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The Natural World and Environmental Public Opinion in America

CADEN BUXTON
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Reviewed and approved* by the following:

Amy Linch
Professor of Political Science
Thesis Supervisor

Gretchen Casper
Professor of Political Science and Asian Studies
Honors Adviser

* Electronic approvals are on file.

ABSTRACT

Climate change and environmental degradation are major areas of policy concern, with a substantial section of public opinion literature dedicated to environmental issues. In democratic contexts, where public preferences should translate into policy, the formation of public attitudes on the environment is particularly relevant. This paper utilizes survey data from the 2018 and 2021 versions of the GSS to examine whether access to nature and deriving benefits from these natural spaces alters policy preferences on environmental spending. This link is situated in the Values-Beliefs-Norms approach to environmental public opinion, which expects policy preferences and behaviors to derive from underlying pro-environment values. Multinomial regression finds that respondent experience of nature has little to no relationship on stated preferences for spending to protect the environment in both the 2018 and 2021 datasets. Other factors, like trust in science, age, and gender, were found in both years to predict respondent policy preferences. The predictive significance of these factors matches the literature on environmental public opinion. This paper concludes that there is insufficient evidence that the psychological or social benefits of nature meaningfully shape policy preferences, although the topic of environmental public opinion in America deserves further study.

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Chapter 1

The Democratic Context

Before exploring the nature of public opinion towards the environment, it is worth situating the role of public opinion and democracy in facilitating environmental policy. It can be expected that autocratic regimes, with a priority on the maintenance of a small elite coalition and the ability to directly suppress popular environmental movements, have a decreased concern for the public's understanding of environmental problems. As mentioned later, public attitudes are associated with emissions outcomes in a democracy, suggesting that the ability of a government to translate public opinion into policy outcomes is relevant in mitigating environmental degradation. While there are challenges to the robustness of American democracy, it is in the democratic context that this paper seeks to understand and highlight public attitudes. For this reason, the assumptions of democratic institutions and the responsiveness of democracies to both environmental challenges and public opinion ought to be explained.

Democracy and Climate Change

The relationship between democracy and environmental policy is often formulated as a test of democratic responsiveness: "do democracies fare better at dealing with climate change?" As Burnell identifies, however, the relationship is bidirectional; Environmental catastrophe poses a threat to emerging democracies across the world (2012). The effort to mitigate the harm of climate change is not only a fight to preserve the planet, but also to maintain fragile democratic progress. The scholarship on democratization notes that the process of democratization can be a

long and fraught journey. Autocratic backsliding is possible at every stage, and various regimes, even after adopting certain democratic characteristics like elections, have settled into a hybrid or 'competitive authoritarian' structure. It is at this stage, when democratic institutions are in their infancy and when democratic practices are only beginning to develop, that ecological collapse poses the greatest threat.

It is difficult to understate the scope of the threats posed by climate change. The management of land and water, the treatment of refugees, and the international coordination required to address ecological change are all severe challenges for vulnerable democracies. It is no surprise that Schellnhuber equates climate policy to national security and predicts the deepening of international divisions as a result of environmental degradation (2010). It is also worth noting that climate change presents itself as an unequal threat. The countries least responsible for greenhouse gas emissions (GGEs) are often most vulnerable to temperature changes and extreme weather events that climate change implies (Climate Vulnerable Forum, 2010). It is these countries, with minimal industrialization and diminished wealth, that are most threatened by climate change and whose nascent democracies are similarly in danger. It is no wonder that some scholars have predicted a surge of 'environmental autocracy' (Beeson, 2010).

Even where democratic institutions are robust, the security threats posed by climate change and the securitization of climate discourse are a significant challenge (Burnell, 2012). Managing the climate as an issue of 'energy independence' or otherwise administering climate policy through the state security apparatus shifts the focus away from environmental justice. It transforms the problem of international responsibility into one of competition for remaining resources (Trombetta, 2008). While fragile democracies in the developing world are threatened by natural disasters and economic collapse, consolidated democracies in the developed world

(some of the highest per capita emitters and where emissions reductions have a large impact) are threatened by the erosion of democracy. The nature of public discourse enters here as a challenge to climate cooperation. Framing climate change as an issue of security risk and competition encourages the public to turn away from international consensus-building and towards a nationalist or militarized response.

Although the relationship is complicated, it is worth analyzing the record of democracies on climate policy. Povitkina, in a review of several studies on this topic, finds some evidence that democracies are better suited to address climate change, but with some important qualifiers. Povitkina adopts a framework that incorporates corruption as a key moderator in the democracy-environmental policy relationship. Using this, she finds that democracy is only associated with better environmental performance, in terms of CO_2 emissions, when corruption is low. Outside of a low-corruption context, democracies do not appear to perform better than autocratic regimes in the implementation of environmentally sound policies (Povitkina, 2018). This points to a critical weakness among governments in the process of democratization. Corruption undermines democratic confidence and limits environmental progress, which then challenges democracy. Not only is the strength of a democracy relevant when analyzing emissions, but so is the government's ability to limit corruption and build public trust.

As noted, Povitkina examines environmental policy in terms of CO_2 emissions. Li & Reuveny look at multiple responses and find that on other metrics of anthropogenic environmental degradation, such as deforestation or nitrogen dioxide emissions, democracies similarly perform better than autocracies. What remains unclear in the literature is why democracies vary in their performance on environmental issues (Li & Reuveny, 2006). What is

identified as the superior environmental record of democracies may be better explained by the industrialization, wealth, or public sentiment of those democracies.

Bättig & Bernauer argue that the record of democracy on the environment is not so clear. They label the relationship as "ambiguous" when looking at emissions trends (2009). They posit that democracies often fail to overcome both the issue of free-riding and the undervaluing of abstract, future problems like climate change. They further point to the "words-deeds" gap as a weakness in democratic responsiveness. While democracies may readily commit to international treaties and proudly proclaim their environmental positions, they often fail to implement these commitments in a timely manner. While it may be desirable for countries to make these commitments even if they do not follow through fully, Bättig & Bernauer are wary of how meaningful these commitments are without policy gains. While autocratic systems may not prioritize public goods, the heightened control the government can exercise over private enterprises and individuals may prove attractive in moments of ecological crisis.

Democratic Responsiveness

The question of whether democracy promotes environmental policy can be reformulated as a question of how to hold democracies accountable or how to guarantee the execution of climate promises. Kotov & Nikitina touch on this question and argue that democracies are still more responsive than autocracies because of public input in the policy process. Holding regular elections and allowing for political mobilization allows for policy changes to happen faster than autocratic suppression (1995). Whatever efficiency may be gained from eliminating democratic deliberation is not worth the sacrifice of popular organization and contributions from the public.

