

CONCERN FOR THE ENVIRONMENT: A CROSS-NATIONAL PERSPECTIVE

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ABSTRACT

Data from the International Social Survey Program indicate considerable variation in the desire of respondents for increased spending on the environment in Australia, Austria, Great Britain, the United States, and West Germany. This paper explores this variation with the following objectives: (1) to determine the extent to which the social bases of environmental concern are consistent across nations; (2) to determine how the issue of the environment has been politicized in the five industrialized nations, focusing on the association of Old Leftist concerns and environmental concern; and (3) to determine the extent to which the social bases of environmental concern can explain the cross-national variation. The study uses a regression analysis, testing variables representing the social bases of environmental concern from past research in the United States, a scale representing commitment to the platform of the Old Left, and dummy variables for each country. The results show that the social bases of environmental concern are the same in the five countries studied, including a consistent positive association of Old Leftism with environmental concern. However, substantial variation between countries in the overall level of concern remains. Potential sources of the remaining variation are examined.

While environmental degradation is almost certainly one of the inevitable opportunity costs of industrialization, not every industrialized nation shows the same concern for this cost. Survey evidence from five industrialized nations indicates vastly differing levels of public concern for the environment. Specifically, survey data supplied by the International Social Survey Program (ISSP) reveal five countries (Austria, Australia, Britain, USA, and West Germany) that vary greatly in the concern shown by the respondents in answering the question: 'Would you like to see more or less government spending for the environment?' Table 1 shows that more than a third of Germans and Austrians feel that much more should be spent on the environment, while fewer than half as many Americans, Australians, and Britons feel the same way. Combining the 'Spend much more' and the 'Spend more' responses, we see that 83 percent and 73 percent of German and Austrian respondents favor more spending, respectively, followed by Americans (44 percent), Britons (37 percent), and Australians

TABLE 1 Concern for the environment

Question: 'Would you like to see more or less government spending for the environment?'

<i>N</i> =	<i>Australia</i> (1528)	<i>Austria</i> (987)	<i>Great Britain</i> (1530) <i>percent</i>	<i>West Germany</i> (1048)	<i>USA</i> (677)
Much more	8	34	6	43	10
More	24	39	31	39	33
The same	51	25	58	16	43
Less	12	2	5	1	11
Much less	5	0.4	1	0.3	2
Total	100	100	100	100	100

Source: ISSP (1985)

(32 percent). National differences are extremely wide indeed: fully fifty percentage points separate super-concerned Germany and relatively unconcerned Australia.

The goal of this paper is to analyze public opinion data for an understanding of the cross-national variations in environmental concern. The focus is on the socio-demographic correlates, or social bases, of concern for the environment in each country. One objective will be to determine to which extent the social bases are consistent cross-nationally. While there has been much work in the United States exploring the social bases of concern for the environment (Van Liere and Dunlap, 1980) and some work with a cross-national perspective (e.g. Rohrschneider, 1988), to my knowledge there is no work exploring the issue of variation cross-nationally. Following Inglehart's (1977, 1990) theory that the industrialization process has produced a value shift across the West, linking in particular youth and higher education to 'postmaterialist' values (such as the environment), I hypothesize that the social bases of environmental concern will be the same across the industrialized countries in the study.

In addition, as the environment has become a political issue, it is essential to explore how, cross-nationally, it has been politicized, and thus how social/political values are correlated with environmental concern. The 'environment' is an issue which resists a clear left-right ideological placement, and finds support as a movement, as do the peace and anti-nuclear movements, from a broad base of the population (on this latter point, see, for example, Kriesi, 1989). The ecology-minded Green parties throughout Western Europe often began in the late 1970s and early 1980s with a power struggle between green liberals and green conservatives, though the parties have settled into platforms combining environmental concern with strong egalitarian, 'Old Left' concerns (Frankland, 1989). This Left politicization of the environment, however, has not been even,

and for this reason I will explore cross-national variation in the correlation of Old Left, redistributive concerns with concern for the environment.

Finally, I examine the extent to which the social bases of environmental concern can explain the cross-national variations. Conceivably, the cross-national variations outlined above are only the results of bias in the survey samples. More promising is the possibility that a respondent's country of origin may itself be a predictor of concern; if so, some exploration of why this would be the case is in order. At any rate, the social bases of concern must be controlled for before any meaningful comparisons can be made. The third question for the study, then, is: 'To what extent can public opinion data explain the cross-national variations in concern for the environment?'

