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VALUES AND VOTES IN GLOBAL SUSTAINABILITY

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SAS version 8.2 was used for the data analysis in this paper.

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Abstract

Sustainability is fashionable and becoming more important to the general policy discourse on protecting the environment. However, despite government adopting a National Strategy for Ecologically Sustainable Development some twelve years ago, Australia's performance on crucial items such as emissions of carbon dioxide equivalents remains poor. Arguably then, for the environmental cause to be advanced substantially, not only must people's attitudes toward protecting the environment change, but also their voting intentions so as to send a signal to the major political parties. This paper presents internationally comparative research using data from the most recent waves of the World Values Survey. Changes in preferences associated with support for the environment are contrasted against changes in intentions to vote for Green political parties. Results indicate the strength and direction of the Green movement, and highlight gaps in the conversion of environmental values into votes.

1 Introduction

There is a persistent view that the environment and economic growth are in opposition to each other, and that if we want to improve environmental performance we will have to sacrifice our economic prosperity. Limited attempts have been made to reconcile these viewpoints, with the Australian (then Labor) government introducing a National Strategy for Ecologically Sustainable Development in 1992 (Australian Government Department of the Environment and Heritage, 2004) to try and calm this conflict between the economy and the environment (Papadakis 2000). However, the current Australian government has made clear that it subscribes to the view that the environment stands in opposition to the economy. In Prime Minister Howard's words 'the [Kyoto] protocol would cost us jobs and damage our industry' (Roarty, 2002) and in the recent election campaign, the Coalition successfully pitted the protection of old growth forests against forestry jobs to split the Labor opposition's working and middle class votes (Koutsoukis et al, 2004).

Economic prosperity is a popular and salable political goal; alternatives often seem painful by comparison. Hamilton (2003) affirms the opposition between the economy and environment. He notes that modern society is caught in a fetish with economic growth, such that even those seeking to alleviate inequality (the redistributive left) have abandoned the idea of sustainability in favour of increased production. The growth obsession, he says, is producing a nation of over-workers, encourages individualisation, and erodes communal interest in such things as the environment. However, his opposition to material accumulation can easily be derided as excessively 'frugal'; particularly when the idea that utility is maximised through the continuous accumulation of *material* goods remains dominant in western society (Eckersley, 1998). In fact, both the opposition between the economy and the environment and the assumption that 'more (material good) is better' are highly questionable.

In terms of economic/environmental opposition, von Weizsacker et al (1997) and Suzuki and Dressel (2002) demonstrate through numerous case studies that the transition to a less resource-intensive society does not have to be painful to our way of life. On the contrary, they argue it is possible to reap a 'double dividend' from thoughtful living and business practices that respect the social, economic and environmental spheres. Indeed, one does not have to look hard to see that sustainability has become fashionable. There is now a regular 'Eco' section in the Sydney Morning Herald newspaper, the market for Australian organic products is estimated to be growing at an annual rate of 20 to 30 per cent (Alenson, 2003), campaigns to reduce the use of plastic shopping bags have seen a 29 per cent reduction at the big four supermarkets (Mascarenhas, 2004), and Toyota has had to increase production of its environmentally friendly hybrid car by 50 per cent to satisfy waiting lists which were five months long (Autoweb, 2004).

However, this does raise an important question: with sustainability so fashionable and seemingly salable, why is it so easily opposed to economy, and why is Australia's performance on crucial indicators of environmental degradation such as greenhouse gases still so poor? It is somewhat distressing that Papadakis (2000) notes most proposals by government-formed ESD working groups have not been implemented and Pollard (2004) finds that the government is not spending the money it allocated to greenhouse programs. Environmental awareness may be growing, but true pressure for environmental change and integration with the economy seems lacking.