The quality of a democracy can be assessed by its ability to safeguard itself from ecological degradation and the autocratic backslide that climate crisis may bring.

If the scholarship suggests that democracies are generally better equipped to handle ecological challenges, then what within a democracy promotes strong environmental policy? Previous literature has emphasized some of the hallmarks of robust democracies, such as the free flow of information and freedom of the press as conducive to environmentalism (Schultz & Crockett, 1990). It is only within a democracy that the dangers of climate change or other environmental problems can be communicated to the public; It is only within a democracy that the public can then organize around this policy problem. This assumes that when referring to democracy, one considers not only elections, but the robust protection of civil liberties. Another assumption in this line of thinking is that education about environmental problems promotes a reasoned public response, while censorship is a barrier to environmentalism. A key shortcoming is the possibility that inundating the public with information may obfuscate environmental problems or that the public may democratically select policy outcomes that harm the environment.

Burnell aptly summarizes some of the assumptions regarding democratic responsiveness to environmental challenges (2012). Democracies ought to be more interested in the preservation of life and anticipate future problems. At the most basic level, democracies are expected to respond to the expressed concerns of the citizenry and to be in some way accountable to the public. If a strong democracy can be identified by these criteria, then public opinion emerges as a driver of environmental policy. A study by Tjernstrom & Tietenberg supports the notion that public opinion does matter in shaping environmental policy in democracies (2008). In particular, the public's demand for global goods and affinity for the global community are associated with

diminished emissions among the countries surveyed. Democratic institutions are vital tools through which public concerns about the environment can be realized. While ideals of 'law and order' or the value of human life may impact the behavior of democratic countries, Tjernstrom & Tietenberg argue that public awareness and attitude do meaningfully impact policy.

Assuming a low-corruption, democratic context where public opinion does promote environmental policy, what influences public opinion?

Chapter 2

Literature Review

As climate change progresses, the study of public opinion has monitored trends in attitudes towards environmental issues. Overall, public awareness of ecological problems has increased. The challenge has shifted to addressing discrepancies in public opinion and explaining what has caused shifts in public sentiment. Possible explanations include differences in gender socialization, ideological commitments to capitalism, and the expression of ecological values. Before proceeding with an analysis of natural experiences, it is worth summarizing the theoretical explanations for environmental public opinion that have been presented by scholars.

Public Opinion Across the World

In an examination of public opinion towards climate risk across the globe, Leiserowitz explains the relevance of surveying public attitudes in the context of eminent ecological changes. "Public opinion is critical because it is a key component of the socio-political context within which policy makers operate. Public opinion can fundamentally compel or constrain political, economic, and social action to address particular risks… Further, successfully mitigating or adapting to global warming will require changes in the behavior of billions of human beings, who each day make individual choices that collectively have enormous impacts on the Earth's climate" (Leiserowitz, 2007). As Leiserowitz identifies, there are some hopeful trends in public opinion that point to a growing awareness of climate problems. As of 2006, the publics of dozens of the largest economies (excluding the United States), label climate change as a serious problem. In all but a handful, this proportion increased between 2000-2006. Although the US

remains behind the curve in some regards, at the time of Leiserowitz's writing, the percentage of citizens who were worried 'a great deal' about climate change was at the highest it had ever been measured.

The patterns in public opinion that may prove more damaging than awareness or concern is the misunderstanding and outright denial of climate science. In some of the world's dominant economies, including the United States, Canada, and Great Britain, 15-20% of those surveyed say they remain unconvinced that climate change is anthropogenic in nature, with around 40% describing themselves as only 'somewhat convinced' (Leiserowitz, 2007). Before environmental policies can be considered, there is a significant minority among the nations with some of the highest per-capita emissions that fundamentally misunderstands climate change. It is unsurprising, then, that Leiserowitz also finds large discrepancies in public concern between countries studied. While Mexico, Australia, and South Korea are found to have strong majorities who evaluate climate change as 'critical' in importance, the United States does not have such sentiment and retains a roughly 20% minority who appear wholly unconcerned.

More recent polling has tried to capture the growing concern over environmental issues, especially in the United States. Young Americans are increasingly expressing concerns that climate change leads to personal harm. This trend is visible not only among American, but among the voting public of several developed economics, including the UK and Canada. Polling conducted by the Pew Research Center has found that majorities of many advanced economies are not only concerned about the climate, but willing to alter behavior to address ecological concerns (Bell et al., 2021).

Environmental movements face major hurdles in shifting public opinion: climate change is often ranked as a lower priority than economic issues, immigration, and other salient policy concerns. A Gallup poll from November 2021 asked voters to identify the single most important

problem facing the US today. Respondents placed climate change below the top ten most frequent responses, with less than 5% of respondents placing climate change as the chief political priority (Gallup, 2021). A Quinnipiac poll from the same month yielded similar results when asking an identical question. Economic issues and inflation were indicated as a higher political priority, alongside immigration, border security, and Covid-19 (Quinnipiac, 2021). Even if the public agrees that policies must be implemented to address climate change, higher priority issues may ultimately drive policy away from environmental concerns.

A Pew Research Center poll from 2018 corroborated the Gallup and Quinnipiac results. Evergreen issues like immigration, race relations, were all ranked as a higher political priority than the environment. Far more respondents identified Former President Trump as a more relevant threat than climate change, a response that has since vanished from new polls asking the same question. The Pew poll also identified various symbolic and cultural issues that were ranked similarly or higher in importance as environmental issues. These included vague signals towards dissatisfaction like "truth/trustworthiness" or "lack of humanity/respect" (Pew Research Center, 2018). Not only does this confirm that general economic issues command more attention from the public, but that immaterial issues regarding political discourse, polarization, and cultural divisions also push environmental problems out of public focus.

Explanations for Environmental Attitudes

From where do these differences in public opinion emerge? Kim & Wolinsky-Nahmias examine the role of two relevant factors—a country's wealth and a country's vulnerability/climate risk. As they explain, some surveys have found that a majority in all countries surveyed are at least somewhat concerned with the issue of climate change. What remains is to explain the considerable variation between countries on questions of climate risk

and policy (2014). It is also unclear if the broad concern towards ecological challenges mirrors popular support for specific policies and translates into a willingness to change behavior.

These findings run contrary to the expectations of the postmaterialist values theory, which supposes that environmental policies and other immaterial issues are a key concern once basic needs have been met. This theory would then expect greater awareness of climate issues among the most developed nations, which have advanced the most towards fulfilling the basic needs of the public. The evidence, however, suggests that environmental priorities do not develop as a separate concern following the fulfillment of foundational needs. Additionally, Kim & Wolinsky-Nahmias find that vulnerability is correlated with a willingness to pay for climate policies (2014). This study casts doubt on the framing of environmental concerns as beyond the material realm and implies a public awareness of climate change as an acute danger that runs alongside economic development.

