations of justice regarding environmental concerns prior to their exposure to living on a college campus. Specifically, I address how these incoming college students perceive injustice pertaining to both the ecosystem and the distribution of environmental harms in low-income and minority neighborhoods. This paper is part of a larger longitudinal study on the effects of living in green dorms on environmentally friendly behavior.

In the U.S., there is some awareness that environmentally responsible behaviors can influence the amount of environmental damage that occurs around the world.

Individuals and institutions, including colleges and universities, have begun to change their consumption patterns in order to address perceptions of injustice regarding environmental issues at home and abroad. These behaviors range from recycling plastic, paper, glass, and aluminum to unplugging electronics when they are not in use. It is beneficial for researchers to understand the antecedents to individuals' justice perceptions regarding environmental concerns in order to identify how specific environmental issues may be addressed responsibly and collectively in mainstream society.

While previous psychological research provides information on the cognitive processes that lead to environmental attitudes and behavior (e.g., Clayton 1994; Opatow 1994; Robbins and Greenwald 1994), previous sociological research pertaining to environmental issues focus on how demographic characteristics predict levels of perceived injustice. In linking justice evaluations and environmental issues, this research uses 'environmental concerns' as an umbrella concept to refer to multiple aspects of environmentalism. Although the term encompasses a multitude of environmental issues, I focus here on perceptions of justice and environmental issues. I break down these justice perceptions into two categories: green justice and environmental justice. Perceptions of injustice regarding the ecosystem directly, or "conceptions of fairness to the natural world" (Opatow and Clayton 1994:2), are conceptualized as green justice. Environmental justice, on the other hand, focuses on "the need to distribute environmental hazards fairly across different demographic groups and to connect environmental concerns with issues of social justice" (Opatow and Clayton 1994:3). Perceptions of environmental injustice include negative opinions towards toxic waste facilities in low income and minority neighborhoods.

Although these two fields of research have contributed much to our understanding of the general patterns of environmental concern and how environmentally irresponsible behavior disproportionately affects minority and low income communities, scholars know very little, outside of general demographic information, about how other aspects of individuals (e.g., behavior, political ideology, and identity) affect both their green and environmental justice evaluations. Additionally, previous research has focused on perceptions of green and environmental justice separately. Here, I address these limitations of previous environmental concerns research by investigating the effects of individual perceiver factors on perceptions of green and environmental injustice, as well as examining green and environmental justice together in order to determine if the same factors have similar effects on these two types of justice perceptions.

As a guide for my analysis, I draw upon the justice model proposed by Hegtvædt (2006). According to this model, perceiver factors such as individual characteristics, beliefs, and motivations, and situational factors, such as whether benefits or burdens are being distributed, the type of benefit/burden being distributed, and the relationship among the recipients of the benefits/burdens, influence justice evaluations. In turn, justice evaluations affect emotional, cognitive, and behavioral reactions. In this study, I focus on the effects of three key perceiver factors, including previous environmental behavior, political liberalism, and environmental identity on justice perceptions.

First, I evaluate the role previous environmental behavior plays in the perceptions of green and environmental justice. Previous research discusses extensively the relationship between environmental attitudes and behaviors (see Stets and Biga 2003 for an overview). I apply this research to my investigation of whether previous behaviors

affect justice evaluations regarding the environment. Second, as other researchers have done (Buttel 1987; Dunlap and Van Liere 1984; Howell and Laska 1992; Jones and Dunlap 1992; McCright and Dunlap 2000; Samdahl and Robertson 1989; Van Liere and Dunlap 1980), I investigate the relationship between political liberalism and justice evaluations. Finally, I explore the relationship between environmental identity and justice evaluations. Environmental identity is “a sense of connection to some part of the nonhuman natural environment, based on history, emotional attachment, and/or similarity, that affects the ways in which we perceive and act toward the natural world; a belief that the environment is important to us and an important part of who we are” (Clayton 2003:45-6). While previous studies have examined the relationship between environmental identity and environmental behavior (Clayton 2003; Kempton and Holland 2003; Stets and Biga 2003) and environmental attitudes and behaviors and justice perceptions (Clayton 1998), this is the first study to investigate environmental identity and justice evaluations regarding environmental issues. I investigate the relationship between previous behavior, degree of liberalism, and environmental identity with justice perceptions in order to gauge whether individuals maintain consistency across these aspects of their lives. Additionally, if we wish to address issues of green and environmental injustice, we must first know what individuals perceive to be unjust, and where those perceptions stem from.

I begin with an overview of the justice literature, followed by a review of research in justice evaluations with regard to environmental concerns. I then situate my research model within the larger justice model (Hegtvedt 2006), and provide specific predictions on the effects of previous environmental behavior, political liberalism, and environmental

identity on justice evaluations. I test my predictions using survey data from a cohort of incoming college students. My results show which factors are most important in affecting justice evaluations. I conclude with a discussion of the importance of my results for future research in justice evaluations and environmental issues.

CONCEPTUALIZING JUSTICE

Most research of justice focuses on the experiences (e.g., outcomes, procedures, and interpersonal treatment) of individuals and their subsequent justice evaluations of those experiences. Although research on justice covers a wide expanse of empirical concerns, I focus here on the two types of justice relevant to environmental issues: green justice and environmental justice. As opposed to focusing on outcomes affecting specific individuals, these types of justice evaluations concern a larger community. Green and environmental justice, then, are consistent with an underlying characteristic of justice that promotes collective welfare.

Green Justice

Perceptions of green injustice arise when ideas of how the natural world should be treated are incongruent with the actual treatment of the natural world. Although environmentalists concerned with green justice are, to an extent, concerned with how environmental hazards impact groups of people, their primary focus is on how human practices degrade or destroy the natural world. Perceptions of green justice consist of “beliefs that shape my behavior toward the natural features of the environment such as forests, wetlands, animal species, and such widely-shared common resources as water

and air” (Opatow and Clayton 1994:1). Green injustice, then, is the type of injustice that mainstream environmentalists fight.¹

In the late 1970s, psychologists created environmental concern scales in order to measure what respondents thought of multiple environmental issues (Weigel and Weigel 1978; Dunlap and Van Liere 1978).² Findings in this area reveal some general patterns in the relationship between demographic characteristics and concern for environmental issues. Specifically, this field of research has consistently found political ideology, age, and education level to affect perceptions of green justice (Buttel 1987; Buttel and Flinn 1976; Dunlap and Van Liere 1984; Dunlap Van Liere, Mertig, and Jones 2000; Dunlap, Xiao, and McCright 2000; Jones and Dunlap 1992; Kebede 2005; Klineberg, McKeever, and Rothenbach 1998; Li and Wehr 2007; McCright and Dunlap 2000, 2003; Stern, Dietz, and Kalof 1993; Van Liere and Dunlap 1980; although see Howell and Laska 1992 and Samdahl and Robertson 1989 for exceptions). These studies illustrate that politically liberal, younger, and better-educated individuals are more likely to perceive higher levels of green injustice. Other demographic factors such as income, gender, urban vs. rural residence, religiosity, and ethnicity, however, produce inconsistent findings (Blocker and Eckberg 1989; Buttel and Johnson 1977; Buttel and Flinn 1978; Klineberg et al. 1998;

¹ Opatow and Clayton coined the term green justice in their 1994 introduction to the edition of the *Journal of Social Issues* focused on environmental concerns. Although other studies in the edition use the term, it has not been used in most research pertaining to perceptions of environmental issues. Most researchers simply refer to ‘environmental concerns’ in their discussions of environmental issues.