Arguably, for the environmental cause to be advanced substantially not only must people's attitudes toward protecting the environment change, but also their voting intentions – to signal that they want that environmental agenda carried through. This brings us to the question of values: namely, what motivates people sufficiently to not only think green, but to value green ideas and policies sufficiently to vote for their parliamentary representatives? Public opinion/values and voting behavior are not necessarily synonymous entities. For example, values seem easily susceptible to economic conditions, in that the popularity of governments is linked far more to economic and material conditions than to ideological underpinnings. Different voting systems also play a role in diluting the influence of values on voting, with 'two party' systems more likely to promote economic over value concerns (ie retaining or replacing the present party dependent upon their performance in managing the economy; Nannestad 1994). Proportional voting systems on the other hand are reported to give more credence to values rather than pure economic concerns (Swank and Eisanga 1999), a prominent example being support for class and welfare issues in voting (Alesina and Glaesar 2004).

Nor are values and voting synonymous with the provision of policy. Attitudes and values towards the provision of public services have a strong effect upon voting and policy. No matter how desirable the outcome, taxation for any purpose is rarely popular. Esping Anderson (1990) notes, in analysing the historical roots of welfare, that the establishment of strong welfare states has been predicated more upon strategic alliances of leftist parties with the middle and agrarian classes of Europe than on attaining popular support at the ballot box through reformist policies.

However, values are not completely independent of voting and policy formation either. Esping Anderson also notes that welfare states and policies rely upon a particular 'regime' to function, a regime that strongly incorporates values. Policies of high taxation and expenditure enjoy ongoing support in 'social democratic' countries (eg Norway, Sweden, Finland) largely due to the strong adherence of people in those countries to values of equality. Conversely, such policies are unpopular in 'liberal' countries (eg Australia, the US and the UK) because of the liberal adherence to values of individual achievement and private enterprise. Such values are reflected in relevant social outcomes such as inequality (Smeeding 2002) and poverty (Goodin 1999, Alesina and Glaeser 2004) being high in the achievement-oriented liberal countries, and low in the equality-oriented social democratic countries. Alesina and Glaeser (2004) note that continuity of values, and social attachment in the form of generalised social trust, may hinge upon policy, in the form of electoral systems and (contentiously) racial homogeneity and immigration programs. The point that can be taken from this is that although causality is unclear, theory suggests that we should expect some degree of overlap between values, votes and policy. It is worthwhile then investigating green values even if related phenomena – voting patterns and policy outcomes – are influenced by other forces and values.

We work from the assumption here, therefore that green values, which are widely held and deeply believed in, may lead to green politics and policymaking to a noticeable degree. The question is, what induces such strong green values? An equally relevant question could be, what induces people to vote green despite prevailing economic conditions and their immediate material circumstances?

An answer to this question of motivation lies in the post-material hypothesis, which challenges the assumption that more material accumulation is better. Inglehart (1999)

notes that social cohesion in the form of trust and democracy are both associated with transcending rather than outright rejecting materialism. Inglehart suggests (1997) that values emphasising social (and presumably environmental) rights come only after material rights have been secured. They become visible in the form of changing attitudes amongst different generations of people, with each age-cohort exhibiting a greater number of people who believe in ‘post-material’ rather than ‘material’ values. The changes are, however, driven by increasing affluence:

The unprecedented economic and physical security of the postwar era has led to an intergenerational shift from Materialist to Postmaterialist values ... The term ‘Post-materialist’ denotes a set of goals that are emphasized *after* people have attained material security. Thus, the collapse of security would lead to a gradual shift back towards Materialist priorities. The emergence of Postmaterialism does not reflect a reversal of polarities, but a change of *priorities*: Postmaterialists do not place a negative value on economic and physical security – they value it positively, like everyone else; but unlike Materialists, they give even higher priority to self-expression and the quality of life (Inglehart, 1997, p35)

For Inglehart, post-materialism suggests that well-being is derived increasingly from non-material sources, such as community and environmental commitment, rather than material goods and services, as wealth is attained. Hamilton (2003) captures this in the idea of a post-growth society or ‘eudemonism’, whereby individuals plan their finances and downshift in order to disengage from the productive and consumptive economy. For Hamilton, this is intimately tied up with the realisation that community life, quality of life, and the environment are depreciating. Inglehart (1997) notes that material values, like those of trust, are changing around the world, providing evidence that material values are declining. He uses successive waves of the World Values Survey (WVS) to show a distinct decrease in the proportions of persons in each country who exhibit materialist values and a simultaneous increase in the proportions of persons in each country who exhibit post materialist values.

