

Examining the Correlates of Environmental Concern

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This paper examines the correlations between several different social factors and environmental concern. I use the 2014 General Social Survey data set to test multiple hypotheses from modern Environmental Sociologists. My independent variables are Socio-economic status, Political Affiliation, Age, and Sex. The dependent variable is Environmental Concern as evidenced by interest in environmental issues, and willingness to spend taxpayer dollars to protect the environment. The study uses Kent Van Lier and Riley Dunlap's *The Social Basis of Environmental Concern* as a foundation and starting point. Dunlap and Van Lier compiled existing theories about the "social bases of concern for environmental quality" (Van Lier et al. 1980). Their objective was to "take stock of existing knowledge and determine more precisely what is known about the correlates of environmental concern." They compiled quantitative data, and paired it with social studies of environmental concern from various researchers with the intention of defining the theoretical paradigm of the day. This study will compare their findings with modern GSS data to determine if current evidence matches the trends defined by Van Lier and Dunlap. Understanding the relation between social factors and environmental awareness is key to developing an environmentally minded public in the 21st century. It is important to consistently investigate theoretical paradigms under the light of new data so that hypotheses can be refined and improved.

In *The Social Basis of Environmental Concern* five general hypotheses were studied to determine what contributed to environmental awareness: age, social class, residence, political affiliation, and sex. This study will compare the findings in each of these five categories to

modern GSS data to determine if the descriptive statistics involved have remained the same or changed over the last 36 years.

Literature Review

The study of environmental sociology is a new and rapidly growing discipline. It emerged over the last few decades when “many specialists in environmental sociology... discovered that an aspect of the environment which we thought had a real or potential significance for human life was simply not dealt with in any systematic way by then-current sociological knowledge and research” (Stalker 2001). Finding the sociological understanding of humans’ place in their environment lacking, researchers across the country slowly began to piece together a theoretical framework by which to describe our interaction with the environment. Throughout the 1960’s and-70’s sociologists from many disciplines began to write about environmental issues through a sociological lens. In 1979 Riley Dunlap and William Catton published “Environmental Sociology: A Framework for Analysis” in order to describe the emergence of the field and qualify it as a new specialization and area of inquiry. In 1980 Dunlap and Kent D. Van Liere published “The Social Basis for Environmental Concern: A Review of Hypotheses, Explanations, and Empirical Evidence” in order to compile the existing understanding of the correlates of environmental concern (Van Lier et al. 1980). In “The Social Basis” Dunlap and Van Liere outline five general hypotheses that were being pursued by researchers at the time. They spent time looking at how age, socio-economic status, residence, political affiliation, and sex affect individuals’ level of concern for environmental issues.

In the research compiled by Dunlap and Van Lier “Environmental Concern” is conceptualized in a number of ways. The studies examined utilized a number of different

indicators for Environmental Concern, including awareness of environmental problems, support for environmental reforms, resource conservation, recycling and others. According to Dunlap and Van Liere common themes in the indicators used were “perceiving environmental problems as serious, supporting efforts by government to protect environmental quality, [and] engaging in behaviors aimed at improving environmental quality” (Van Liere et al. 1980). More recent studies have used such measures as: Positive Environmental Attitudes, and Willingness to Pay to Protect the Environment (Duroy 2005). In *Environmental Concern: Conceptual and Measurement Issues* Dunlap and Robert E. Jones define environmental concern as “the degree to which people are aware of problems regarding the environment and support efforts to solve them and/or indicate a willingness to contribute personally to their solution” (2002). They compile the extensive literature on the conceptualization of Environmental Concern for the chapter in The Handbook of Environmental Sociology in an attempt to consolidate the “incredibly diverse set of measures or operational definitions of environmental concern” (2002).

In the 1980 article Dunlap and Van Liere outline what they call “The Age Hypothesis” of environmental concern. Simply put the hypothesis is that young people are more concerned with the environment than older people. The majority of studies at the time found that age and environmental concern are negatively correlated. The two explanations for the age hypothesis presented by Dunlap and Van Liere are “age-group differences” and “cohort differences” (1980). Age-group differences are differences in the aging process that can be outgrown. Specifically they site arguments that younger people are less integrated into the dominant socio-economic system than their older counterparts, and are therefore more receptive to the kinds of sweeping changes to the status quo necessary to protect the environment (1980). Cohort differences arise from “important historical events occurring at the crucial adolescent and young adulthood phase

of the life cycle” (1980). In this view, the 18- to 30- year olds of the late 1970s’ high levels of environmental concern was an outgrowth of their involvement in civil rights and anti-Vietnam activism. If the age-group hypothesis has more validity, current GSS data should show that younger people are still more concerned with environmental issues than older people, because environmental concern would recede as the group ages. However; if the cohort hypothesis is stronger we can expect the older people of today to retain the high levels of concern for the environment that they had in the 1970’s, when they were 18 to 30.