² Dunlap et al. (2000) recently updated Dunlap and Van Liere’s (1978) New Environmental Paradigm scale. The authors also change the name from the “New Environmental Paradigm Scale” to the “New Ecological Paradigm Scale.” They argue that a global shift in language is occurring in which the term ‘ecological consciousness’ is used in place of ‘environmental concern’ due to recognition that human activities alter ecosystems. While the original scale included measures of balance of nature, limits to growth, and anti-anthropocentrism, the updated version includes a more comprehensive coverage of key facets of an ecological worldview, including measures of human exemptionalism and the perceived likelihood of potentially catastrophic environmental changes, or eco-crises (the idea that humans—unlike other species—are exempt from the constraints of nature) [Dunlap and Catton 1994].

Mohai and Twight 1987; Samdahl and Robertson 1989; Van Liere and Dunlap 1981). Building on this literature, more recent work integrates the importance of the effects of social networks on individuals' environmental concerns, particularly with respect to participation in and face-to-face contact with peers in environmental organizations (Olli, Grendstad, and Wollebaek 2001).

Environmental Justice

During the 1980s, academic and popular attention in American environmentalism turned to what is known as environmental injustice. This aspect of environmentalism considers the unequal distribution of environmental burdens across different populations. In contrast to the focus of green justice on the ecosystem, environmental justice shifts the focus to groups of people who are negatively affected by injustice. Capek (1993) argues that, "Environmental justice is premised on the notion that the rights of toxic contamination victims have been systematically usurped by more powerful social actors, and that "justice" resides in the return of these rights" (p. 8). As an outgrowth of current popular environmental thought, the environmental justice movement emerged to address how a community's structural location accounts for its exposure to environmental hazards such as toxic waste storage facilities. Proponents of this view argue that "social, political, economic and environmental issues are inextricably bound together and must be analyzed and understood as a complex whole" (Dorsey 1998:501).

Environmental justice research sheds light on specific neighborhoods that exist in close proximity to toxic waste sites (e.g., Capek 1993; Picou 2008), as well as polluted air and water (Li and Wehr 2007). In general, researchers in this area subscribe to one of two main research methods. First, qualitative case studies of neighborhoods in close

proximity to environmental hazards evaluate the types of neighborhoods affected by these environmental burdens (Capek 1993; Picou 2008).³ Second, demographic studies of the characteristics of communities in close proximity to hazardous waste facilities are often conducted by government officials (U.S. General Accounting Office 1983), concerned community organizations (United Church of Christ Commission for Racial Justice 1987), and sociologists (see Pellow, Weinberg, and Schnaiberg 2001 for an excellent review). Although their findings illustrate some evidence of a correlation between socioeconomic status and the location of environmental burdens, the bulk of the evidence suggests that race is more strongly associated with the location of hazardous waste than is socioeconomic status (e.g., Mohai and Saha 2007). Due to this empirical relationship, researchers began to investigate the connection under the rubric of environmental racism, a concept that inextricably links people's experience of environmental burdens and benefits to their race or ethnicity. According to Pellow et al. (2001), "Environmental racism occurs when the poor and people of color bear the brunt of the nation's pollution problem" (p. 424). Environmental racism scholars, therefore, argue that the environmental experiences of people of color fundamentally differ from those of whites.

Some evidence shows that individuals connected to the environmental justice movement are predominately low income racial and ethnic minorities, while mainstream environmentalists concerned with green justice are mostly middle class whites (Taylor 2000). Although the relationship between demographic information and environmental

³Often, these case studies focus on communities eligible for the Environmental Protection Agency's Superfund monies. Established in 1980, Superfund "is the federal government's program to clean up the nation's uncontrolled hazardous waste sites" [EPA 2008]. Affected communities awarded support are granted compensation and relocation funding.

concern is useful background information, the current study extends previous research by focusing on the effects of respondents' previous environmental behavior, political liberalism, and environmental identity on perceptions of green and environmental justice. Literature on the social psychology of justice provides a basis for explaining why these factors affect perceptions of justice.

PREDICTING GREEN AND ENVIRONMENTAL INJUSTICE PERCEPTIONS

The Justice Model

Hegtvedt (2006) proposes a basic model of justice processes derived from work of earlier justice scholars (e.g., Adams 1965; Homans 1974; Tyler et al. 1997; Walster, Walster, and Berscheid 1978). The model suggests that both individual perceiver factors and situational factors affect justice evaluations. There are three categories of individual perceiver factors. First, perceiver characteristics include things such as gender, age, and the perceiver's position vis à vis other group members. Second, the perceiver's beliefs pertain to individual belief systems as well as cultural belief systems. While the former encompasses items such as ideology and beliefs regarding oneself, the latter captures "dimensions of values (e.g., collectivistic versus individualistic)" that determine how individuals relate to others (Hegtvedt 2006:54). The third category of individual perceiver factors is the perceiver's motivations. These motivations may range from self-interested materialism to group-oriented collectivism. In contrast to perceiver factors, situational factors refer to the context in which the evaluation is made, such as the nature of the thing being distributed, as well as the relationship among the recipients of the thing being distributed (e.g., whether they are friends, co-workers, or strangers).

The justice model is contingent upon three main assumptions. First, it assumes that in an attempt to make sense of their social interactions, individuals make justice evaluations regarding outcomes, procedures, and treatment, especially when their expectations are not met. The second assumption is that perceptions of injustice cause distress and tension for the individual, and these feelings are disagreeable. The final assumption is that these disagreeable feelings motivate individuals to restore justice (Hegtvedt 2006). Additionally, research illustrates that individuals usually pursue the restoration of justice through the least costly means available (Adams 1965; Van den Bos, Lind, and Wilke 2001).

Although Hegtvedt's model also includes emotional, cognitive, and behavioral responses to justice evaluations, I focus on how individual factors help people to make sense out of justice processes, including the distribution of burdens and benefits, as well as the procedures through which those distribution decisions were made. Typically, individuals desire and pursue consistency between their attitudes and behaviors in order to conserve cognitive resources (Bem 1967, 1972). For instance, an individual who has engaged in environmentally friendly behaviors (e.g., recycling or carrying a reusable bag while shopping) would be more likely than others to believe that environmental conservation (e.g., not drilling for oil in ANWR⁴) and fair distributive processes regarding environmental contaminants are important. Extending this rationale, I argue that individuals would also wish to maintain consistency between their perceptions of injustice and their attitudes and behaviors. The individual who has engaged in environmentally friendly behaviors and who believes conservation efforts are important,

⁴ Arctic National Wildlife Refuge

then, would be likely to perceive higher levels of green and environmental injustice in order to maintain consistency across these aspects of his or her life.

While the basic justice model has been instrumental in individual level analyses of justice evaluations regarding self and nearby others (e.g., friends or coworkers), it has not been applied to justice evaluations regarding outcomes for groups of people distant from the self, or for the ecosystem. Here, I seek to gain a clearer understanding of precursors to individuals' green and environmental justice evaluations through my analysis. I argue that previous environmental behavior, political liberalism, and environmental identity affect both green and environmental justice perceptions (see Figure 1). In the following section, I examine each of these variables more closely and offer hypotheses regarding their relationship with justice evaluations.