Table 1: Overview of Theoretical Explanations

Theoretical Perspective	Key Argument
Values-Beliefs-Norms Theory	pro-environmental values influence general beliefs about the environment, which shape beliefs about the consequences of environmental change on what is valued these specific beliefs about the threat to things valued by individuals affect perceptions about the ability to reduce those threats, which in turn influence norms about taking action
Anti-Reflexivity Thesis	organizations, groups, and individuals on the political Right are more supportive of the industrial capitalist system and are more dismissive of claims about the problems it causes—such as climate change—than are those on the political Left
Gender Socialization Theory	females tend to be socialized toward a feminine identity stressing attachment, empathy, and care, and males tend to be socialized toward a masculine identity stressing detachment, control, and mastery in many countries around the world
Postmaterialist Values Thesis	concern for the environment emerges after basic material needs and political and emotional security have been met younger adults (who have come of age more recently under more materially affluent conditions), adults with higher socioeconomic status (income and education), and adults who report stronger postmaterialist values report stronger pro-environmental views than their respective counterparts
Cultural Theory	environment risk perceptions are shaped by cultural worldviews via psycho-cognitive processes adults who report more hierarchicalist (versus egalitarian) or individualist (versus collectivist) worldviews tend to minimize environmental risks whose solutions likely entail greater economic redistribution and/or governmental intervention into markets

From McCright, A. M., et al., (2016). Ideology, capitalism, and climate: Explaining public views about climate change in the United States, 2016, Energy Research & Social Science, 21, 180-189.

Returning to the American context, a metanalysis by McCright et al. summarizes the literature on public opinion in the United States and describes some of the major theoretical frameworks that encompass this body of scholarship.

The three most consistent predictors of approval of environmental protections and climate policies in this metanalysis are environmentalism, political orientation, and gender. In the 44 instances where it is included, every single study finds that holding pro-environment views is associated with belief in climate change, concern about the climate, policy support, and 'pro-climate behavioral intentions' (McCright et al. 2016). While not especially surprising, this can be taken as empirical support for the Values-Beliefs-Norms (VBN) framework, which suggests that holding ecological values translates into specific beliefs, in the form of awareness or concern, and norms, in the form of policy preferences or assessments of personal behavior.

The second factor that McCright et al. argue contribute significantly to views towards environmental policies is political orientation. This orientation is composed of two measurements: ideological identification and party affiliation. Respondents who self-identify as ideologically towards the Left and/or affiliate with parties on the Left report more pro-climate views in 128 of 135 instances. In no studies evaluated do the authors find Right-leaning respondents to be more pro-environment. On the question of climate policy, it appears that measuring either party identification or ideological identification yields a similar result. McCright & Riley argue there has also been significant party polarization on climate change since 2001 (2016).

It is unclear if the harmony between party affiliation and ideological orientation on climate issues is genuine or merely the result of measurement design. As Lewis points out, political parties can and do switch ideological positions and loaded terms, such as 'liberal' or 'conservative' are subject to change over time. In the context of environmental problems, there is a tremendous range of possible remedies and perspectives. A simple left-right spectrum only captures a single political moment and also fails to account for the competing ideas that parties

and political movements incorporate into their platforms. Is it 'liberal' or 'conservative' to value the environment, but argue that the best path forward is to allow private entrepreneurs to develop climate solutions?

The Thesis of Anti-Reflexivity can inject some ideological sophistication into questions of environmental opinion. McCright's explanation, from Human Ecology Review, claims that climate change skepticism is correlated with "trust in groups representing the industrial capitalist system" (2016). Those that are skeptical of climate change or unconcerned with the implications of climate problems, are found to be in-line with the status quo of industrial fossil fuel use in their expressed policy preferences and self-described behavior. Whether there exists in the public mind a thorough understanding of industrial capitalism is unclear. What is evident is that identification with groups and parties amenable to fossil fuels ('the Right' and the GOP in the American context) mirrors climate change skepticism.

Again, ideology is not wholly captured in this Thesis. While today's Republican party may defend fossil fuel use, this has not been the sole political concern in the party's history. Additionally, there are competing explanations for why a person or party might be constrained to promote fossil fuel use. Is this predisposition a principled defense of free markets or a nationalistic concern for subsidized extractive industries? Is it a lack of concern with climate problems or the prioritization of energy production? While it is worth studying the underlying environmental values that promote policy, these cannot be distilled to a left-right spectrum.

The third robust factor identified in McCright et al.'s metanalysis is gender, with a majority of the 96 studies examined finding that women reported greater support for environmental policies than men, and no studies finding the opposite result. In accordance with gender socialization theory, this may be explained by the emphasis placed on care and

subjectivity in the socialization of girls (Gilligan, 1993). Although notable, this conclusion warrants further study, as many of the papers included find no statistically significant relationship between gender and climate views (McCright et al., 2016). Another limitation to this is the construction of the studies involved, which tend to use a simple male-female demographic question when gender is incorporated as a factor. This offers little information about the specific differences in socialization that produce different attitudes on climate questions.

McCright et al. are critical of the postmaterialist values thesis (Inglehart, 1997) citing mixed results regarding the relationship between age and climate views, the role that income and education play in shaping these views, and a general lack of scholarship directly addressing the topic. Other relevant factors that have received limited attention, but nonetheless represent innovation in environmental public opinion, include religiosity (Hamilton & Keim, 2009) and egalitarian values (Feldman et al., 2011). Religiosity has tended to have a negative effect on approval of climate policies (although this may dissipate when controlling better for certain secular values), while egalitarianism has a positive effect.

Chapter 3

Theory and Hypotheses

After reviewing the theories put forward by the public opinion literature, how can experiences of nature be incorporated into a theoretical framework that explains policy preference? The central theoretical question for this paper is as follows: does one's experience with nature impact one's policy preferences on environmental issues? Looking at McCright et al.'s metanalysis, VBN seems an appropriate theory that can help situate the natural world in policy preferences. There is a political question in how best to translate policy preferences into legislation and a social question of what role public spaces and experiences have in shaping public opinion.

Values-Beliefs-Norms

As McCright et al. indicate in their metanalysis of the literature on environmental public opinion, the most consistent predictor of support for pro-environment policies is "pro-environment views" (McCright et al., 2016). This finding is characterized as flowing from the Values-Beliefs-Norms Theory. While many may find it unsurprising that those who claim to value the environment would also indicate support for environmental policies, this theory warrants further elaboration.