THE SOCIAL BASES OF ENVIRONMENTAL CONCERN

Research in the United States has explored the question of which social groups tend to be most likely to exhibit concern for the environment. Van Liere and Dunlap (1980) have written a review of this work which examined the influence of an assortment of socio-demographic variables on environmental concern. The studies reviewed were sample surveys, which examined bivariate associations between socio-demographic variables and indicators of environmental concern. These indicators included, for example, the perception of environmental problems as serious, support of government efforts to protect the environment, and reported behavior aimed at improving the quality of the environment. Van Liere and Dunlap combined the results of several different studies in an effort to determine which variables were most consistently significant. They examined six variables, including age, income, education, residence, political orientation, and sex.

Van Liere and Dunlap's review of the literature on these correlates of concern sheds some light on their predictive ability in the American data. Age was negatively associated with environmental concern. Education had a positive association. The relationship between income and concern was ambiguous, yielding no clear connection. Generally, urban residents are more concerned about the environment; this is most pronounced on local issues. There was a weak association, at best, when party preference was used, but a stronger one with the variable of a left-right ideological continuum, with self-identified left-leaning respondents having a greater likelihood of indicating a concern for the environment. Finally, the relationship between sex and concern for the environment was marginal.¹

¹ More recent studies have found females to be more concerned about the environment than males, e.g. Blocker and Eckberg, 1989.

These patterns are generally consistent with expectations derived from Inglehart's theory of the rise of postmaterialist values. Inglehart (1977, 1990) has argued that the West has experienced a 'silent revolution' in political values, taking place because post-Second World War generations have grown up with relatively little material deprivation. Inglehart's theory rests on two main hypotheses. The first, the scarcity hypothesis, maintains that the priorities of individuals will place greatest subjective value on things in relatively short supply. The second, the socialization hypothesis, claims that a person's basic values reflect the conditions that existed during the person's pre-adult years. Together, they imply that the new 'postmaterialist' generations (those born after the Second World War) would be more likely to go beyond traditional material concerns (such as economic growth and social order) in their political demands, and press for wider democracy, a less intrusive state, more community, and less emphasis on economic and technical growth. Though the 'environment' was not originally included by Inglehart as a postmaterialist value, it has been consistently correlated with postmaterialism (e.g. Rohrschneider, 1988), and considered a postmaterialist value by most literature in this area. The main point here is that environmental values are thus hypothesized to be a response to a process common to all the countries in the present study—industrialization. I thus assume that similar persons in each country will be more likely to be environmentally concerned, particularly the young. Postmaterialism (often assumed to suggest the same constellation of values as the phrases 'New Left' and 'New Politics'—see Müller-Rommel, 1989) has also been tied to education. Bürklin (1985), for example, sees the young and well-educated as the 'core of the new politics' constituency. I thus expect education to be positively correlated with environmental concern on a cross-national basis.

LEFTISM AND CONCERN FOR THE ENVIRONMENT

While the values of postmaterialism suggest a Leftist orientation to environmental concern, this politicization of the environment issue has not always been clear cut. Inglehart (1990) has stressed that postmaterialist values are simply not clear left or right issues. Many of this century's early, environmental 'conservation' societies were bourgeois in character, and some of the European Green parties have had right-wing power struggles and constituents. For example, the early years of the West German Greens saw a struggle over the party's focus. Frankland (1989, p. 63) explains that 'Conservatives wanted to maintain a programmatic focus on environmental issues while leftists wanted a broad

program with radical policy proposals on a full range of domestic and foreign issues'. The Leftists won, and former Christian Democrat Herbert Gruhl led an exodus of eco-conservatives from the German Greens.