[FIGURE 1 ABOUT HERE]

Previous Behavior

Within the psychology literature, there is much debate on the causal relationship between attitudes and behaviors. When researchers initially began to investigate the relationship, they focused on the effects of attitudes on behaviors (Ajzen and Fishbein 1973). More recent work, however, has shifted focus towards the effects behaviors have on attitudes (Aronson 1993; Bem 1967, 1972; Kempton and Holland 2003; Kitchell, Kempton, Holland, and Tesh 2000). In this study, I draw on Bem's (1967, 1972) classic work on self-perception theory to inform my understanding of the relationship between previous behavior and perceptions of justice. Self-perception theory is premised on the notion that people desire consistency in their attitudes and behaviors. In order for individuals to achieve this consistency, self-perception theory argues, individuals will

infer their attitudes from their behaviors, so long as their behaviors are free from perceived coercion. In other words, instead of drawing on internal cues to assess one's own attitudes and beliefs, an individual makes evaluations regarding his or her attitudes and beliefs by relying on the same cues that an outside observer would rely on in order to make the assessment: the previous public behaviors of the individual. In addition to an individual's desire for consistency between attitudes and behaviors, such consistency is in the individual's self interest. A state of consistency involves fewer psychological costs than a state of inconsistency, and individuals are therefore motivated to attain consistency. For example, if an individual has engaged in environmentally friendly behavior in the past (e.g., recycling), he or she will be more likely to perceive higher levels of injustice in order to maintain consistency between his or her attitudes and his or her previous behaviors.

The few studies that examine the relationship between previous behaviors and perceptions of environmental issues focus solely on perceptions of justice within the environmental justice movement (e.g., Aronson 1993; Kempton and Holland 2003). They provide a fruitful starting point for examining the effects of previous behaviors on perceptions of justice. For example, in his work on how ordinary citizens become environmental justice activists, Aronson (1993) finds that “political activity *precedes* an activist political consciousness and it *initiates* the transformation of an individual into an activist” (p. 64, italics in original). In his findings, Aronson describes a process in which average citizens felt compelled to act, even though they had not participated in political activism previously. Once these individuals acted, they were perceived by others in their communities as activists. Subsequently, the individuals began to conceive of themselves

as activists as well. Aronson concludes that, “*Action changes consciousness* of the self and the other objects in the situation, and this in turn affects future actions” (p. 76, italics in original). If individuals behave in an environmentally friendly manner, then, I expect their evaluations of justice to be consistent with their previous behaviors. Thus, I offer my first hypothesis:

Hypothesis 1: The previous enactment of pro-environmental behavior is positively related to an individual’s perception of the severity of green and environmental injustice.

Political Liberalism

Two comprehensive reviews of the literature (Dunlap and Van Liere 1980; Dunlap 1991) have found that liberals are more consistently concerned about the environment than are their conservative counterparts. On the other hand, previous studies find mixed results on the relationship between party affiliation and environmental concerns (Dunlap 1975; Dunlap and Van Liere 1980). Some recent work found significant differences between Democrats and Republicans with respect to environmental concerns (Costantini and Hanf 1972; Dunlap 1975; Jones and Dunlap 1992; Howell and Laska 1992; Tognacci et al.1972; Uyeki and Holland 2000), yet earlier work did not (Buttel 1972; Buttel and Flinn 1974, 1978; Dillman and Christianson 1972). I use a measure of political ideology, then, because of its more consistent results in the previous literature with respect to environmental concerns. Additionally, political ideology may resonate with the individuals in my sample more than party affiliation simply because they may not have had the opportunity to register and vote due to their age.

Previous researchers investigating the relationship between political ideology and environmental concerns find that conservatism is correlated with low levels of environmental concern, and liberalism is correlated with high levels of environmental concern (Buttel 1987; McCright and Dunlap 2000; Van Liere and Dunlap 1980; although see Howell and Laska 1992 and Samdahl and Robertson 1989 for exceptions). In their early study to empirically illustrate the relationship between conservatism and low levels of environmental concern, Dunlap and Van Liere (1984) find that support for laissez-faire government, support for private property rights, support for economic growth, faith in material abundance, and faith in future prosperity, all tenets of conservative ideology, are negatively correlated with environmental concern. Similarly, McCright and Dunlap (2000) argue that conservatism and environmental concern are negatively correlated because the “pursuit of environmental protection often involves government action that is seen as threatening core elements of conservatism, such as the primacy of individual freedom, private property rights, laissez-faire government, and promotion of free enterprise” (p. 504).

Once again, the notion of consistency plays an important role in this process. Individuals strive for consistency in their sets of beliefs regarding particular concepts. For example, if an individual believes that governmental regulation is unnecessary and sometimes even invasive, he or she will likely also believe that environmental issues should be left to non-governmental organizations to address. I therefore expect liberalism and perceptions of injustice to be positively correlated because liberal ideology traditionally supports governmental regulation, and governmental regulation is a

necessary step involved in addressing environmental concerns. This leads me to my second hypothesis.

Hypothesis 2: An individual's degree of liberalism is positively related to his or her perceptions of the severity of green and environmental injustice.

Environmental Identity

Building on previous social psychological work, Stryker and Burke (2000) reiterate the commonly held definition of the concept of identity as the “parts of a self composed of the meanings that persons attach to the multiple roles they typically play in highly differentiated contemporary societies” (p. 284). The focus on the multiple roles an individual fills and the meanings he or she attaches to those roles allows researchers to investigate how individuals choose behaviors to confirm or disconfirm specific roles. Through this process, individuals illustrate their desire for consistency between their important identities and their perceptions of feedback from others (known as reflected appraisals) in order to confirm their identities (Burke 1991). Indeed, when inconsistencies occur between individuals' perceptions of feedback from others and the way they see themselves, known as their identity standard, individuals will alter their behavior in order to alter subsequent perceived feedback (Kaufman and Johnson 2004).

Specifically, researchers have begun to investigate the meanings individuals attach to the role of environmentally aware citizens. In her work, Clayton (2003) creates an environmental identity scale designed to “assess the extent to which the natural environment plays an important part in a person's self-definition” (p. 52). In her initial tests of the scale, Clayton analyzes the validity of the scale, how environmental identity is related to perceptions of environmental conflict, and how environmental identity relates

to decision making. In her first study, Clayton finds that the scale is, in fact, valid. In her second study, Clayton finds that environmental identity is positively related to pro-environmental choices when faced with a conflict, how important respondents believed the decision was, how certain they believed their decision was correct, and how easy they perceived the decision to make. In her third study, Clayton finds that a stronger environmental identity is positively correlated with responsibility to other species and the rights of the environment. Overall, Clayton's findings suggest that individuals with a stronger environmental identity consistently rated factors relating to responsibility to other species and the rights of the environment as more important than people with a weak environmental identity.

These findings illustrate the importance of consistency between an individual's identity and behavior. This desire for consistency motivates individuals to make choices and maintain beliefs that are aligned with their identity standard. For example, if individuals see themselves as possessing a strong environmental identity, they will perceive higher levels of injustice with regard to environmental concerns in order to maintain consistency. This leads me to my third hypothesis.

Hypothesis 3: The stronger an individual's environmental identity, the greater he or she will perceive green and environmental injustice to be.