Stern et al. offer a foundational explanation of the VBN Theory in the context of environmental issues and public opinion, "Drawing on theoretical work on values and norm-activation processes, we propose a value-belief-norm (VBN) theory of movement support. Individuals who accept a movement's basic values, believe that valued objects are threatened,

and believe that their actions can help restore those values experience an obligation (personal norm) for pro-movement action that creates a predisposition to provide support; the particular type of support that results is dependent on the individual's capabilities and constraints" (1999). It is worth noting some of the implied limits of this theoretical framework. Not only does an individual need to accept basic environmental values but they must be aware of a relevant threat or outcome. Individuals are further limited by the range of actions afforded to them. No matter how strong the values held by any individual, larger social and economic limitations close off arenas of political contestation and limit activity. The range of possible actions further complicates studies that examine pro-environmental behavior. Should scholars expect that ardent environmentalists will protest or purchase paper straws (or both, or neither)?

To update Stern's formulation, Ghazali et al. explain the VBN theory in their examination of pro-environmental behavior in Malaysia (2019). In VBN Theory, there is a clear 'causal chain.' Individuals may hold a certain value, or "guiding principle for any behavior based on desirable trans-situational goals, which vary by relative importance" (Schwartz, 1992). These may include notions of altruism or egoism, biospheric concerns or anthropocentrism, and openness to change (Stern, 2001). These values are refined into specific beliefs, with Ghazali et al. identifying two relevant belief constructs. The first, is a basic awareness of consequence or threat. For example, that the degradation of the environment is a danger to humanity or a tragic loss for the planet, while the safeguarding of the environment is beneficial. The second is an understanding of responsibility. "Ascription of responsibility is a belief that an individual's actions can either prevent or promote potentially undesirable consequences" (Ghazali et al., 2019). Finally, norms arise from these specific beliefs. Individuals who value the environment, see the environment threatened, and believe in their ability to minimize the damage feel morally

obligated to act when the situation presents itself. Observable pro-environment actions are shaped by these norms and are the end product of this process.

Scholars since Stern have refined this causal chain in notable ways. In a study incorporating VBN Theory, Han finds that individuals respond differently when 'non-green alternatives' are attractive (2015). Environmental principles are not always the highest priority but are a component of broad decision-making processes. Similarly, pro-environmental behaviors, even when they appear as the logical conclusion of VBN causal chain, can be undertaken with non-environmental goals in mind (Gifford & Nilsson, 2014). What is most innovative from Ghazali et al., is the notion that environmental norms develop in a wider social context, in their case, ethnic subcultures in Malaysia (2019).

To better understand VBN Theory, allow the causal chain to be reversed, as it might have appeared to scholars studying environmental behavior and attitudes. Starting from the conclusion of the chain, there are pro-environment behaviors. These are the most visible element of this theory. At the individual level, this can include recycling, consumption habits, and involvement in interest groups or protests. One might imagine studying each of these actions, either through surveys or through direct observation. Person A consumes x amount of energy or participated in a climate protest within the last year. At the national level, scholars examine emissions or climate policy (in contexts where national policy is meaningfully influenced by public attitudes). Country B reduced their emissions by y amount or signed onto a climate treaty in the last year. VBN Theory posits that these actions arise, at least in part, from norms governing behavior, which in turn require prerequisite beliefs regarding responsibility and consequence. Continuing to move backwards, scholars can then question the origin of these beliefs. Why are some alarmed

to see the environment threatened while others remain entirely unconcerned? Why are some empowered to act while others do little to change their behavior?

Returning to the start, fundamental values appear as the landscape on which these specific climate beliefs are constructed. Literature on environmental attitudes has often focused on the relationship between values/beliefs and pro-environment behavior/preferences. In McCright et al.'s metanalysis, every paper on public opinion that included some measure of pro-environment views or values found these views to be positively associated with support for pro-environment policies (2016). Although difficult to measure, pro-environment values and beliefs are worth questioning. Are these values static or are they subject to change? Are these values hard coded or the product of experience, socialization, and even policy choices? What accounts for the variation in how respondents assess environmental benefits, climate risks, and their sense stewardship over the planet?

This paper seeks to situate social and natural experiences within Stern's VBN chain. If individual capabilities constrain action, what constrains the belief that the environment is a top policy priority? Of particular interest is the relationship an individual has with the environment, which may inform how one understands the benefits of preserving this environment and assesses the danger of environmental degradation. The purpose of this analysis is to introduce a social component into the VBN framework, as opposed to judging environmental values as internal. For those interested in environmentalism as a movement and in the promotion of environmental policies, there is also a question of positive feedback. If living in a well-maintained environment induces individuals to care for the environment, then environmental policy can socialize future generations to be ecologically conscious citizens. In democratic contexts, where public attitudes

are relevant for policy, the social production and reproduction of ecological values and beliefs is key to executing environmental policy.

This thesis proposes that experiences with nature meaningfully shape ecological values. The personal and social connections that respondents have to the natural world induces concern for the biosphere and builds a foundation of environmental care. These values can be expected to serve as the basis for environmental beliefs and later as the core of behavioral norms. Policy preferences on environmental issues can be conceptualized as the expression of norms about how the environment should be approached at higher levels of organization. It is anticipated by the relationships of VBN Theory that the experiences one has with nature eventually intervene in the construction of obligations towards the natural world and associated policy choices.

Hypotheses

The premise of this paper is to determine if natural experiences lead respondents towards heightened levels of environmental concern. Of particular interest is the public's awareness of the value of natural settings. This is broken down into a person's access to nature and their recognition of the non-commercial value that nature may provide. These benefits include the psychological (such as a feeling of relaxation) and social (like meeting others in a public park). The following chapter specifies the GSS questions used and the grouping of these questions.

This paper predicts that respondents able to access nature more readily and who attribute benefits to this access (e. g., identifying natural spaces as places for social gathering) are more likely to prioritize spending on environmental issues. Higher scores on questions related to natural access and drawing benefits from the environment should predict a higher score on the

topic of environmental spending. Other factors, like age and confidence in science, may also be correlated with attitudes towards environmental policy. These are included to limit confounding and to contribute to the literature. The scholarship on gender socialization, for example, would predict that women are more likely to indicate a preference for increasing environmental spending.

H_0: Accessing nature and drawing benefits from natural environments does not predict a preference for greater spending to protect the environment.

H_1: Accessing nature and drawing benefits from natural environments predicts a preference for higher environmental spending.