The rise of postmaterialism has brought about new political conflicts, involving 'groups defined on the basis of material interests—employer organizations as well as labor unions—though competing against each other, facing those holding nonmaterial interests in the environment, peace, and so forth' (Bürklin, 1985, p. 197). In Germany in the early 1980s, the Greens were able to gain votes, as the Social Democrats were 'poised indecisively between the younger middle-class postmaterialists and the unions and their workers looking for employment and economic growth, regardless of environmental consequences' (Schoonmaker, 1990, p. 160). Following this initial ambiguity, the German (Old and New) Left began to settle on a mutual embrace of the environmental issue, with the Social Democrats soon using the issue to win back Green voters (Braunthal, 1985), who, by 1984, were winning about 10 percent of the vote in major German elections (Kitschelt, 1985).

However, the potential for an ambiguous relationship of Old Leftism and environmental concern remains. For instance, Kreuzer (1990) argues that the Austrian greens are predominately a center, not left, party, and that the two green parties, Vereinte Grüne Österreichs (VGÖ) and Alternative Liste Österreichs (ALÖ), are catch-alls for disenchanting middle class voters. The ambiguity results from the fact that the VGÖ, unlike most of its Western European green counterparts in the mid-1980s, did not embrace Old Left redistributive measures, supporting instead traditional family structures, deregulation, and privatization (Haerpfner, 1989). In addition, using Eurobarometer data from 1986 for the Netherlands, Kriesi (1989) finds broader based support for the ecology movement than for any of the other post-materialist new social movements (peace, anti-nuclear, squatters, and women's movements). His data shows 35 percent of large employers, 43 percent of petit bourgeoisie, 75 percent of traditional professionals, 32 percent of skilled workers, and 29 percent of unskilled workers claiming to be 'ready to participate' in the ecology movement—numbers that do not suggest a clear Old Left orientation to the environment issue. Rohrschneider (1988), in a cross-national analysis of Belgium, Italy, France, United Kingdom, and Germany, found that not Leftist values but the (more politically ambiguous) perception of threats to the national environment was the strongest predictor of environmental concern. All of this research suggests the potential of the environment to be a value that cuts across traditional political cleavages, and thus possible variation in the correlation of traditional Leftism and concern for the environment. Thus, this research will analyze cross-nationally the relationship of the Old Left to the New Left, New Politics, postmaterialist issue of environmental concern.

EXAMINING THE CROSS-NATIONAL VARIATION

One basic goal of this study is to begin to answer this basic question: 'Why does public opinion show cross-national variation in concern for the environment?' Data from the individual countries cannot be meaningfully compared until possible sample biases are controlled. I will therefore determine whether or not the variations are in fact the result of sample biases. If not, and if, for example, simply being Austrian rather than British is a significant predictor of concern, we will be able to determine the strength and direction of the various country effects on concern for the environment, and begin to search for causes originating in the conditions and circumstances of the nations themselves.

The data for this study were made available by the International Social Survey Program (ISSP). Utilized here was the 1985 data set 'Role of Government'. In this year the ISSP included the five countries mentioned earlier (see Appendix).

Dependent variable A respondent's level of concern for the environment was measured by his or her answer to a question on whether or not the government should spend more on the environment. This question was part of a sequence of questions on government spending. The question read as follows:

Listed below are various areas of government spending. Please show whether you would like to see more or less government spending in each area. Remember that if you say 'much more', it might require a tax increase to pay for it.

More or less government spending for: The environment.

The answers were (re)coded 5—Spend much more, 4—Spend more, 3—Spend the same as now, 2—Spend less, and 1—Spend much less.²

Independent variables: Though the social bases of concern for the environment reviewed in the work by Van Liere and Dunlap have been given considerable attention in research focusing on the United States, they have not, to my knowledge, been tested extensively outside of the U.S.; therefore I will examine all of them. Thus, among the independent variables I include respondent's

² This variable has a generally normal shaped distribution with a minor skewing toward the middle. The reliability of the measure was checked by examining its association with a spending question pertaining to the environment on the 1985 General Social Survey, administered at the same time. This variable, worded slightly differently, read as follows: 'We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount. — Are we spending too much, too little, or about the right amount on the environment?' Here, answers were coded 1—Too little, 2—about right, and 3—Too much. A test of association between this variable and the ISSP question yields a gamma of .734, indicating that the ISSP question is indeed reliable.

family income (converted to U.S. dollars at 1985 exchange rates), sex (males = 0; females = 1), education (in years of schooling), age (in years), and general political orientation. Political orientation self-identified respondents along a continuum of political ranges, from Far Left (coded as 1) to Far Right (coded as 5).