Mediation Model

In addition to the direct effects of these three antecedents on justice perceptions, environmental identity may mediate the effects of previous behavior and political liberalism on perceptions of injustice (see Figure 2). Building on Aronson's (1993) work on the effects of behavior on political consciousness, Kempton and Holland (2003) not

only show that previous environmental behavior precedes an individual's identity formation as an activist, but they also show that identity mediates between environmental behavior and perceptions of environmental damage. In their work, Kempton and Holland (2003) draw on Holland et al.'s (1998) theory of identity development. This theory posits that three distinct changes occur as people develop a sense of identity within a cultural context. First, the cultural world, in this case environmental action, becomes more salient. Second, the individual identifies him or herself as an actor within that cultural context. The final change involves the acquisition of practical knowledge obtained through previous action. For my purposes, this knowledge includes information regarding environmental and green justice. Although the authors do not explicitly state it, this theory supports the notion that environmental identity may play a mediating role between previous environmental behaviors on perceptions of injustice.

[FIGURE 2 ABOUT HERE]

Environmental identity may also mediate the relationship between political liberalism and perceptions of injustice. Due to the consistency individuals desire in their beliefs, their political ideology may determine their location on the environmental identity scale. Indeed, in previous studies, collectivism, or a sense of interconnectedness with others often associated with political liberalism, is significantly correlated with environmental identity (Clayton 1996, 1998, 2003). Additionally, in their work on identity and environmental concerns, Stets and Biga (2003) hypothesize and find a correlation between political ideology and environmental identity. Similarly, in their qualitative work on the formation of environmental activists' identities, Kitchell et al. (2000) argue that by participating in an activist group's activities and carrying out

environmental action, individuals construct their identity as an environmental activist.

These studies lead me to my fourth and final hypothesis.

Hypothesis 4: Environmental identity mediates the effects of previous environmental behavior and political ideology on the severity of the perceptions of green and environmental injustice.

METHODS

My data are comprised of survey responses from incoming first year students at a southeastern university.⁵ Because of the university's requirement that all freshman live on campus, all of my respondents had been assigned to live in either the two new 'green' freshman dorms or in two particular conventional freshman dorms.⁶ All incoming first year students wishing to live in the green dorms went through an application process in which they wrote an essay explaining why they wished to live in the green dorms. Not all students who wrote an essay were selected to live in the green dorms.

Once the university had informed the students of their dorm assignments, I sent a letter informing the incoming freshmen of my environmental concerns study. Following this initial contact, in July 2008 I sent two follow-up emails to prospective respondents, one during the summer and one near the beginning of the fall semester, reminding them of my research project. These emails contained the link of the online survey. The survey took approximately 15-20 minutes to complete. To compensate them for their time, I

⁵This paper is part of a longitudinal research project regarding changes in environmental behaviors on college campuses over time.

⁶The green dorms are currently seeking gold level LEED certification. Leadership in Energy and Environmental Design, or LEED, is a certification process developed by the United States Green Building Council to provide "third-party verification that a building or community was designed and built using strategies aimed at improving performance across all the metrics that matter most: energy savings, water efficiency, CO₂ emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts" [United States Green Building Council 2008].

gave respondents the opportunity to participate in a giveaway in which five respondents were randomly selected to each receive a \$100 Visa gift card.

The survey questions range from demographic information to measures of environmental identity, behaviors, and attitudes. In crafting the survey, I drew from several previous studies on environmental concerns (Barkan 2004; Berger and Corbin 1992; Biga 2006; Harland et al. 1999; Johnson, Bowker, and Cordell. 2004; Korfiatis et al. 2004; Milfont 2004; Pendarvis n.d.; Stern et al. 1993; Stern, Dietz, and Guagnano 1995; Stets and Biga 2003; Thapa 2001; Valle et al. 2005; Wright 2003). I included several indicators for perceptions of green and environmental justice, previous environmental behaviors, and environmental identity. I factor analyzed each of these scales to ensure that they were comprised of items that indicate the same phenomena.

The N for my analysis is 158, a 29% response rate, which is average for the university's residence life surveys.⁷ Despite this response rate, the distribution of my respondents across demographics and dorm location reflects the population of incoming freshmen in the university relatively accurately. In my sample, 59% of the respondents are female and 41% are male. With regard to racial and ethnic background, 62% of the sample is Caucasian, 22% Asian/Asian American/Pacific Islander, 3% Hispanic/Latino/Chicano, 8% African American/Black, and 5% multiracial. The cohort to which the respondents belong is 52% female, 48% male, 45% Caucasian, 31% Asian, 9% African American, 4% Hispanic, and 1% Native American. Finally, 51% of the respondents were assigned by the university to live in one of the two green dorms on campus, and 49% were assigned to live in one of two conventional dorms.

⁷ Fourteen respondents completed the survey when they had already arrived on campus. I believe that their short time in the dorms did not affect their responses, as they were similar to the responses from students who took the survey over the summer.

Dependent Variables: Justice Perceptions

I employ principle component factor analysis to assess the survey items intended to measure justice perceptions. As reported below, the eleven justice-relevant items loaded on two separate factors, one indicating green justice and the other environmental justice. For both green and environmental justice, I created an additive scale, standardized by the number of constituent elements. Each question on each scale is rated on a 7 point Likert scale ranging from strongly disagree (1) to strongly agree (7).

Green Justice

I include seven measures in my green justice scale. Respondents indicated their level of agreement with statements regarding human relationships with the environment. Higher values, therefore, indicate higher levels of perceived green injustice. The items in this scale include: “How much do you agree or disagree with each of the following statements?” (1) Humans are severely abusing the environment; (2) Humans have the right to modify the environment to suit their needs; (3) If things continue on their present course, we will soon experience an ecological catastrophe; (4) We are approaching the limits the earth can support; (5) The greenhouse effect is dangerous to the environment; (6) Pesticides and chemicals are dangerous to the environment; (7) People have a general responsibility to conserve environmental resources for future generations. These items were compiled from several previous studies regarding environmental concerns (Barkan 2004; Johnson et al. 2004; Thapa 2001; Valle et al. 2005). In factor analyzing the green justice scale, I found that each indicator loaded on the same component (abusing the environment = .834, right to modify = .567, ecological crisis = .818, approaching the

limits = .663, greenhouse effect = .770, and chemicals = .566 future generations = .716). Cronbach's Alpha is .830, indicating high reliability of this scale.

Environmental Justice

I use four measures to create my environmental justice scale. These statements were designed to ascertain respondents' perceptions that the harms of toxic waste and environmental damage unevenly affect certain groups of people. Again, higher values indicate higher levels of perceived environmental injustice. The items in this scale include: "How much do you agree or disagree with each of the following statements?" (1) Decisions about where to situate polluting industries should take into account the opinions of the people who would live near those sites; (2) Environmental damage generated here in the US harms people all over the world; (3) Equal treatment of all people should be considered when decision makers are solving environmental problems; (4) Poor neighborhoods are unfairly disadvantaged in terms of exposure to environmental hazards. I adapted item (2) from Stern et al. (1993) and Stern et al. (1995). I created the three other items, drawing on previous environmental concerns studies and principles inherent in the justice literature to guide my work. Factor analysis indicates that each of these indicators load on a single component as well (decisions = .838, US damaging the world = .614, equal treatment = .479, poor neighborhoods = .762). Cronbach's Alpha for this scale is .724.

Independent Variables

Previous Environmental Behavior

To capture previous environmental behaviors, I asked whether respondents had engaged in 15 specific environmentally friendly behaviors in the previous six months.

(See Appendix A for a full list of my previous environmental behavior scale.) All responses are scored on a 7 point Likert scale ranging from never (1) to always (7).

Because of the number of items, I use principle component factor analysis to determine which behaviors loaded on similar components. Three mutually exclusive sets of behavior emerged from this analysis: reduce/reuse, recycle, and advocacy.