Chapter 4

Data and Methods

General Social Survey

The General Social Survey (GSS) is a biennial public opinion survey program conducted by the University of Chicago. It acts as one the best sources of public opinion and demographic data and includes a variety of questions related to policy preferences. Of particular interest is the 2018 edition of the survey, which included a battery of questions concerning respondent experiences with natural spaces alongside the usual demographic and policy questions. A more limited set of questions related to natural environments was retained in the 2021 edition. While other polls and institutions have studied environmental issues, the GSS couples its examination of environmental preferences with useful background that allows for a fuller accounting of the factors that may explain environmental policy preferences. GSS data for all survey years is made available virtually in whole or in part by the University of Chicago.

The questions in the 2018 survey used here include four questions related to drawing benefits from nature and natural spaces and four questions related to access to these environments. All of these questions were formatted as four-point agree/disagree scales. The benefits to be drawn from nature include physical activity, social interaction, relaxation, and a question of whether nature lacks interesting activities. On the topic of access to nature, questions include time spent in nature, satisfaction with one's day-to-day experience, and whether a

respondent sees natural environments. These questions make up the two factors of interest: access to natural spaces and drawing benefits from these spaces.

These eight questions were aggregated into two indexes, one for access to nature and one for enjoyment of nature (drawing psychological and/or social benefits from natural spaces). A higher score on the access index means that across the included questions, a respondent had a high degree of access to nature and natural spaces. The benefits index functioned the same way, with the highest score possible for each set to 16. These two indexes are intended to simplify the analysis by aggregating questions, while still remaining distinct.

The 2021 version of the GSS did not include the extended list of nature-related questions, instead opting to concentrate these concepts into two questions. The first asked respondents to describe their enjoyment of nature and the second asked respondents to describe the frequency of outdoor leisure activities. Given the survey year, the latter question should be placed in the context of the COVID-19 pandemic. Both these questions had five ordinal answer choices. Since the 2021 version does not have questions that can be indexed, the enjoyment of nature question is substituted for the 2018 benefits index, and the outdoor leisure activity question is substituted for the 2018 access index. Other questions that were included in the model, either as the response or as controls, were the same across both survey years. This included age, gender, trust in science, and policy preference on environmental spending.

Controls and Model

After identifying and, in the case of the 2018 survey, indexing the key factors, the response was recoded based on the GSS question related to spending preferences. Over many

survey years, the GSS includes a series of questions related to government funding of various policies. Respondents are asked whether spending should be increased, cut, or maintained to address a particular concern, including protecting the environment. While the response could be considered ordinal, with levels indicating higher/lower support for the environment, it may be more appropriate to conceptualize this response as categorical. Respondents can answer that they find current environmental spending acceptable, which is not necessarily a 'middle' level of environmental support, but may reflect apathy or a desire to protect the status quo. For this reason, a multinomial regression, which can be employed where the dependent variable is categorical or ordinal, is best equipped for this context.

There were several controls added, which not only help in reducing potential confounding, but also allow for this analysis to address some of the theories put forward in the literature. These controls include demographic information, like age and gender alongside educational attainment and a question on the respondent's trust in science. As discussed, there are issues with how surveys assess participant ideology, so the GSS's basic liberal-conservative scale was not included. A more sophisticated ideology measure may be appropriate in future analysis, but this paper argues that belief in science, serving as a proxy for ideological commitment to climate science, is sufficient.

Another variable considered for this analysis was a measure of respondent occupation in order to determine if an economic reliance on the natural world was responsible for respondent policy preference. By examining the 2010 occupational code of respondents, all participants included were separated into two groups: those who have a direct occupational tie to nature and the natural world (farming, fishing, forestry and related professions) and those who did not. However, after reviewing this new measure, it was found that the valid respondents displayed

almost no variation on this metric, as nearly all had occupations that were not connected to nature directly. For the 2018 year, only 8 of the more than 300 valid respondents were determined to have an occupation that was directly reliant on nature. A similarly small proportion of respondents fall into these occupations in the 2021 sample. Although it would be useful for literature in the future to investigate the effects of economic reliance on nature and natural spaces, the GSS data used here does not sufficiently sample respondents in these occupations. For this reason, this variable was not included in the final model.

After compiling the two indexes and recoding other variables where appropriate, a multinomial regression was carried out with the aid of SPSS for the survey years 2018 and 2021. The final n was 358 for the 2018 edition and 530 for the 2021 edition, after excluding invalid responses and respondents who had not answered all of the questions relevant to the model.

Chapter 5

Results

2018 Survey Results

Table 2: 2018 Model Parameter Estimates

Reduce Spending[*]	B	Std. Error	Wald	Sig.
Intercept	-4.984	2.680	3.458	0.063
Benefits index	0.047	0.163	0.084	0.772
Access index	0.163	0.127	1.655	0.198
Trust in science	-1.878	0.599	9.814	0.002
Educational attainment	0.282	0.198	2.034	0.154
Age	0.034	0.014	5.775	0.016
Gender	-0.044	0.498	0.008	0.930

Hold Spending	B	Std. Error	Wald	Sig.
Intercept	-3.602	1.542	5.454	0.020
Benefit index	-0.096	0.096	0.992	0.319
Access index	0.288	0.077	12.823	<0.001
Trust in science	-0.114	0.279	0.167	0.683
Educational attainment	-0.149	0.122	1.491	0.22
Age	0.014	0.008	3.351	0.067
Gender	-0.733	0.276	7.067	0.008

[*]The reference category is to increase environmental spending.

This paper did not find enjoyment of natural environments to be a significant predictor of environmental spending preference. While drawing psychological and social benefits from natural spaces remains relevant in assessing public opinion and values, there is no indication that these benefits are meaningfully connected to environmental spending in the mind of respondents. The health benefits of increased exercise and the social interaction made possible by these spaces continue to make them an attractive project. However, there is no evidence to conclude that this investment alters the public's understanding of ecological issues at higher levels. The majority of respondents favor increasing spending to protect the environment, regardless of their enjoyment of natural spaces.

New questions arise from this null finding. The overall high distribution of scores on this benefit index may suggest that the majority of Americans are overall content with the benefits natural spaces provide. How public opinion may change should these spaces deteriorate remains unclear. Alternatively, policy preferences may be influenced by an assessment of the benefits of nature, but respondents assign responsibility to local decision-makers or non-governmental bodies. In this case, the challenge for environmental movements is to make local environmental issues salient at the state and federal level. Although the GSS cannot capture many of these local particularities, they may present themselves as key areas of policy innovation. This paper recommends that future scholarship continue to assess the state of public natural spaces and investigate further the public's satisfaction with natural experiences.

This paper similarly finds no evidence for educational attainment as a significant predictor. This suggests that respondents who were either satisfied with current environmental spending or favored spending cuts (the less popular answer categories) were not prompted to do so because of educational attainment. If belief in climate science, which is not measured directly

by the GSS, is relevant here, this null finding implies that educational attainment likely fails to capture belief in climate science. While education on specific issues of climate science may enhance public understanding of ecological problems, this paper does not find that general education promotes pro-environmental preferences. It is possible that the worrying persistence of climate denial and skepticism in the U.S. cannot be addressed solely through education. Another explanation is that a robust understanding of climate science does not necessarily induce political action.