It is highly likely then that any rise in ‘green’ attitudes and support for green parties corresponds with the rise in affluence and transcendence of material values hinted at by Inglehart. There is a need then to examine attitudes and voting intentions amongst affluent countries on an internationally comparative basis. This paper analyses attitude and voting data from various Organisation for Economic Cooperation and Development (OECD) countries around the world, contrasting these with simple measures of environmental performance. We describe profiles for people who hold pro-environment attitudes and people who intend to vote for a green political party. This analysis provides some indication of the gaps remaining in converting green values to votes, and sustaining environmental interest.

2 Analysis

2.1 Data

The World Values Survey (WVS) measures both pro-environment attitudes and voting intentions. Sixty-four countries have been independently surveyed in at least one wave of

this survey, which is inclusive of almost 80 per cent of the world's population. To measure pro-environment attitudes, a number of questions are available from the WVS. However, most are only asked in the 1995 wave of the survey, one that did not include many European countries. A single question has been consistently repeated over time (since 1990) and in numerous countries in the WVS, and it captures a commitment to the environment in a willingness to pay for its protection. The question asks: "*I would agree to an increase in taxes if the extra money were used to prevent environmental damage,*" to which the respondent can strongly agree, agree, disagree or strongly disagree. We code inclinations to either 'strongly agree' or 'agree' as pro-environment attitudes. The WVS asks a question concerning the respondents' voting intentions: "*If there were a national election tomorrow, for which party on this list would you vote?*" First and second choices are gathered. We code a person as a green voter if they chose the green party as their first preference.

Data from the WVS can be aggregated for comparison with environmental performance data from other sources, and can also be used in multivariate analyses such as regression. Data concerning environmental performance has been analysed by a number of Australian commentators (see below), and is reproduced here from these secondary sources for the purposes of comparison.

With measures of environmental performance, the list of potential indicators is long and complex. For the purposes of brevity, we chose to examine only three indicators. These were per capita carbon emissions, and recycling of glass and paper. These indicators are appropriate because they are relatively uncontested as important measures, and they reflect a range of actions, including those close and easily visible to consumers in terms of cause and effect (recycling) and those seemingly more removed from consumers and interspersed with industry (carbon emissions). Information on recycling is available from OECD sources, and has been presented in comparative international analysis by Tiffen and Gittens (2004: 160) and is reproduced here. Turton and Hamilton (2002: 6) analysed data from United Nations sources and we reproduce their figures here on per capita emissions of carbon dioxide equivalents for the period 1990 – 1999.

Fourteen OECD countries were chosen for comparison. These countries were selected because they were all participants in the WVS, each had registered at least some vote for a green party in one of the WVS waves, and data on their environmental performance was available and comparable. The countries chosen were: France, United Kingdom, Italy, Netherlands, Denmark, Belgium, Ireland, Canada, Australia, Norway, Finland, Switzerland, Austria and Germany.

2.2 Methods

We establish if there is an association between attitudes, voting and performance by looking at aggregate attitude and voting figures then contrasting them against environmental performance indicators. We develop demographic profiles of people with pro-environment attitudes and with green voting intentions by looking at how these people are spread across different levels of income, education and age groups. These profiles are further substantiated through two separate multivariate regression models of individual behaviour, which control for demographic characteristics. Finally, to capture the extent of overlap between pro-environment attitudes and voting intentions, the two are cross-tabulated.

3 Findings

3.1 Links Between Attitudes, Voting and Environmental Performance

We first examined pro-environment attitudes in terms of willingness to accept an increase in taxes to prevent environmental damage. Results are displayed in Table 1 below. Pro-environment attitudes are strong, with more than half the population either strongly agreeing or agreeing to an increase in taxes for environment purposes in most countries and years. However, there has been a downward trend in support for such a tax visible in all countries except for Belgium and Norway (which have seen only very small increases). There are the big declines registered for Germany (by 25 percentage points), France and the United Kingdom (18 percentage points), and Austria and the Netherlands (13 to 14 percentage points). Some of these declines may be due to countries that have already made substantial inroads into environmental protection feeling like they have ‘done enough’ (particularly relative to other countries making less effort). This will be tested below when we contrast such figures against environmental performance. However, the broad and universal swing against environmental attitudes goes beyond the efforts of particular countries. It may be indicative of a move towards more conservative attitudes and away from environmental taxation and left-wing movements. On the other hand, the survey question suggests income tax as the tax base. Survey participants could well be of the view that funding for the prevention of environmental degradation should be dealt with at the source, that is, paid by the polluter.