The first, *reducing and reusing*, is a waste management strategy in which individuals first reduce the amount of materials they use, and second, reuse the materials they do use. Here, 'materials' can include everything from drink containers and plastic bags to energy and water consumption. The reliability for this scale is somewhat low, with Cronbach's Alpha of .587. This 5 item scale is comprised of the following: "During the last six months, how often did you..." (1) turn off the faucet while brushing your teeth; (2) turn off lights when exiting a room; (3) walk, riding a bike, or taking public transportation instead of driving or riding in a car; (4) unplug "chargers" for phones iPods, etc. when not in use; (5) use your own bag or carry purchases without a bag instead of using paper or plastic bags at stores. I replicated these items from previous studies on environmental behavior (Harland et al. 1999; Pendarvis n.d.). Each of these indicators loaded on the same component in my factor analysis (turn off water = .574, turn off lights = .583, alternate transportation = .686, unplug chargers = .711, and using your own bag = .526).

The second scale consists of *recycling* both paper and other materials, including plastic, glass, and aluminum. I asked respondents about recycling different materials, as well as whether they encourage others to recycle. These items were also borrowed from previous research on environmental behavior (Pendarvis n.d.; Milfont 2004). This 5 item scale includes the following behaviors: "During the last six months, how often did

you...” (1) recycle paper; (2) recycle containers (e.g., plastic, glass, aluminum); (3) encourage family members to recycle; (4) encourage friends to recycle; (5) purchase products in reusable or recyclable containers. The reliability of this scale is quite high, with Cronbach’s Alpha of .896. Again, these indicators load on the same component when factor analyzed (recycle paper = .813, recycle containers = .822, encourage family = .889, encourage friends = .887, and reusable containers = .793).

The third behavioral category is *advocacy*. These items represent activities that involve limiting the use of environmentally unfriendly items, as well as taking part in a group activity geared towards environmentalism. I employ items from previous literature (Biga 2006; Harland et al. 1999; Korfiatis 2004). This 4 item scale includes the following behaviors: “During the last 6 months, how often did you...” (1) limit your consumption of meat for environmental reasons; (2) advocate for solutions to environmental problems; (3) avoid using products harmful for the environment; (4) attend a meeting or event sponsored by an environmental group. The reliability of this scale is also relatively high, with Cronbach’s Alpha of .762. These indicators also loaded on one component in my factor analysis (meat consumption = .697, advocate for solutions = .876, avoid harmful products = .766, attend an event = .706).

Political Liberalism

Based on Van Liere and Dunlap’s (1980) findings that degree of liberalism, instead of affiliation with a specific political party, is a better predictor of environmental concerns, my political ideology measure consists of the following question: “Where would you place yourself on a liberal/conservative scale of political attitudes?”

Responses are coded on a 7 point Likert scale ranging from extremely conservative (1) to extremely liberal (7).

Environmental Identity

Environmental identity refers to the connection individuals feel toward the natural environment. I use selected items from Clayton's (2003) environmental identity scale, which consists of 22 statements that are designed to "assess the extent to which the natural environment plays an important part in a person's self-definition" (2003:52). Based on pre-test evaluations from a subsample of college students from the same university as the present sample, I include ten items that represent individuals' perceptions of their relationship with the natural environment as well as their opinions of the importance of environmentally friendly behavior. In addition to the ten items from Clayton's scale, I added "I am a spiritual person" to round out the environmental identity scale. I scored responses on a 7 point Likert scale ranging from 'not at all true of me' (1) to 'completely true of me' (7). Some items on the environmental identity scale are: "How "true" of you are each of the following statements?" (1) I spend a lot of time in natural settings (woods, mountains, desert, lake, ocean); (2) Engaging in environmental behaviors is important to me; (3) My own interests usually seem to align with those of environmentalists. (See Appendix A for all 11 items used in the scale). The reliability of my environmental identity scale is high, with Cronbach's Alpha of .851.

Control Variables

Recognizing that other factors may affect the relationship between previous environmental behavior, political liberalism, and environmental identity on both green and environmental justice, I control for several demographic factors, including gender,

racial and ethnic background, parental income level, and parental education levels. (See Appendix A for coding scheme). I include these variables as controls because previous work in environmental concerns indicates that demographic variables including gender, race/ethnicity, and socioeconomic status impact perceptions of environmental issues.

Regression Models

OLS regression analyses examine how my independent variables directly affect justice perceptions and whether environmental identity mediates previous behavior and political liberalism on justice perceptions. First, I ran partial models to analyze the direct effects of my independent variables on green and environmental justice. In my first direct effects partial model (Model 2 in Table 3), I include my controls, all three previous environmental behavior categories, and political liberalism. In my second direct effects partial model (Model 3), I include my controls and environmental identity. After running my partial direct effect models, I ran my full model (Model 4), which includes controls, all three previous behavior categories, political liberalism, and environmental identity. Finally, in order to test the mediating model, I ran Model 1, which tests the effects of my controls, the three categories of previous environmental behavior, and political liberalism on environmental identity.

RESULTS

Table 1 presents the descriptive statistics for each variable. The means, standard deviations, minimums, and maximums for green and environmental justice are very similar, suggesting that the sample perceives green and environmental injustice with similar severity. Additionally, among previous behaviors, recycling is the most common (mean = 4.48), followed closely by reduce/reuse behaviors (mean = 4.38). Advocacy-

oriented behaviors, however, are less common (mean = 2.99). This pattern is perhaps due to the fact that reduce/reuse and recycling behaviors have become more normative, especially for my sample. Additionally, these behaviors require much less of a time commitment than advocacy-oriented behaviors. Overall, the means for all of my variables are above average on my 7 point scales, indicating high levels of parental income and education, political liberalism, environmental identity, and perceptions of green and environmental justice. The only variable with a below-midpoint mean is previous advocacy-oriented behavior.

[TABLE 1 ABOUT HERE]

[TABLE 2 ABOUT HERE]

Direct Effects

Table 3 illustrates the direct and indirect effects of previous behavior, political liberalism, and environmental identity on green and environmental justice. Models 2 and 3 contain partial direct effects models, with Model 2 illustrating the effects of previous behaviors and political liberalism on green and environmental justice perceptions, and Model 3 illustrating the effects of environmental identity on green and environmental justice perceptions. The full direct effect models for green and environmental justice perceptions are illustrated in Model 4.

My first hypothesis states that previous enactment of pro-environmental behavior is positively related to an individual's perception of the severity of green and environmental injustice. In my analysis, I organize previous environmental behaviors into three distinct categories: reduce/reuse, recycle, and advocacy. In the partial models for both green and environmental justice (Model 2), the results for hypothesis 1 are

mixed. Previous reduce/reuse and recycling behaviors are not statistically significant for either type of justice evaluation. Advocacy-oriented behavior, however, is positively related to perceptions of green ($b=.188$, $p<.05$) and environmental ($b=.220$, $p<.01$) justice. In Model 4, none of the direct effects of previous behavior categories is statistically significant. However, as discussed further below, Model 1 shows that all three previous behavior categories have significant effects on environmental identity, which in turn affects perceptions of green and environmental justice (Model 4), suggesting that behaviors may have an indirect effect on justice perceptions.

My second hypothesis states that an individual's degree of liberalism is positively related to his or her perceptions of the severity of green and environmental justice. In the partial model (Model 2), political liberalism is positively related to perceptions of green ($b=.154$, $p<.01$) and environmental ($b=.133$, $p<.05$) justice. As illustrated in Model 4, political liberalism continues to have a significant positive relationship with perceptions of green ($b=.177$, $p<.01$) and environmental ($b=.159$, $p<.01$) justice. All of my models, then, lend support for hypothesis 2.