I also sought to go beyond the demographic variables that have been used to account for concern for the environment in the past. To examine more specifically the politicization of environmental concern, I constructed a scale (termed OLDLEFT) to tap the intensity of a respondent's sympathy for traditional concerns of the Leftist parties. OLDLEFT is a Likert scale that sums responses to six survey questions. Three ask respondents for their attitudes, coded on a five point scale of support similar to the environment question, on different government responsibilities: 'financing of projects to create new jobs', providing 'a decent standard of living for the unemployed', and reducing 'income differences between rich and poor'. The other three are government spending questions, on health, old age pensions, and unemployment benefits, asked and coded in the same way as the environment question. Means were obtained for each country on each question and were assigned to missing cases. Reliability for the OLDLEFT scale varied from a low of Cronbach's alpha = .584 in Austria to .759 in the USA.

Regression analyses were run on a five-country data set controlling for age, gender, education, political orientation, the Old Left scale and dummy variables distinguishing between countries. A nested F-test was performed to determine whether or not the country differences were significant; another was performed to determine whether effects of socio-demographic variables varied by country.

Two final analyses were run to examine the validity of the main analysis. First, to determine whether a clean environment has the same basis of support as traditional Leftist progressivism, I ran a regression of the scale of preferences for the traditional Left platform on the socio-demographic variables. The last analysis examines sources of support for environmental spending relative to other spending concerns; this was accomplished with a regression analysis with a dependent variable called PRIORITY, obtained by subtracting a scale measuring general spending preferences (the mean of a respondent's answers to seven other government spending questions on the ISSP, on law enforcement, education, defense, culture and the arts, health, old age pensions, and unemployment benefits), from the original environmental spending variable. Means for each country on each variable were assigned to missing cases. The scale measuring traditional Left preferences was not included among the independent variables in this last analysis, as it contains some of the same spending questions used in the scales that serve as dependent variables there.

TABLE 2 Social bases of concern for the environment
—regression analysis

<i>Variable</i>	<i>B</i>	<i>SE</i>	<i>Beta</i>
Age	-.00654***	9.71E-4	-.108
Education	.0309***	.00521	.100
Political orientation	-.0691***	.0157	-.0705
Income	9.86E-7	1.16E-6	.0169
OLDLEFT	.0532***	.00394	.236
Gender (Female)	-.0454	.0295	-.0241
Australia	-1.018***	.0433	-.521
Austria	-.208***	.0498	-.0794
Great Britain	-1.057***	.0488	-.449
USA	-.837***	.0619	-.295
Constant	3.303***	.1410	

R² = .285

Source: ISSP (1985); N = 3,229

*p < .05

**p < .01

***p < .001

RESULTS

COUNTRY SIMILARITIES³

The first step was to determine which of the socio-demographic variables from Van Liere and Dunlap's review were related to environmental concern, and if these, as predicted, were the same in each country. The age variable had been negatively associated with concern in the past research based in the United States. This was confirmed in the pooled analysis (see Table 2).

To examine the relationships between social class and environmental concern, the effects of education and income were tested. Education was here found to be positively associated with support for environmental spending, as predicted by research based on the political culture of the New Politics and past research in the USA. Income had produced mixed associations with concern in the past. The income variable here was insignificant.⁴ In past research in the United States, more Left-leaning respondents indicated more concern; this relationship was confirmed cross-nationally. As predicted, there was a negative relationship

³ The conclusions discussed in this section are based on multivariate regression analyses and not bivariate regressions, as were the conclusions discussed by Van Liere and Dunlap mentioned earlier. However, conclusions similar to those of Van Liere and Dunlap but based on multivariate analyses have been put forth by Mohai and Twilight (1987). Results of regressions for these variables using individual datasets for each country are available from the author upon request.

⁴ Non-linear effects for income, as well as for age, were tested but were found to be insignificant. There is a non-linear effect with age on OLDLEFT.

between moving right on the political orientation continuum and indicating concern for the environment. Gender differences have not consistently been found to be correlated with concern for the environment in the USA; in the cross-national data, the gender variable is found to be insignificant. The newly introduced variable OLDLEFT measuring policy commitments was significant in the pooled analysis, showing a clear picture of the traditional Leftist politicization of the environment in Western political culture. OLDLEFT showed a strong positive association with concern for the environment.