This paper does find evidence to suggest that access to natural environments predicts environmental spending preferences. Specifically, respondents who had a higher score on the access index (greater access to nature and natural spaces) were more likely to answer that environmental funding should be held at the status quo (B = 0.288, p < 0.001). There was not statistically significant evidence that greater access to nature predicted a preference for reducing environmental funding. The effect of this was modest, particularly when compared to gender as a predictor, but still worth noting.

Beyond the primary question on the effect of access to and enjoyment of natural environments, two demographic factors were found to be statistically significant. Age was predictive of satisfaction with current environmental spending and approval of decreasing spending (B = 0.034, p = 0.016 and B = 0.014, p < 0.001, respectively). Older respondents were more like to fall into one of these two answer categories over the reference. Given that age is measured continuously in years, the parameter estimate is small, as the effect is minimal for each year, but notable when comparing respondents from different generations. A robust measure of ideology may help to explain some of this variation in future analysis, but the differences in

preference on environmental policies by age presents itself as a distinct hurdle in building a democratic consensus.

Gender was found to predict respondent preference for holding spending as-is, with women less likely to answer in this category than men (B = -0.733, p = 0.008). Again, there was not sufficient evidence that gender predicted a preference for reducing environmental funding. Given the literature on gender socialization, differences between men and women on political preferences is not surprising, but the specifics of this finding point to some unique areas for further research, since gender only predicted status-quo approval and not a spending decrease.

Finally, trust in science was found to be statistically significant in predicting a preference for lowering environmental spending (B = -1.878, p = 0.002). Respondents who indicated a high degree of trust in science were far less likely to say that they prefer a reduction in environmental spending. This was the strongest predictor studied, suggesting that trust in science is critical in shaping policy preferences compared to all other factors observed. This adds to previous literature, which has highlighted acceptance of climate science in promoting pro-environment beliefs and behaviors. Climate science and science more broadly seems tied, at least in the public mind, to the issue of environmental spending. Finding support for environmental policy will require building and retaining trust in climate science.

Table 3: 2018 Model Fit

Model Fit			Likelihood Ratio Tests			
	n	-2 Log Likelihood	Chi-Square	Df	Sig.	McFadden Pseudo R-Square
Final model	358	478.242	49.854	12	<0.001	0.094

For the 2018 survey year, while the model was overall statistically significant, it had a McFadden pseudo R-square of 0.094 and a final n of 358. The pseudo R-square indicates limited practical significance, as the model overall does not explain much of the variation in the dependent variable. The limitations of both models are described in later chapters.

2021 Survey Results

Table 4: 2021 Model Parameter Estimates

Reduce Spending[*]

	B	Std. Error	Wald	Sig.
Intercept	0.573	1.078	0.283	0.595
Enjoy nature	-0.062	0.203	0.094	0.759
Access to nature	-0.118	0.160	0.540	0.463
Trust in science	-2.298	0.392	34.391	<0.001
Educational attainment	0.079	0.132	0.357	0.550
Age	0.033	0.010	10.606	0.001
Gender	-1.254	0.338	13.761	<0.001

Hold Spending

	B	Std. Error	Wald	Sig.
Intercept	0.686	0.744	0.850	0.357
Enjoy nature	-0.059	0.139	0.182	0.669
Access to nature	-0.101	0.112	0.810	0.368
Trust in science	-1.604	0.251	40.867	<0.001
Educational attainment	-0.027	0.095	0.082	0.775
Age	0.024	0.007	11.756	<0.001
Gender	-0.227	0.239	0.901	0.343

[*]The reference category is to increase environmental spending.

For the 2021 year, there was no significant evidence to suggest that leisure time spent in nature or enjoyment of the natural environment predicted environmental spending preference. Although a smaller proportion of respondents answered that spending to protect the environment should be raised compared to 2018 (68.1% compared to 72.2%), there is no evidence to suggest that respondents were altering spending preference based on their time spent in natural environments or their enjoyment of those environments. The likelihood that a respondent opted for the less popular answer categories, to cut funding or hold funding steady, could not be explained by their expressed experience of nature.

As in 2018, respondent educational attainment was not determined to have significant predictive power. Trust in science, discussed below, may serve scholars as a far better measurement when looking at the public's understanding of climate science. That finding that both natural experiences and formal education seemed to offer no explanation of how 2021 respondents approached the issue of environmental spending is relevant both for the study of public opinion and for environmental groups or movements looking to shape and harness public sentiment.

Looking to other controls from the 2021 survey year, age and gender are again found to be statistically significant demographic factors in predicting environmental spending preferences. Age predicted both the spending reduction choice (B = 0.033, p = 0.001) and the status quo funding choice (B = 0.024, p < 0.001). Older respondents were more likely to select one of these answers over the reference (increasing environmental spending), with each year of the respondents age slightly increasing the relative odds of them selecting one of these two spending choices. Gender was found to be predictive only when considering the reduce spending answer

category (B = -1.254, p < 0.001). Respondents who identified as a woman were predicted to be less likely to select the decrease funding option, although there was no significant relationship between gender and voicing a preference for the status quo.

In 2021, trust in science again appears as a relevant predictor of environmental spending preferences. Voicing a higher degree of confidence in science made respondents less likely to answer that environmental funding should be reduced (B = -2.298, p < 0.001) or held at current levels (B = -1.604, p < 0.001). While the 2018 model demonstrated a similar finding, that trust in science predicted the choice to reduce funding, only the 2021 model finds that support for the status quo is predicted by trust in science. As with the 2018 model, these are some of the largest coefficients of the entire model, suggesting that confidence in science has a more meaningful impact on spending preferences than other factors assessed in 2021.

Table 5: 2021 Model Fit

Model Fit			Likelihood Ratio Tests			
	n	-2 Log Likelihood	Chi-Square	Df	Sig.	McFadden Pseudo R-Square
Final model	530	750.710	109.015	12	<0.001	0.125

The model for the 2021 version of the GSS had a final *n* of 530, with the McFadden pseudo R-square of 0.125. This model had a larger sample and greater explanatory power compared to the 2018 model. However, this is still weak-to-moderate in terms of variation in the dependent variable captured by the model, representing a similar issue with practical significance as in 2018.

Chapter 6

Discussion

Implications

Since this paper conceptualized the answer categories as categorical, rather than perfectly ordinal, it is worth noting the different predictors of the status quo answer and the spending cuts answer. Whereas gender (identifying as a man) and increased access to natural spaces induced support for maintaining the same environmental spending, lowered trust in science corresponded with a preference for decreasing environmental spending. How should these two possible answers be interpreted?