[TABLE 3 ABOUT HERE]

My third hypothesis states that the stronger an individual's environmental identity, the greater he or she will perceive green and environmental injustice to be. Model 3 illustrates that environmental identity is positively related to green ($b=.507$, $p<.001$) and environmental ($b=.332$, $p<.001$) justice perceptions. Additionally, Model 4 illustrates that this relationship remains significant in the full direct effects model for perceptions of green ($b=.398$, $p<.001$) and environmental justice ($b=.320$, $p<.001$), providing support for hypothesis 3.

Mediating Effects

As discussed above, I suspected that environmental identity might play a mediating role in my models. My fourth hypothesis states that environmental identity mediates the effects of previous environmental behavior and political ideology on the severity of the perceptions of green and environmental injustice. Models 1, 3, and 4 illustrate the results of this analysis. Reduce/reuse ($b=.238$, $p<.05$), recycle ($b=.148$, $p<.05$), and advocacy ($b=.219$, $p<.01$) are all positively related to environmental identity in Model 1. However, political liberalism is not significantly related to environmental identity. In Model 3, environmental identity is positively related to perceptions of green and environmental injustice. In Model 4, the full model, environmental identity remains significant while previous behavior does not. These results provide partial support for hypothesis 4. Environmental identity mediates between previous behavior and perceptions of injustice, but not between political liberalism and perceptions of injustice.

Control Variables

Gender and parent's income have no significant effect in any of my models.⁸ Race, however, has a significant negative effect on environmental identity ($b= -.489$, $p<.05$) in Model 1. This finding suggests that nonwhites have a weaker environmental identity than whites. Parent's education is gendered in its effects. While mother's education did not have a significant effect in any of my models, father's education had a significant negative effect on environmental justice ($b= -.143$, $p<.01$).⁹

⁸ Preliminary analysis focusing on income categories produced no patterns. I ran additional analyses bracketing the income categories into low, medium, and high according to cumulative percentages. These categories were as follows: low = less than \$100,000 a year, medium = \$100,001 to \$250,000 a year, and high = greater than \$250,000 a year. This additional analysis yielded the same results as my preliminary results. Parent's income has no significant effect in any of my models.

⁹ I conducted additional analyses in which I grouped mother's education into two categories (less than BA and BA and above) based on cumulative percentages. In this analysis, both categories of mother's

DISCUSSION

I set out to determine the predictors of justice perceptions with regard to environmental issues. I found that the effects of antecedents on green and environmental injustice perceptions are very similar to one another. While the patterns emerging for green and environmental justice are virtually identical for my sample, these results may differ in a more heterogeneous population. I speculate that individuals most concerned with environmental injustice especially are those living in affected neighborhoods (i.e., low income and minorities), and that this type of injustice has not caught the attention of members of higher socioeconomic status.

Additionally, I found that political liberalism and environmental identity predict justice perceptions with regard to environmental issues, and environmental identity mediates the relationship between previous environmental behaviors and justice perceptions. These findings confirm my expectations.

Importantly, I found that environmental identity is the most powerful predictor of justice perceptions, and mediates between past behavior and these perceptions. There are certainly multiple ramifications of this finding. First, they illustrate the necessity of enacting environmentally friendly behavior in order for individuals to integrate environmental issues into their self-perceptions. Indeed, Clayton (2003) constructed her scale to “assess the extent to which the natural environment plays an important part in a person’s self-definition” (p. 52) and to determine individuals’ perceptions of the

education has a significant positive effect on green justice ($b= 2.133, p<.05$ and $b= 1.865, p<.05$, respectively). Upon further analysis of father’s education, I grouped the variable into two categories as well (less than MA and MA and above), also based on cumulative percentages. Here, father’s education has a significant effect on green justice ($b= 2.258, p<.05$ and $b= 2.343, p<.01$, respectively). I do not place much importance on these findings, however, because of the small degrees of freedom involved in the analysis. Additionally, none of these recodes changed the hypothesized patterns or findings.

relationship between humans and the natural world. These perceptions, in turn, guide individuals' beliefs regarding human behavior.

With respect to previous environmental behavior, I found that for both green and environmental justice perceptions, environmental identity mediates the relationship. This suggests that each category of previous behavior strengthens environmental identity, which in turn strengthens perceptions of green and environmental injustice. Behaviors ranging from turning off the faucet while brushing your teeth to encouraging friends and family to recycle, then, become meaningful to individuals through their incorporation into his or her environmental identity. Although all categories of previous behavior were statistically significant, previous advocacy-oriented behaviors, slightly more so than reduce/reuse and recycling behaviors, strengthen environmental identity, which in turn strengthens perceptions of green and environmental injustice.¹⁰ This suggests that behaviors that are more time consuming and out-of-the-ordinary, such as attending a meeting or event sponsored by an environmental group, may become slightly more meaningful aspect of individuals' environmental identity. Additionally, advocacy-oriented behaviors can be construed as a response to perceptions of injustice, and it is therefore not surprising that, among the behaviors studied here, it would have the most significant effect on justice perceptions.

Finally, political liberalism has a positive relationship with justice perceptions in the direct effect model, but it does not have an indirect effect on justice perceptions mediated through environmental identity. This suggests that political liberalism operates independently from environmental identity. I believe that this is due to the politicized

¹⁰ The standardized coefficients of previous environmental behaviors on environmental identity are as follows: reduce/reuse $b=.236$, $p<.05$, recycle $b=.226$, $p<.05$, and advocacy $b=.270$, $p<.01$.

nature of both green and environmental justice issues. Green justice issues, such as the greenhouse effect and the possibility that we are reaching the limits my ecosystem can handle, receive much debate in the political arena. These issues, for example, were a charged topic during the 2008 presidential campaign that was occurring when my respondents completed the survey. Additionally, sites such as those funded through EPA Superfund programs have gained considerable political attention recently, and politically organized groups have devoted much attention to issues surrounding toxic waste sites and polluted air and water. Students entering college are certainly aware of these issues, and will eventually be the ones addressing our nation's environmental dilemmas.

As with every research project, mine is not without limitations. First, my population consists primarily of upper middle class young adults. Certainly socioeconomic status and age may have an impact on perceptions of many different justice issues, not just those pertaining to the environment. Additionally, because many of my respondents had not yet had the opportunity to vote in a political election, their political ideologies may not be fully developed. Future research can address these issues in a number of ways. First, longitudinal research on how college students' justice perceptions change over time would help track changes on the development of political ideologies. It would also provide an opportunity to track changes in environmental identity over time and why they may change. Second, qualitative research would garner more in-depth information of the processes involved in perceptions of justice. Finally, future research should take my models a step further in order to determine how justice perceptions affect projected future behaviors.

Although my sample consists of young adults entering college, their views on the environment are important to study because their behavior will affect future generations. My findings have implications for institutions such as colleges and universities wishing to engage their student populations in ongoing environmentally responsible behaviors, as perceptions of injustice often are a necessary precondition for future collective behavior (Hegtvedt 2006; McAdam 1982). They suggest that colleges and universities should implement programs geared towards strengthening students' environmental identities in order to ensure ongoing environmentally friendly behaviors. This is especially important at the college level, as many students are entering young adulthood, living on their own for the first time, and forming their identities. Programs that are not just behavior-oriented, but also focused on strengthening identity, would strengthen students' environmental identities and therefore have a lasting impact on their environmental behaviors.