In order to determine whether the effects of the variables were significantly different across countries, an F-test was performed which examined differences between slopes from individual country analyses and slopes from the respective pooled analysis. This test yielded an insignificant result, which implies that the variables are correlated in similar ways with environmental concern across nations. Common slopes can be imposed ($F = .446$, $p > .05$, $d.f. = 63, 3229$). The social bases of concern for the environment, therefore, are similar across these countries. In summary, younger, better educated, urban, left-leaning people are more likely to support increased spending on the environment in these five nations. And, in particular, the more committed a respondent is to the traditional platform of the Old Left, the more likely it is that he or she will support government spending on the environment.

COUNTRY DIFFERENCES

Next, it was necessary to examine the individual country effects in the pooled analyses. The introduction of dummy variables for country did indeed have a significant effect (nested F-test, $F = 192.3$, $p < .001$; R^2 change of 0.171). Controlling for the six social bases of concern variables still left rather striking unexplained country differences. This suggests strong country effects on environmental concern independent of the respondent characteristics identified in the survey. Being Austrian rather than German meant lower support for environmental spending scale 0.21 units (Table 2). The other three differences from Germany in Table 2 were even larger: the USA was 0.84 units lower, Australia was 1.02 units lower, and Britain 1.06 units lower.

EXAMINING ALTERNATIVE EXPLANATIONS

In order to discern whether a clean environment had the same support as the Old Left issues, I conducted a pooled analysis which had the Old Left scale as a dependent variable. This analysis (Table 3) suggests that a clean environment is not an issue that can be packaged together along with the traditional redistributive concerns of the Old Left; it is different in nature from the materialist

TABLE 3 Social bases of support for platform of traditional Left—regression analysis

<i>Variable</i>	<i>B</i>	<i>SE</i>	<i>Beta</i>
Age	.0132**	.00434	.0492
Education	-.148***	.0232	-.108
Political orientation	-.148***	.0660	-.108
Income	-4.71E-5***	5.11E-6	-.182
Gender (Female)	.185	.132	.0222
Australia	-1.15***	.193	-.132
Austria	-.381	.223	-.0329
Great Britain	2.05***	.216	.197
USA	-.786**	.277	-.0625
Constant	26.08***	.420	

R² = .269

Source: ISSP (1985); N = 3,229

*p < .05

**p < .01

***p < .001

concerns that are expressed in that scale. The social bases of concern for the environment are, then, different from the social bases of concern for the traditional platform of the Left.

For example, income becomes significant along with all variables except gender and Austria in the regression with scale indicating preferences for the platform of the traditional Left as the dependent variable. The correlation coefficient of age is also positive in the Old Left scale regression. Here, it indicates that older respondents are more likely to favor government policies associated with the Old Left. The variable for education has also changed directions, indicating that the more a respondent is educated, the less likely it is that the respondent will support the Old Left platform.

There are also important differences in the rankings of countries on the two measures—environmental spending and commitment to the Old Left program, with Britain showing considerable movement. A ranking of country effects on the Old Left scale would place Britain as the most concerned, followed by Germany, Austria, the USA and Australia, respectively. This is contrasted by the ordering on the environment, which places Germany as the most concerned, followed by Austria, USA, Britain, and Australia (without OLDLEFT in the equation).⁵ It appears that the social bases of desire for more environmental spending on the one hand, and Old Left policy preferences on the other, involve

⁵ In the environmental concern regression analysis without the Old Left scale in the equation, results are basically the same as those in Table 2. The major difference is a switch in the ranking of Britain and Australia.

TABLE 4 Social bases of priority given to the environment relative to other concerns—regression analysis

<i>Variable</i>	<i>B</i>	<i>SE</i>	<i>Beta</i>
Age	-.00694***	8.53E4	-.127
Education	.0258***	.00456	.0930
Political orientation	-.0646***	.0130	-.0731
Income	1.06E-6	1.005E-6	.0201
Gender (Female)	-.0928***	.0260	-.0546
Australia	-1.11***	.0379	-.628
Austria	-.136**	.0438	-.0578
Great Britain	-1.057***	.0424	-.499
USA	-.944***	.0544	-.368
Constant	1.246***	.0827	

$R^2 = .318$

Source: ISSP (1985); $N = 3,229$

* $p < .05$

** $p < .01$

*** $p < .001$

different social dynamics, which include the workings of the sociodemographic variables, and also the specific country differences.