Table 1: Increase in taxes to prevent environmental damage (% who strongly agree or agree)

Country	1990	1995	2000	Change Over Available Years (percentage point change)
France	56.2	.	38.0	-18.2
United Kingdom	72.2	.	54.2	-18.0
Italy	56.4	.	45.4	-11.0
Netherlands	70.0	.	56.1	-13.9
Denmark	71.1	.	67.2	-3.9
Belgium	43.2	.	45.0	1.8
Ireland	51.4	.	41.5	-9.9
Canada	64.1	.	59.4	-4.7
Australia	.	69.8	.	.
Norway	74.0	75.3	.	1.2
Finland	57.5	52.1	52.0	-5.6
Switzerland	41.2	.	.	.
Austria	56.3	.	42.0	-14.2
Germany	56.9	64.8	31.7	-25.1

Source: World Values Survey.

Note: Data is weighted to adjust for sampling error; sample is all persons aged 18 to 75. People aged over 75 were not included in every country in the WVS, therefore we exclude them for consistency.

The possibility of a broad move towards heightened conservatism adds extra depth to the issues of politics and voting patterns. We examine aggregate votes for green parties and trends over time in Table 2. The trend for voting intention is the near opposition to the decline in pro-environment attitudes. Green parties are relatively new on the political scene in most countries, with the oldest ecological party being formed in 1973 in Britain.

The Australian Greens only became a national political force in 1992. So it is not surprising that the proportion of persons intending to vote green is low in all countries. The percentage of green voters is trending upwards in all countries, except the UK, Switzerland and Italy. It is highest in the Netherlands in the year 2000, where the first Green party formed in 1983 (party formation dates sourced from Global Greens, 2004).

The opposing trends for attitudes and voting have two likely explanations. The first is that disillusionment is growing about the commitment of major political parties to making strong environmental headway. A sense of disillusion would make people with environmental convictions less willing to accept an increase in taxes for environmental purposes, seen as a waste of money, and more willing to vote for a party seen to hold environmental issues as central to their platform, such as the greens. An alternative explanation is that polarization is occurring in the developed world. Some people are swinging towards the right and a new conservatism, away from environmental expenditure; while a rising number are moving further to the left and switching their vote to green parties. This polarization is evident in many elections taking place in contemporary times (e.g. the United States and Australia).

Table 2 Intend to vote green if election called (% who indicated first preference)

Country	1981	1990	1995	2000	Change Over Available Years (percentage point change)
France	1.0	9.9	.	9.0	8.0
United Kingdom	.	4.7	.	2.8	-1.9
Italy	.	8.2	.	1.7	-6.6
Netherlands	.	8.5	.	18.6	10.1
Denmark	.	1.7	.	2.5	0.8
Belgium	1.3	5.7	.	7.8	6.6
Ireland	.	3.6	.	4.2	0.6
Canada	.	.	.	0.9	.
Australia	.	.	15.8	.	.
Norway	.	.	6.2	.	.
Finland	.	7.3	11.2	8.9	1.7
Switzerland	.	6.3	4.0	.	-2.3
Austria	.	6.4	.	7.5	1.1
Germany	2.3	5.3	16.5	4.3	2.1

Source: World Values Survey.

Notes: In countries where there was more than one environmental party with either green or ecology in the name, we summed these primary votes. Data is weighted to adjust for sampling error; sample is all persons aged 18 to 75.