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Table 1 Descriptive Statistics

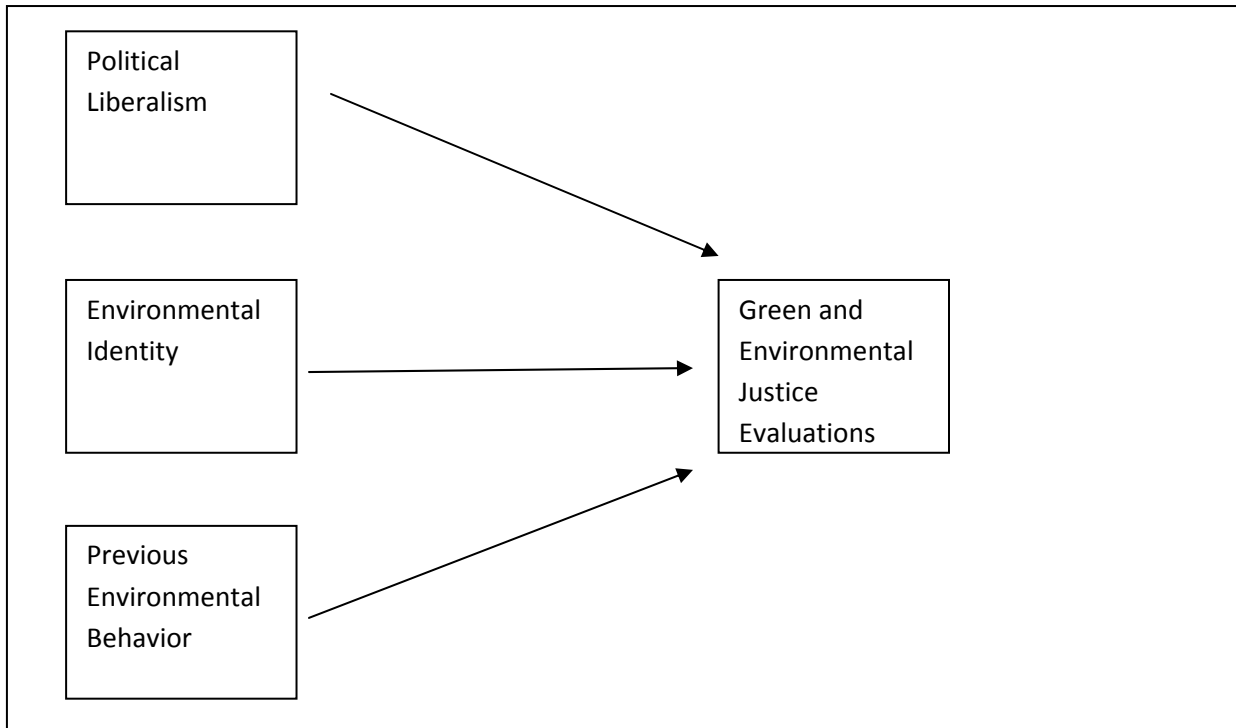
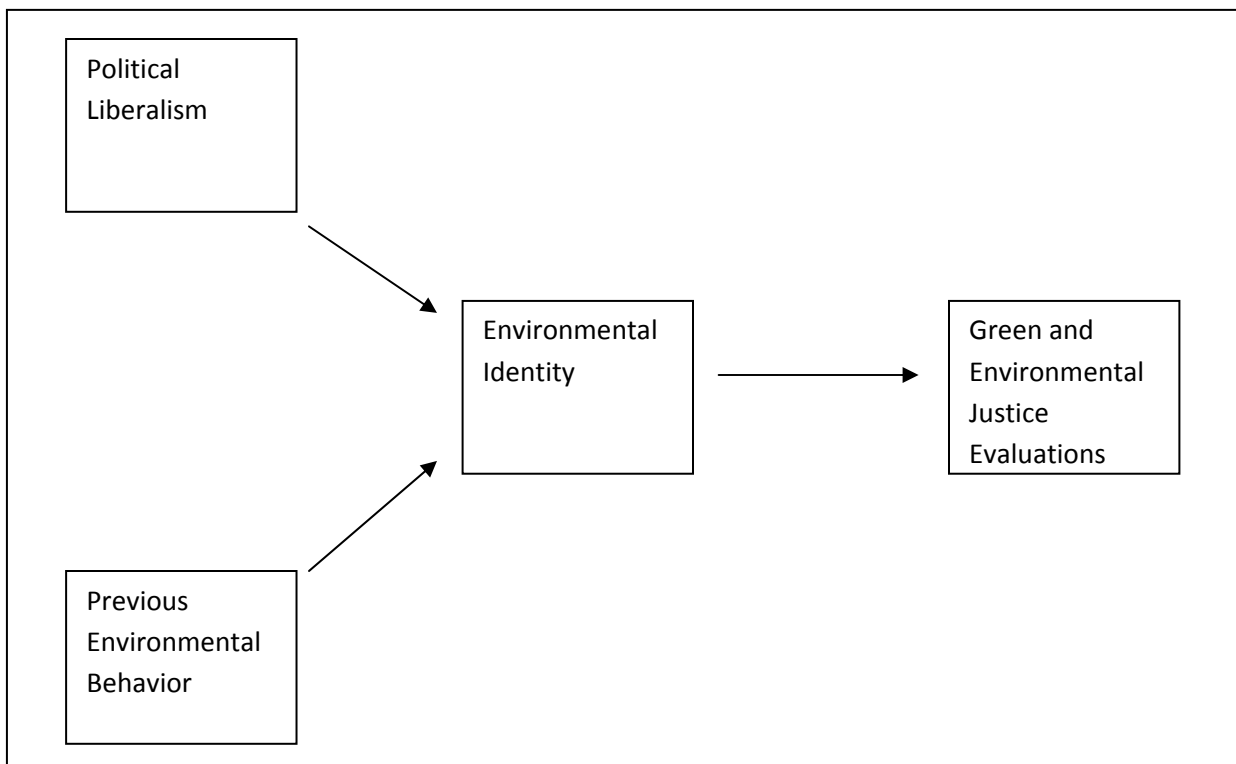
| | Mean | Standard Deviation | Minimum | Maximum |
|--|-------------|-------------------------------|----------------|----------------|
| <i>Independent Variables</i> | | | | |
| <i>Controls</i> | | | | |
| Female (v. Male) | 57.9% | | | |
| White (v. nonwhite) | 63.6% | | | |
| Income | 5.34 | 2.25 | 1.00 | 8.00 |
| Mother's Education | 4.23 | 1.50 | 1.00 | 7.00 |
| Father's Education | 4.58 | 1.95 | 1.00 | 7.00 |
| <i>Previous Behavior</i> | | | | |
| Reduce/Reuse | 4.38 | 1.09 | 1.80 | 7.00 |
| Recycle | 4.48 | 1.60 | 1.20 | 7.00 |
| Advocacy | 2.99 | 1.33 | 1.00 | 7.00 |
| Political Liberalism | 4.77 | 1.43 | 2.00 | 7.00 |
| Environmental Identity | 4.54 | 1.10 | 1.82 | 7.00 |
| <i>Dependent Variables</i> | | | | |
| Green Justice Scale | 5.51 | 0.93 | 2.14 | 7.00 |
| Environmental Justice Scale | 5.46 | 0.90 | 2.25 | 7.00 |