Another correlate of environmental concern studied by Dunlap and Van Liere is socio-economic status. SES is measured in this instance as “education, income, and occupational prestige” (1980). In most studies at the time there was a well-established positive correlation between SES and environmental concern. The most accepted explanation for the correlation is based on Maslow’s Hierarchy of Needs (1970). The assumption is that concern for the environment is a luxury that can be afforded only after more basic needs have been met. However; there is disagreement among more recent studies of environmental concern. While US data has shown a trend of more environmental concern among wealthier residents, international data has shown high levels of concern among citizens of developing nations (Duroy 2005). Because of this discrepancy, Duroy claims that economic factors are not the strongest determinant of environmental concern, but that “demographic, pathological, and educational variables” play a larger role (2005).

There has been contention among researchers about the role the sex plays in environmental concern. Early work in environmental concern, such as that which was compiled by Van Liere and Dunlap, found little evidence of a gendered difference in measured concern (1980). However; more recent research consistently finds that women are modestly more

concerned with protecting the environment than are men (McCright 2010). McCright compiled a number of hypothesis but found little to no support for much of the existing theoretical explanations for the gendered difference in concern. In a later paper (2015) McCright and Xaio examined the relationship between institutional trust and environmental concern, and found little empirical support for that hypothesis as well. However, even when controlling for other variables women still express slightly more significant concern for environmental issues, so the research is incomplete.

Research consistently shows that urban residents express more environmental concern than rural residents. However Dunlap and Van Liere find a number of inconsistencies in the pattern and suggest that residence most strongly correlates with environmental concern when local environmental issues are the focus, rather than concern for the environment in general. Residence has largely been dismissed as a spurious variable relating to socio-economic status or political affiliation (1980). The 2014 GSS does not ask respondents where they reside, so for much of this paper it is disregarded.

The strongest variable relating to environmental concern is political affiliation (Van Liere et al 1980, McCright et al 2014). However; throughout early studies of environmental concern this was not the case. Environmental issues were considered largely bi-partisan, especially due to the groundbreaking environmental legislation passed during the Nixon administration (2014). However, by the late 1970s divide had emerged between liberals/Democrats and conservatives/Republicans regarding concern for the environment. This divide shrank and grew through the 1980s, but from 1990 onward the conservative movement has become significantly more hostile towards environmental reform. This trend has continued through to the present day (2014). McCright and Dunlap argue that this fits with “party sorting theory,” wherein activists

and party leaders petition political elites to greater degrees of ideological purity, which then trickles down to party loyalists. As the parties become more polarized, they sort individuals along stricter ideological lines (2014). McCright and Dunlap find extensive empirical support for a difference in not only the concern of individuals, but also their environmentally relevant behaviors (2014). Additionally they find that political affiliation is so strongly tied to environmental concern that it has a mediating effect on other variables generally tied to concern for the environment. For example the effect of increased education on environmental concern is positive for liberals but negative for conservatives (2014). In my research I expect political affiliation to be the strongest correlate to environmental concern. This poses significant challenges in the area of environmental conservation because it frames environmental concern as a pathological or ideological divide, rather than a demographic issue.

For this paper I will use GSS 2014 data to determine how the demographic variables effecting environmental concern have changed or stayed the same since they were investigated by Van Liere and Dunlap almost 40 years ago. I expect to find support for the “age group differences” hypothesis in regards to age, namely that today’s youth are more engaged with environmental issues than their older counterparts, despite the fact that today’s 50- and 60- year olds were heavily involved in environmental issues in their youth. I expect to find a small but significant difference in environmental concern among men and women, although it may be less significant when other variables are taken into account. While data may show some relationship between residence and environmental concern, my expectation is that it will be less than significant. The two strongest correlations I expect to encounter are socio-economic status and political affiliation. I will examine how the two relate to one another as well as to environmental

concern to determine the degree to which affluence affects the environmental attitudes of liberals and conservatives.

Methods

The data for this study comes from the 2014 edition of the General Social Survey. The GSS is a nationally representative study of individuals aged 18 to 98. It is administered by the National Opinions Research Center at the University of Chicago. Because the survey is nationally representative and is administered every two years it is well suited for keeping track of changing attitudes regarding Environmental Concern. The survey was administered to a total of 2538 people, with the final case number for each variable changing due to missing cases.