If the status quo funding preference can be thought of as environmental apathy or disinterest, then differences by gender can be understood as differences in activism or salience. Men and respondents who can readily access nature (in the 2018 model) are shown here to be less responsive to environmental issues either way, instead choosing a neutral course. The construction of public natural spaces may promote a sense of contentment with nature and acceptance of the current ecological reality. The same is true for male socialization. The more radical approaches to ecological problems might arise from those who have been denied access to natural environments, an inversion of the expected relationship. Respondent trust in science, being predictive of a preference for policy cuts, is here conceptualized as a more oppositional preference for anti-environmental policy change.

The status quo funding preference could instead measure an ideological position against policy change, representing a respondents' moderation and desire to maintain current policy.

Men and those who easily access natural spaces are not necessarily disinterested in environmental issues or opposed to environmental policy, but are motivated to resist policy change in either direction. In the future, assessing respondent ideology more comprehensively would help explain these ideological commitments. Again, those respondents who distrust science are not merely disinterested in climate problems, but are actively selecting an anti-environment position regardless of their ideological stance on policy reform.

Limitations

The central challenge for this paper is the limited explanatory power of the models employed. McFadden's pseudo R-square for the 2018 model was 0.094, with a score of .125 for the 2021 model. As an estimate of variation in the response explained, this indicates only a weak-to-moderate fit (0.20-0.40 representing a far superior fit). For this reason, the factors included only explain some of the variation in respondent policy preference, while much of the variation is either individual or otherwise unexplained by the model. While certain factors included do seem to be statistically significant, the model overall has limited practical significance. The environmental policy choices of respondents require more rigorous study than the GSS allows.

The lack of evidence that drawing benefits from natural spaces has any meaningful role in determining policy preference is noteworthy. If drawing benefits from natural spaces has no clear effect on policy preferences, the intuitive connection between the natural world and environmental politics demands further scrutiny. That the model overall has limited explanatory power means that even those factors found to be significant (age, access, gender, and trust in

science) cannot fully account for environmental spending choices. Public opinion on environmental issues requires further study to illuminate the sources of policy preferences and beliefs about the environment

Another challenge for this analysis is the limited variation in the answers provided by respondents. While ecologically-minded groups will find it encouraging that the majority of survey respondents preferred raising environmental spending, the low variation in the dependent variable limits what conclusions can be drawn. If more than two-thirds of respondents in both 2018 and 2021 report a preference for increasing funding, it can be challenging to determine how this consensus arose. This analysis can only highlight a few of the factors that appear to diminish support for pro-environment policies in the relatively small sample that was surveyed. For the 2018 survey, there was also general consensus on the two indexes, with respondents scoring high in their access to nature and their perception of benefits. A much larger sample, alongside some improved measures of respondent ideology, is needed to better identify what explains the variation in respondent policy preference.

A similar problem arises when examining each index individually. Overall, respondents reported fairly easy access to nature and were optimistic in their assessment of the possible benefits that natural environments can provide. The lack of respondents who reported major difficulties accessing nature or felt that nature offered very little complicates the study of public attitudes. More tailored surveys of those sections of the public who are dissatisfied with how natural spaces have been managed would be valuable in determining the role natural spaces can play in public life. After all, the GSS only asked this regimen of nature-related questions in its 2018 survey. As public opinion on environmental questions changes, it will be a challenge for scholars to explain these trends. Although the 2021 survey did capture a selection of these

concepts, continued replication of the 2018 version would be valuable in understanding shifts in public sentiment.

Finally, testing multicollinearity reveals that some factors displayed a concerning degree of collinearity, in particular age and educational attainment (Eigenvalues of 0.015 and 0.005, respectively). It is likely that age is the true source of the explanatory power of educational attainment. It is possible that both models may suffer from over-fitting due to the inclusion of these two factors. In future, this paper would argue for excluding educational attainment, particularly when age and trust in science are incorporated into the model. The imprecise nature of the GSS questions related to natural experiences and the collinearities observed in the demographic factors is a significant limitation when modeling this kind of public opinion survey data.

Chapter 7

Conclusion

The only statistically significant finding related to the key factors of access to nature and drawing benefits from nature came from the 2018 survey. For this survey year, a higher score on the index of access to nature did increase the relative odds that a respondent selected status quo funding choice. This may suggest that public natural spaces promote the ecological status quo. However, it was only for this specific answer category in 2018 that any evidence of natural experiences as significant predictors of policy preference was found. For this reason, this paper cannot reject the null hypotheses. There is little to no evidence that experiences with natural environments, as captured by the GSS, meaningfully shape respondents' preference for environmental spending. Given the limited explanatory power of the two models and the low variation in relevant variables, any conclusions about the environmental attitudes expressed by GSS respondents should be approached cautiously.

Incorporating other factors besides natural experiences did yield noteworthy results. Age, gender, and trust in science were all predictive of policy preferences in at least one instance for each survey year. Older respondents, respondents who distrusted science, and respondents who identified as men were less overall less likely to prefer an increase in spending to protect the environment. While these models do not perfectly explain preferences, these results can help in generating new hypotheses. Few conclusions can be drawn about the role of nature from this paper, but it is beneficial to confirm previous findings from the public opinion literature.

The VBN theory still offers a useful framework for scholars, as it can explain pro-environmental behavior and connect environmental values with policy beliefs and social norms. This study did not find experiences with nature to be especially relevant in this framework, but

other social and political factors continue to be relevant in the formation and expression of environmental values. Given that the GSS only offered its full complement of questions on nature in a single year, there is ample opportunity for further research.

Climate activists and environmental groups should not be disheartened by the minimal role that natural experiences play. In examining GSS results, it is clear that many respondents are interested in spending more to protect the environment, even if this preference is not easily explained. Further, climate movements should be encouraged by the literature, which suggests that public opinion does matter when addressing environmental problems. Ecological problems pose a tremendous risk to the planet, but there is still a chance for public action to help implement sound environmental policy.

Future Research

While there is still potential in democratic contexts, this paper proposes several topics for future research. The role of public trust in science in shaping policy preferences is the most critical. For both survey years, trust in science was found to significantly predict environmental spending preferences. It is not clear if this represents a misunderstanding of climate science or ideological anti-intellectualism. Regardless, the public's approach to climate science and how this shapes policy deserves additional study. Gendered differences have been looked at extensively in the public opinion literature, but continue to show up in examinations of environmental preferences. Bridging this gender divide, along with the divide between respondents of varying ages, will be crucial in developing an ecological future.