An additional analysis was performed to determine the priority that different groups put on environmental spending relative to other spending concerns. This was done with the dependent variable PRIORITY, obtained by subtracting each respondent's general spending preferences score from his or her score on the environmental spending variable. The purpose of this was to determine whether the social bases of giving priority to the environment differ from those of preferences for increased spending.

The results (Table 4) show the same ranking of country effects as that in the pooled analysis of environmental concern, except that Australia has replaced Britain as the least environmentally concerned; the British country effect now places it next to last.⁶ This analysis also shows that males are more likely to favor spending on the environment relative to other spending concerns. The other compositional variables (age, education, and political orientation) have coefficients here similar to those found in the analysis of responses to the original environmental spending question (see Table 2). These results indicate that the social bases of the priority individuals place on environmental protection are not

⁶ The similarity of the priority ranking and the percentages ranking makes it less likely that the variations in Table 1 are the result of language differences.

greatly different than the social bases of concern for the environment by itself. Younger, more educated, Left-leaning males are more likely to give higher priority to spending on the environment than to other areas. The Australians, followed closely by the British, give least priority to environmental protection.

SUMMARY AND DISCUSSION

The study suggests that the social bases of environmental concern are fairly similar across countries, at least in industrialized ones like West Germany, Austria, USA, Britain, and Australia. In these five countries, concern for the environment was negatively associated with age, positively associated with education and left-leaning political orientations, and unrelated to income or gender. All of these results are quite comparable to those found in the USA (Van Liere and Dunlap, 1980).

Results such as these from a single point in time cannot prove the validity of Inglehart's theory, which suggests a change over time, though they could potentially seriously call into question some of its main substantive points. Many of the results, however, are in fact consistent with Inglehart's theory of a postmaterialist value shift. That the bases of concern for the environment are basically the same in all of the countries studied is consistent with Inglehart's thesis that there has occurred a culture shift in the industrialized West. A cross-national change in culture, hypothesized to have occurred due to cross-national wealth accumulation, should be carried by similar individuals in each country. The further claim that the dynamism of this shift was supplied by generational change is supported by statistical analyses which consistently show younger respondents as being more concerned with the quality of the environment. The link between postmaterialist values and the transition to postindustrial society, along with the concomitant expansion in education, is not contradicted by the results of this study either. Bürklin (1985) claims that the new highly educated, knowledgeable workers would be more sensitive to the costs of industrialization, such as pollution. The positive association between years of education and environmental concern makes sense with this line of reasoning.

In all of the analyses, the scale indicating policy preferences traditionally associated with the Old Left was positively correlated with concern for the environment. This indicates that while the questions in the Old Left scale reflect a set of concerns that have different social bases than concern for the environment (for example, income and education are associated with the Old Left scale and concern for the environment in opposite directions), the values inherent in Old Leftism have a political cultural affinity with environmental values. Those who support the traditional platform of the Left are also more likely to support government spending on the environment. This suggests that

while the environment receives support from a broad base, it has 'settled down' as a political issue, and is more consistently associated cross-nationally with the Old Leftist values.

This cross-national research has shown significant effects of variables for the countries themselves. What factors are hidden in the dummy country variables? One possibility is that the country effects indicate the existence of pressing economic concerns in some countries. Some countries may give less priority to government spending on the environment do to employment concerns. Indeed, unconcerned Britain had among the highest unemployment rates of any of the countries in the study (13.2 percent in April, 1986). However, while Austria's unemployment rate in 1985 was only 4.8 percent, Germany, even more concerned with the environment than Austria, had an unemployment rate nearly double, at 9.3 percent in 1985. Also, the United States, where only 43 percent of respondents desired increased environmental spending, had an unemployment rate of 6.4 percent in 1986, almost three percentage points less than Germany, where 83 percent desired increased spending.