My dependent variable is Environmental Concern. I use two GSS questions as indicators for environmental concern: “How interested are you in environmental issues?” and “Are we spending too much, too little, or about the right amount on protecting the environment?” Both questions use ordinal level responses, the first being “very interested, moderately interested, not at all interested;” and the second being labeled “not enough, about right, too much.” For the first question there were 1238 valid cases, and 1300 missing cases. For the second there were 1244 valid cases and 1294 missing cases.

My independent variables are Socio-economic status, Age, Sex, and Political Affiliation. Socio-economic status is measured by Income, and Educational Attainment. I coded Income as an ordinal level variable with \$0-\$19999 labeled “Lower Class,” \$20000-\$89999 labeled “Middle Class,” and \$90000+ labeled “Upper Class.” For educational attainment I used a GSS variable labeled “degree” which is an ordinal level variable ranging from “Less Than High

School” to “Graduate School.” For income there were 2314 valid cases with 224 missing. For education there were 2538 responses with no missing cases.

In the GSS Age is measured as an interval level variable ranging from 18 to 98. I recoded Age into AgeOrd, a categorical variable at the ordinal level. 18-to-35-years is labeled “youth,” 36-55 is labeled “middle age,” 56 and older is labeled “senior.” I had intended to add a fourth category for 85 years and above, but there were not enough cases to test accurately. For the Age variable there were 2529 valid responses and 9 missing cases.

Sex is a nominal level variable labeled “male” and “female.” There were 2538 responses with none missing.

Political Affiliation is measured by the subject’s self-identification as either a liberal or conservative, and as identifying with either the Democratic or Republican parties. The answers range from “extremely liberal/strong Democrat” to “extremely conservative/strong Republican.” For the party identity variable there were 2512 valid cases and 26 missing. For the political affiliation variable there 2449 valid cases and 89 missing.

Table 1 contains descriptions of my variables as well as their means, standard deviations, and the coding used.

Table 1

Description	Coding	Median Value
Interested In Env. Issues	1=“very interested” 2=“Moderately interested” 3= “Not at all Interested”	2
Are we spending... Protecting the Env.	1=“too little” 2=“about right” 3= “too much”	1
Age	1=“youth” 2=“middle age” 3=“senior”	2

	4="elder"	
Sex	1= "male" 2= "female"	N/A
Think of Self as Liberal or Conservative	1="extremely liberal" 2="liberal" 3="slightly liberal" 4="moderate" 5="slightly conservative" 6="conservative" 7="extremely conservative"	4
Political Party Affiliation	1= "Strong Dem." 2= "Not Str. Dem." 3= "Ind. Near Dem." 4= "Independent" 5= "Ind. Near Rep." 6= "Strong Rep."	3
Income	1= "Lower Class" 2= "Middle Class" 3= "Upper Class"	2

Because all of the variables are categorical in nature I will use the Chi-Square Test for Independence to test the correlation to Environmental Concern. I will use GAMMA to test the strength and direction of the association if it exists. For each demographic variable I will run two tests: the first will test the variable's relationship to Interest in Environmental Issues, the other will test the variable's relationship to willingness to spend taxpayer money to protect the environment. Interest and willingness to spend money are shown to be strongly correlated, so if the relationships between the individual independent variables and Environmental Concern are not spurious the results of the two tests should be similar.

Analysis

For each of my independent variables I ran two chi-square tests of independence: one for Interest in Environmental Issues and one for Willingness to Spend Government Money on Protecting and Improving the Environment. All of the tests are interpreted at a 5% chance of random error. The results are compiled in tables 2 and 3 below:

Table 2: Independent Variables * Interest in Environmental Issues

Variable	N	χ^2	<i>df</i>	p-value	GAMMA
Age	1234	4.510	4	.341	-.055
Sex	1238	.441	2	.802	-.017
Education	1238	29.973	8	.000	-.125
Income	1122	5.515	4	.238	-.032
Party	1206	54.479	12	.000	.220
Political Ideology	1193	57.668	12	.000	.408

Table 3: Independent Variable * Improving/Protecting Environment

Variable	N	χ^2	<i>df</i>	p-value	GAMMA
Age	1239	24.097	4	.000	.188
Sex	1244	2.753	2	.253	.000
Education	1244	14.590	8	.068	.010
Income	1139	12.101	4	.017	.016