We turn now to examine levels and trends in support for taxes for environmental purposes, the green vote, and the environmental performance indicators of greenhouse gas emissions and recycling. These can be seen in Table 3. The good environmental performers, those demonstrating low per capita greenhouse gas emissions and high/increasing levels of recycling, are nearly all continental European. It is important to note that nuclear electricity generation may be a confounding factor in investigating improved carbon emissions. In France, the share of total electricity generation by nuclear energy grew from 71% to 75% in the period from 1990 to 2000 (IAEA 2003). However, several old nuclear power plants were reaching the end of their natural lives and were being decommissioned

by this time (IAEA 2002); and countries such as the UK are not replacing such facilities (Beder 2003). Furthermore, France had had a period of strong annual growth of nuclear electricity generation from 1970-1990 of 21.86 % per year, but saw this fall to only 2.82% per year for the period 1990-2000 (IAEA 2003). This suggests a large part of the offsetting of carbon dioxide emissions had already occurred before the period from 1980 to 2000 that we examine. Atomic power alone does not explain, and does not detract from, the good environmental performance of continental European countries.

In such countries with good environmental performance, support for an increase in taxes for environmental purposes is lower. Perhaps people in these countries feel that they are already contributing enough for the protection of the environment. Norway stands out as the only good environmental performer with remaining high levels of support of taxation for environmental purposes. Of the poorer environmental performers, nearly all of which are English-speaking countries, there is a consistent pattern of high support for the environmental tax, despite a trending decline. This likely reflects a continued confidence in government and mainstream political parties to get the job done, despite their lack of effect to date.

The green vote does not display a strong consistent pattern with environmental performance and attitude to the environmental tax. However, among the poor environmental performers, the green vote is highly variable: low in Canada and the United Kingdom, medium in Ireland and high in Australia. In the better performing countries, the green vote has a smaller range. The vote overall seems to bear little relation to either performance or attitudes, however. This provides support for the polarisation theory raised above to explain the opposing trends between attitudes and voting. The increase in support for green parties has come not because people want action on poor environmental performance, but for other reasons such as a reaction to the conservative right.

Table 3 Attitudes, Voting and Environmental Performance

Country	Agree to Environ. Tax (%)		Intend to Vote Green (%)		CO2-e Emissions (tones per capita)	Glass Being Recycled (%)		Paper Being Recycled (%)		
	Latest	Change across Available Data	Latest	Change across Available Data	1999	Change since 1990	2000	Change since 1985	2000	Change since 1985
	France	38.0	-18.2	9.0	8.0	8.2	-0.5	55	29	50
United Kingdom	54.2	-18.0	2.8	-1.9	10.8	-2.2	26	14	41	13
Italy	45.4	-11.0	1.7	-6.6	9.1	0.3	40	15	37	12
Netherlands	56.1	-13.9	18.6	10.1	14.5	0.2	78	29	45	-5
Denmark	67.2	-3.9	2.5	0.8	13.6	0.2	65	46	48	17
Belgium	45.0	1.8	7.8	6.6	14.6	1.1	87	45	52	.
Ireland	42.0	-9.9	4.2	0.6	15.6	1.8	35	28	10	0
Canada	59.4	-4.7	0.9	.	22.2	2.6	17	5	54	31
Australia	69.8	.	15.8	.	27.9	-1.0	40	.	47	11
Norway	75.3	1.2	6.2	.	8.6	-1.4	85	.	44	28
Finland	52.0	-5.6	8.9	1.7	12.7	2.0	89	68	67	28
Switzerland	41.2	.	4.0	-2.3	6.9	-0.5	91	45	63	24
Austria	42.0	-14.2	7.5	1.1	8.8	0.0	84	46	66	29
Germany	31.7	-25.1	4.3	2.1	11.6	-3.2	83	40	70	27

Source: World Values Survey, tax and voting data. Turton and Hamilton (2002), per capita carbon dioxide equivalent emissions. Tiffen and Gittins (2004), glass and paper recycling.

Notes: WVS data range varies: Environmental Tax attitude data for Australia and Switzerland is from 1995 only so no change is calculable, for Norway it is from 1990 and 1995, and all other countries 1990 and 2000; Intention of voting green is data from 1995 only for Canada, Australia and Norway, from 1981 to 2000 for France, Belgium and Germany, from 1990-95 for Switzerland, and all other countries 1990 to 2000.