Another area of interest is the effect of unique natural experiences on public opinion. The role of natural disasters in elevating concern over the environment has been discussed by scholars, often with a focus on climate activism on social media networks. While everyday experiences with nature have not been found to shape policy preferences, natural disasters and other distinct natural experiences should be considered in future scholarship. As the climate deteriorates and environmental problems remain a policy concern, how the public processes the natural world and responds to ecological issues should be a priority for public opinion research.

Appendix A

SPSS Code Appendix

        *After loading in the 2018 GSS dataset, available online in whole or in parts, first recode the variables of interest.

        *Recode NATACCESS, such that larger value corresponds with easier access to natural environments.

```
FREQUENCIES NATACCESS.
RECODE NATACCESS (1=4)(2=3)(3=2)(4=1) INTO NATACC2.
CROSSTABS
 /TABLES = NATACCESS BY NATACC2.
```

        *Recode NATENVR, again so that larger = more favorable view of spending on environmental protection.

```
FREQUENCIES NATENVIR.
RECODE NATENVIR (1=3)(2=2)(3=1) INTO NATSPEND.
CROSSTABS
   /TABLEs = NATENVIR BY NATSPEND.
```

        *Additional variables: NATTIMEOK, NATRELAX.

```
FREQUENCIES NATTIMEOK.
```

*If respondent spends adequate time in nature.

```
FREQUENCIES NATRELAX.
```

*If respondent finds natural settings relaxing.

        *Recode.

```
RECODE NATACCESS (1=2)(2=2)(3=1)(4=1) INTO NATACCBIN.

RECODE NATTIMEOK(1=4)(2=3)(3=2)(4=1) INTO NATTIME2.
RECODE NATRELAX (1=4)(2=3)(3=2)(4=1) INTO NATRELAX2.
RECODE NATVIEWS(1=4)(2=3)(3=2)(4=1) INTO NATVIEWS2.
RECODE NATSAT(1=4)(2=3)(3=2)(4=1) INTO NATSAT2.
RECODE NATSAT(1=2)(2=2)(3=1)(4=1) INTO NATSATBIN.
RECODE NATMEET(1=4)(2=3)(3=2)(4=1) INTO NATMEET2.
RECODE NATACTIVE(1=4)(2=3)(3=2)(4=1) INTO NATACTIVE2.

RECODE CONSCI (1=2)(2=1)(3=1) INTO SCITRUST.
```

        *Compile index of access.

```
COMPUTE ACCESSINDEX=NATACC2 + NATTIME2 + NATSAT2 + NATVIEWS2.
```

        *Compile index of benefits.

```
COMPUTE ENJOYINDEX=NATRELAX2 + NATMEET2 + NATACTIVE2 + NATLACK.

FREQUENCIES ACCESSINDEX.
FREQUENCIES ENJOYINDEX.
```

RECODE SEX (1=1)(2=0)(3=0)(4=0) INTO WOMAN.
*Measures if respondent is a woman, 1 = male, 0 = female.

*Occupation check.
RECODE OCC10 (1420, 1600, 1900, 3830, 4210, 4250, 6005, 6010, 6020, 6040, 6050, 6100, 6110, 6120, 6130, 6820, 7810 = 1)(ELSE = 0) INTO NATOCC.
FREQUENCIES NATOCC.

*Run Multinomial Regression.
NOMREG NATSPEND (BASE=LAST ORDER=ASCENDING) BY WOMAN WITH ENJOYINDEX ACCESSINDEX SCITRUST AGE DEGREE
   /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
   /MODEL
   /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
   /INTERCEPT=INCLUDE
   /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.

*2021 Recode.
RECODE NATENVIR (1=3)(2=2)(3=1) INTO NATSPEND.
RECODE CONSCI (1=2)(2=1)(3=1) INTO SCITRUST.
RECODE SEX (1=1)(2=0)(3=0)(4=0) INTO WOMAN.

*Occupation check.
RECODE OCC10 (1420, 1600, 1900, 3830, 4210, 4250, 6005, 6010, 6020, 6040, 6050, 6100, 6110, 6120, 6130, 6820, 7810 = 1)(ELSE = 0) INTO NATOCC.
FREQUENCIES NATOCC.

*Enjoy recode.
RECODE enjoynat (5=5)(4=4)(3=3)(2=2)(1=1) INTO NATENJ.
*Access recode.
RECODE activnat (1=5)(2=4)(3=3)(4=2)(5=1) INTO NATOUT.

*Run Regression.
*Enjoy recode.
RECODE enjoynat (5=5)(4=4)(3=3)(2=2)(1=1) INTO NATENJ.
*Access recode.
RECODE activnat (1=5)(2=4)(3=3)(4=2)(5=1) INTO NATOUT.
NOMREG NATSPEND (BASE=LAST ORDER=ASCENDING) BY WOMAN WITH NATENJ NATOUT SCITRUST degree age
   /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001)
    SINGULAR(0.00000001)
   /MODEL
   /STEPWISE=PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR)
   /INTERCEPT=INCLUDE
   /PRINT=PARAMETER SUMMARY LRT CPS STEP MFI.

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ACADEMIC VITA

Caden Buxton

cqb5706@psu.edu

EDUCATION

The Pennsylvania State University University Park, PA *College of the Liberal Arts Class of 2022* Bachelor of Science in Political Science

Bachelor of Arts in Sociology

FELLOWSHIPS AND HONORS

Schreyer Honors Scholar *August 2018-present*
- Rigorous Honors Program at the Pennsylvania State University during which students must maintain a 3.40 GPA, complete an
    Honors Thesis, and complete at least 23 credits of Honors coursework
- Honors Thesis: The Natural World and Environmental Public Opinion in America

Sleep Health Journal *2022-present*
- Awaiting publication of an editorial to be published in a future journal edition

Dean's List *August 2018-present*

LEADERSHIP EXPERIENCE

Penn State United Nations Campus Advocates **University Park, PA**
Vice President for Finances *2019-2020*
- Charged with managing club finances for all activities and fundraising programs

The GLOBE Honors Living Community **University Park, PA**
Communications Director *2019-2020*
- Managed organization events and coordinated with all members

Penn State International Affairs and Debate Association **University Park, PA**
Crisis Director, Pennsylvania United Nations Conferences XIII and XIV *2019-2020*
- Oversaw research and implementation of two committees offered at collegiate conferences

VOLUNTEER EXPERIENCES

Centre Elite Gymnastics Special Olympics Program **State College, PA**
Volunteer Coach *2017-2019*
- Assisted Special Olympics athletes in physical and personal development

Hawk Valley Homeowners' Corporation **Ferguson, PA**
Secretary *2017-present*
- Maintains all corporation records and bylaws, organizes and records meetings