Table 2 Correlation Matrix

| | | Reduce & Reuse | Recycle | Advocacy | Political Liberalism | Environ Identity | Green Justice | Environ Justice |
|---------------------------------|---------------------|-------------------------------|----------------|-----------------|---------------------------------|-----------------------------|--------------------------|----------------------------|
| Reduce & Reuse | Pearson Correlation | 1 | | | | | | |
| | Sig. (2-tailed) | | | | | | | |
| Recycle | Pearson Correlation | .469** | 1 | | | | | |
| | Sig. (2-tailed) | 0 | | | | | | |
| Advocacy | Pearson Correlation | .503** | .526** | 1 | | | | |
| | Sig. (2-tailed) | 0 | 0 | | | | | |
| Political Liberalism | Pearson Correlation | 0.063 | .270** | .258** | 1 | | | |
| | Sig. (2-tailed) | 0.484 | 0.002 | 0.004 | | | | |
| Environ Identity | Pearson Correlation | .524** | .412** | .546** | 0.069 | 1 | | |
| | Sig. (2-tailed) | 0 | 0 | 0 | 0.459 | | | |
| Green Justice | Pearson Correlation | .351** | .383** | .488** | .329** | .580** | 1 | |
| | Sig. (2-tailed) | 0 | 0 | 0 | 0 | 0 | | |
| Environ Justice | Pearson Correlation | .197* | .180* | .384** | .321** | .462** | .536** | 1 |
| | Sig. (2-tailed) | 0.031 | 0.048 | 0 | 0 | 0 | 0 | |

Table 3 Nonstandardized Regression Coefficients for the Effects of Previous Behavior, Political Liberalism, and Environmental Identity on Perceptions of Green and Environmental Justice

| | 1 | | 2 | | 3 | | 4 | |
|-------------------------------|--------|--------|---------|---------|---------|---------|---------|--|
| | EID | Green | Environ | Green | Environ | Green | Environ | |
| <i>Controls</i> | | | | | | | | |
| Female (v. Male) | .053 | .052 | .226 | .085 | .215 | .006 | .164 | |
| White (v. Nonwhite) | -.489* | -.199 | -.273 | .032 | -.129 | -.066 | -.073 | |
| Parent's Income | -.061 | .000 | -.044 | .031 | -.028 | .029 | -.025 | |
| Mother's Education | .014 | -.050 | .108 | -.039 | .135 | -.069 | .110 | |
| Father's Education | -.007 | .006 | -.134* | -.013 | -.170** | .018 | -.143** | |
| <i>Previous Behavior</i> | | | | | | | | |
| Reduce/Reuse | .238* | .110 | -.008 | | | .003 | -.094 | |
| Recycle | .148* | .069 | -.030 | | | .034 | -.068 | |
| Advocacy | .219** | .188* | .220** | | | .101 | .136 | |
| <i>Political Liberalism</i> | | | | | | | | |
| | -.071 | .154** | .133* | | | .177** | .159** | |
| <i>Environmental Identity</i> | | | | | | | | |
| | | | | .507*** | .332*** | .398*** | .320*** | |
| R ² | .413 | .308 | .305 | .329 | .293 | .445 | .383 | |

FIGURES**Figure 1 Green and Environmental Justice Direct Effects Model****Figure 2 Green and Environmental Justice Mediating Model**

APPENDIX A: VARIABLE CODING

Controls

Gender: 0=male, 1=female

Race: 0=nonwhite, 1=white

Income: What is your parents' estimated annual combined income?

1. Less than 25,000
2. \$25,001-\$50,000
3. \$50,001-\$75,000
4. \$75,001-\$100,000
5. \$100,001-\$150,000
6. \$150,001-\$200,000
7. \$200,001-\$250,000
8. More than \$250,000

Mom's Education: What is the highest level of school that your mother or female guardian has completed?

0. N/A
1. High school graduate/GED /less than high school
2. Technical/Vocational
3. Some college or Associates degree
4. Bachelor's degree
5. Master's degree (e.g., MA, MBA, MPH, MSW)
6. Professional school degree (e.g., MD, JD, DVM, DDS)
7. Doctorate degree (e.g., PhD, EdD)

Dad's Education: What is the highest level of school that your father or male guardian has completed?

0. N/A
1. High school graduate/GED /less than high school
2. Technical/Vocational
3. Some college or Associates degree
4. Bachelor's degree
5. Master's degree (e.g., MA, MBA, MPH, MSW)
6. Professional school degree (e.g., MD, JD, DVM, DDS)
7. Doctorate degree (e.g., PhD, EdD)

Independent Variables

Previous Behavior—Reduce/Reuse:

During the last 6 months, how often did you¹¹

1. Turn off the faucet while brushing your teeth
2. Turn off lights when exiting a room
3. Walk, ride a bike, or take public transportation instead of driving or riding in a car
4. Use your own bag or carry purchases without a bag instead of using paper or plastic bags at stores
5. Unplug chargers for phones, iPods, etc when not in use

Previous Behavior—Recycle

During the last 6 months, how often did you¹²

1. Recycle paper
2. Recycle containers (e.g., plastic, glass, aluminum)
3. Encourage family members to recycle
4. Encourage friends to recycle
5. Purchase products in reusable or recyclable containers

Previous Behavior—Advocacy

During the last 6 months, how often did you¹³

1. Limit your consumption of meat for environmental reasons
2. Advocate for solutions to environmental problems
3. Avoid using products harmful to the environment
4. Attend a meeting or event sponsored by an environmental group

Environmental Identity Scale

How “true” of you are each of the following statements?¹⁴

(1=not at all true, 7=completely true of me)

1. I spend a lot of time in natural settings (woods, mountains, desert, lake, ocean)
2. Engaging in environmental behaviors is important to me
3. I think of myself as a part of nature, not separate from it
4. If I had enough time or money, I would certainly devote some of it to working for environmental causes
5. Being a part of the ecosystem is an important part of who I am
6. I feel that I have roots to a particular geographic location that had a significant impact on my development

¹¹7 point Likert scale ranging from never (1) to always (7)

¹²7 point Likert scale ranging from never (1) to always (7)

¹³7 point Likert scale ranging from never (1) to always (7)

¹⁴ 7 point Likert scale ranging from not at all true of me (1) completely true of me (7)

7. Behaving responsibly toward the Earth—living a sustainable lifestyle—is part of my moral code
8. Learning about the natural world should be an important part of every child's upbringing
9. In general, being part of the natural world is an important part of my self-image
10. My own interests usually seem to coincide with the position advocated by environmentalists
11. I am a spiritual person

Dependent Variables

Green Justice Scale

How much do you agree or disagree with the following statements?¹⁵

1. Humans are severely abusing the environment
2. Humans have the right to modify the environment to suit their needs
3. If things continue on their present course, we will soon experience an ecological catastrophe
4. We are approaching the limits the earth can support
5. The greenhouse effect is dangerous to the environment
6. Pesticides and chemicals are dangerous to the environment
7. People have a general responsibility to conserve environmental resources for future generations

Environmental Justice Scale

How much do you disagree or agree with each of the following statements?¹⁶

1. Decisions about where to situate polluting industries should take into account the opinions of the people who would live near those sites.
2. Environmental damage generated here in the US harms people all over the world
3. Equal treatment of all people should be considered when decision-makers are solving environmental problems
4. Poor neighborhoods are unfairly disadvantaged in terms of exposure to environmental hazards

¹⁵ 7 point Likert scale ranging from strongly disagree (1) to strongly agree (7)

¹⁶ 7 point Likert scale ranging from strongly disagree (1) to strongly agree (7)