If unemployment rates do not suggest a fruitful avenue of study, neither does the study of national debt. In 1985, for example, Australia, among the least concerned of the countries in the study, also had the second smallest public debt (\$29,700 million), and thus presumably had more of a luxury to overspend. Germany had a relatively high debt of \$97,004 million in 1983 (*The World in Figures*, 1987; *The Europa Yearbook*, 1988). Another possible factor subsumed in the variables for country is the current level of spending on the environment. Unfortunately, clear data on this issue for the middle 1980s is difficult to obtain. However, there is some data which suggests that this avenue is also not a promising one for explaining cross-national variation in public opinion. The Organization for Economic Co-operation and Development (1985) has collected information from Germany, USA, and Great Britain on 'government expenditure on environmental research and development'. If this variable was relevant to public concern, we would expect that countries that are already spending at high levels would show less public desire for more spending. But just the opposite is the case. Germany has been investing a greater percentage of its total research and development expenditure on environmental research than either the USA or Great Britain in every year from which data was available (1975-83). In 1983, Germany was spending about 1.75 percent of its R&D expenditures on environmental research, while the USA was spending 0.5 percent and Britain about 0.75 percent.⁷ In addition, in 1985 (the year of the survey), Austria was

⁷ This study included Norway, Denmark, Belgium, Japan, Sweden, Germany, USA, France, and Great Britain. Belgium had the highest percentage of environmental research spending in 1983, at around 2.75 percent. USA was at the bottom, with Great Britain next lowest. Germany ranked fourth.

enacting the most stringent automotive exhaust laws in Europe (World Resources Institute, 1991).

Rohrschneider's (1988) research suggests a nation's actual level of environmental destruction could be a key to unlocking the cross-national variation, since he found that perceived national environmental problems was a strong predictor of concern. For this argument to hold, it would have to be demonstrated that West Germany and Austria have undergone substantial destruction of their respective environments, while Britain, given its high population density, would have astonishingly little. While a variable as general as 'environmental damage' would be very difficult to measure, there is some evidence which supports this line of reasoning. Postel (1985) reports that West Germany led the countries in the survey, at the time of the survey, in acid rain damage and forest damage, with 5 million hectares out of 7.4 million of forest showing damage. Of the countries in the present study, Austria is second in forest devastation, with 400,000 hectares damaged. Britain and the United States are both less damaged; Australia is not even mentioned in this area. Also, it is interesting to note that the ranking of Germany, Austria, and Britain in support for more environmental spending is matched by their ordering in the density of average sulphur depositions (though Britain is the leader in emissions). Damage to forests is perhaps one of the most important pollution indicators because it is permanent. It can be related, especially in Germany, to national pride; and it is also economically damaging. So it seems that objective environmental disruption could be among the most important country-level factors explaining cross-national variations in environmental concern.

In clear support for this possibility, Hughes (1990) reports that in the 1987 Bundestag elections, the Greens' highest score, 21 percent, came in Freiburg, on the edge of the Black Forest. Also, he points out that the forest damage problem was serious enough for a federal investigation into *Waldsterben*, or forest death, in 1984. Further support for the objective damage argument comes from Bürklin's (1985, p. 191) assertion that the Greens do best in areas where there are actual or potential problems. He points out that the Greens' best results correspond almost identically with what he calls politicized environmental conflicts, such as the contested expansion of the Frankfurt airport and the building of a nuclear power plant in southwest West Germany. Also, Kreuzer (1990) argues that the Greens in Austria grew out of what may be called a politicized environmental conflict, in the 1978 referendum against nuclear power and a 1984 campaign against a Danube hydropower station planned at Hainburg.

The issue of politicized environmental conflicts calls attention to the most obvious mechanism by which damage may make respondents indicate concern for the environment—the influence of the media. It is possible that what

environmental concern surveys have really been measuring is the susceptibility of respondents to the issue-attention cycle (Downs, 1972). For example, Mazur's (1985) research shows that public opposition on the issues of nuclear power and water fluoridation goes up whenever there is an increase in articles that deal with these issues, regardless of the editorial slants of the articles. Processes implicating the media may thus shed some light on the cross-national differences. The forest damage in Austria and Germany may be getting steady coverage, keeping this issue in the public's attention, while a lack of equally serious problems in the other countries means less media coverage and thus less concern. For instance, Kepplinger (1989) finds German press coverage of environmental damage increasing sharply since 1975. Also, Bürklin (1985) explains that a strategy effectively carried out by the West German Greens in the early 1980s was to educate voters of their stand, often using television images of forest destruction. However, in a supplementary analysis for the USA in which I controlled for the same variables (minus the scale indicating Old Left policy preferences) as the present cross-national study, and included two measures of media contact—hours spent watching television per day and newspapers read per week—neither media-related variable was significantly related to desire for environmental spending.⁸