Party	1198	134.921	12	.000	.296
Political Ideology	1200	135.566	12	.000	.408

A few interesting trends emerge regarding the various hypotheses proposed in *The Social Basis for Environmental Concern*. The first notable observation is that in terms of *Interest* the Age hypothesis does not seem to hold up. With a Chi-Square value of 4.5 and a P value of .341 we accept the null hypothesis: there is no relation between age and a person's interest in environmental issues. However; there does appear to be a relationship between age and a person's willingness to spend tax dollars on improving the environment. The Chi-Square value for the second test is 24.097, and the P value is .000. GAMMA tells us that the relationship is positive, meaning that an older individual is more likely to express an opinion that we are spending too much and the right amount to protect the environment, while the younger respondents are more likely to believe we are not spending enough. The fact that the two test disagree with one another shows that there is more to the relationship than we can determine here. More research will be necessary to understand the relationship between age and environmental attitudes, particularly as it relates to the spending of government money.

Interestingly enough according to these parameters there appears to be no relationship between sex and environmental concern at all. With a chi-square value of .441 and a P value of .802 neither sex would seem to be more interested in environmental issues, we accept the null hypothesis. We do the same for Willingness to Spend Government Money, with a chi-square of 2.753 and a P value of .253. The link between Sex and Environmental concern is relatively well

established in the literature (McCright 2010). More research, like that being done by McCright and Xaio, is necessary.

This study looks at Education and Household Income as indicators for Socio-Economic Status. For Interest in Environmental Issues, Income does not appear to be correlated, but Education does. The chi-square value for Income is 5.515, and the P value is .238. With 4 degrees of freedom this means there is no significant relationship between income and interest in environmental issues, we accept the null hypothesis. For Education the chi-square value is 29.973, and the P value is .000. With 8 degrees of freedom this indicates that Education is highly correlated with interest in Environmental Issues. The GAMMA score of -.125 indicates that those with the least education were most likely to indicate they were “not at all interested” in environmental issues. However; this relationship reverses when looking at Willingness to Spend Government Money. For Income, the chi-square value is 12.101 and the P value is .017. At 4 degrees of freedom this implies that there is a relationship between income, and a willingness to commit tax dollars to protect the environment. The GAMMA score of .016 indicates a very weak, positive relationship. Education does not appear to correlate at a 5% chance for error. These relationships are interesting and require more research. Why does the effect of education diminish when considering willingness to commit tax dollars? Why is income’s effect on interest negligible, but its effect on willingness to spend government money significant?

As expected, the strongest correlates of environmental concern are Party Identity and Political Ideology. This relationship appears for both Interest in Environmental Issues, and Willingness to Commit Tax Dollars to Protect the Environment. For Party Identity and Interest the relationship is moderately positive, with those who consider themselves Republicans being more likely to express little interest in environmental issues. The chi-square value is 59.479, and

the P value is .000. This relationship holds up when looking at willingness to commit tax dollars. The chi-square value is 134.921, and the P value is .000. The GAMMA of .296 indicates a moderately strong, positive relationship in which those who identify as Republican are more likely to believe we are spending “Too Much” to protect the Environment. Political Ideology shows a similar trend. For Interest the chi-square is 57.668, and the P value is .000. For Willingness the chi-square is 135.566 and the P value is .000. The GAMMA for each is .408, implying an extremely strong positive relationship. This holds with existing theory, that a person’s political affiliation will be the strongest determinant factor in their level of environmental concern (McCright et al. 2014). Because conservatives and liberals build their worldviews from different moral foundations (Graham et al 2009) this poses a serious challenge as we attempt to build a consensus around the need for environmental action. More research is necessary in order to understand the nature of the relationship, and how it affects public policy.

Conclusion

Testing the relationships predicted by *The Social Basis for Environmental Concern* yielded interesting results. The Age and Sex hypotheses remain ambiguous. Though there did appear to be a relationship between Age and Willingness to Commit Tax Dollars to Protect the Environment, the correlation is tenuous and could be attributed to other demographic variables. There was no observed relationship between Age and Interest in Environmental Issues. Sex appears to play no role in environmental concern according to the parameters of this study. Other studies have found that there is a moderate link between the two variables, so this may be related

to the particular parameters of this study or some quirk of the GSS data. More research is recommended. The Socio-Economic factor was equally as unyielding. There appears to be a strong relationship between Education and Interest in Environmental Issues, but no relationship between Education and Willingness to Spend Government Money. This is reversed for Income, where there is no relationship to Interest, but a strong correlation to Willingness to Spend Government Money. This study suggests more research to better understand this dynamic. I found that the strongest correlating factor to Environmental Concern to be Political Affiliation. This fits with findings of other scholars in the field and is the focus of much current research. More indicators of Environmental Concern could be included in future versions of the GSS, to allow for more nuanced research.

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