There is evidence that the other countries have begun to catch up with Germany and Austria in the area of environmental concern. For example, environmental concern in the United States, as measured by the spending question in the NORC GSS data, showed 72 percent of respondents desiring increased government spending in 1989. Also, a 1989 UN report shows that in that year 97 percent of citizens of the United States felt that government should be 'doing more' for the environment, 1 percent wanting no change, and 1 percent wanting government to do less. These figures suggest that there may be something to the media-effect hypothesis, despite its insignificance in the (limited) test in this study, as Americans were inundated with environment-related stories in 1988 (the unusually hot summer, medical waste washing ashore and closing beaches, *Time* magazine electing Earth 'Planet of the Year'), accompanied by the growth of 'green' advertising, which effectively tells consumers that the environment is an important issue. Specifically, Dunlap (1991), reviewing evidence of increasing concern in the United States throughout the 1980s, suggests that public opinion has been driven by increasing awareness, growing with the worsening of ecological problems. This finding would suggest that countries view environmental spending as a remedial and not

⁸ This regression used the 1985 NORC General Social Survey dataset, which includes the ISSP data and measures of media contact and many other variables.

preventive measure, and that international cooperation will be difficult between nations with different levels of environmental damage.

APPENDIX

Information on ISSP research methods is given in the International Social Survey Program 'Role of Government 1985 Codebook' (ZA-No. 1490), and also in the ISSP booklet 'Attitudes to Inequality and the Role of Government', published by The Netherlands's Social and Cultural Planning Office. In Germany, the data were obtained by mail survey, using a two-stage stratified random sample (first selecting communities, and then individuals). Of 2,513 surveys sent out, 1,048 were completed (a response rate of about 42 percent). The British data were also obtained by stratified random sample with a mail questionnaire. There were 1,530 completed cases, a completion rate of approximately 62 percent. In the United States, the ISSP was administered at the end of the interview for the General Social Survey. Respondents were selected using a full probability sample. A self-administered questionnaire was completed by 677 respondents, a 71 percent response rate. In Austria, a multi-stage stratified random sample was used; 987 self-completed questionnaires were collected, representing a response rate of 72 percent. For Australia, a questionnaire was mailed to a simple random sample drawn from the Australian Electoral Commission, which is representative since voter registration is compulsory for those over eighteen. The completed sample size is 1,528, a response rate of 61 percent. In Austria, Australia, Great Britain, and the United States, the ISSP inquiry was an adjunct to a survey conducted for the respective national social survey programs.

The dataset in this study constitutes the most carefully collected which includes both the United States with other nations and a variable relating to environmental concern. The results presented here, however, should be taken with extreme caution, as the ISSP does not escape problems often inherent in public opinion research, particularly that which strives to make valid cross-national comparisons. The response rate for the German sample, for example, is lower than the other response rates. This is cause for some caution, as the Germans are the most environmentally concerned in the survey. However, the German sample cannot realistically be seen as representing only zealous environmentalists, as the question on the environment was simply one among several attitudinal questions, dealing with a range of issues. Also, even if the German case was thrown out, the Austrian sample exhibits nearly the same degree of concern, and therefore the problem of cross-national variation remains.

ISSP members determine question content and wording, based on preparation by a multinational drafting group. This group is guided by an agreed specification and pre-test results. All questions are originally written in British English and then forward and back translation techniques are used. Careful piloting in several countries follows for this draft before the final version is accepted. Again, this does not ensure perfect comparability, and a caveat and caution in the interpretation of the results is in order. However, as the variation in the cross-national percentages are nearly the same as variations in the priority given to the environment in the PRIORITY variable (see p. 345), the issue of

language translations in affecting the survey results must be viewed as possible though less likely.

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