3.2 Attitude and Voting Profiles

Now we examine the profiles of those who support certain attitudes and voting preferences concerning the environment. Table 4 constructs the income, education and age profile of people from two populations – those who support an environmental tax, and those who do not – from the latest data available for each country. The stereotypical profile we would expect is that only the affluent and the educated, Inglehart's post-materialists, would support environmental change. In comparing those who agree with an environmental tax with those who disagree, there is some limited evidence in support of such a thesis. A slightly greater proportion of the tax supporters appear to be richer, have attained higher education, and are aged less than 44, when compared with non-tax supporters.

However, in looking just at tax supporters, it is clear that support goes beyond the realms of just the stereotypically affluent 'elites'. People from the lowest three deciles of the income distribution are over represented amongst supporters. Switzerland is unique with half of the pro-environmental tax group located in high-income groups. Furthermore, in every country a clear majority of supporters had secondary education or less. This indicates the grass-roots nature of environmental concern: their supporters come from all walks of life, and have concerns that are universal and not just the purview of the so-called 'elites' of society.

There is a further tentative observation to note concerning education. Better-performing European countries tend to have higher proportions of less educated persons favouring taxes for environmental purposes, including Germany and Switzerland (86%), and Austria (83%), though Italy and the United Kingdom are also high. Similarly, poorly performing Anglo countries tend to have smaller proportions of less educated people favouring environmental tax, including Australia (62%) and Canada (67%) (although the Netherlands, Belgium and Norway are also low). This raises the possibility that it is the dispersion rather than concentration of information being the driver of environmental concerns and results; that countries that have been able to create environmental awareness amongst the less educated population are able to secure improved environmental results, whereas countries where environmental concerns are concentrated more among people with post-secondary education are less successful. Age is the only demographic that conforms to the stereotypical environmentalist - younger people are prominent in the pro-environmental tax group in every country.

Table 4 Preferences on increase in taxes to prevent environmental damage, % in each income, education and age category, latest data available

Population - Agree to an increase in tax									
Country	Income			Education		Age			
	Top 30%	Middle 40%	Bottom 30%	Post-secondary	Secondary or less	Less than 30	30 to 44	45 to 59	60 to 75
France	9.9	36.2	53.9	29.9	70.1	23.2	32.7	23.9	20.2
UK	12.3	41.8	45.9	17.9	82.2	25.1	30.9	20.0	24.0
Italy	20.8	32.4	46.9	19.0	81.0	20.7	31.3	22.4	25.7
Netherlands	30.6	54.4	15.0	40.3	59.7	21.2	34.6	26.8	17.4
Denmark	22.0	41.9	36.1	31.1	68.9	20.8	33.4	30.5	15.3
Belgium	26.1	42.2	31.7	39.4	60.6	18.7	36.2	22.5	22.6
Ireland	24.9	50.9	24.2	25.4	74.6	24.4	33.3	25.4	17.0
Canada	24.9	40.5	34.6	32.1	67.9	25.2	32.5	26.0	16.4
Australia	27.5	31.5	41.0	37.9	62.1	25.7	34.1	24.1	16.2
Norway	30.3	35.6	34.1	35.1	64.9	26.5	32.7	24.2	16.8
Finland	14.1	49.3	36.6	15.6	84.4	21.0	31.3	27.5	20.3
Switzerland	50.9	25.6	23.5	14.0	86.0	27.1	31.6	25.9	15.4
Austria	21.1	42.6	36.4	16.6	83.4	21.4	34.8	23.8	20.0
Germany	8.5	41.4	50.1	13.7	86.4	22.7	35.6	25.4	16.3

Population - Disagree with an increase in tax									
Country	Income			Education		Age			
	Top 30%	Middle 40%	Bottom 30%	Post-secondary	Secondary or less	Less than 30	30 to 44	45 to 59	60 to 75
France	6.3	35.0	58.6	18.4	81.7	19.4	32.7	24.2	23.8
UK	11.8	44.2	44.0	10.6	89.5	23.0	33.0	23.6	20.4
Italy	17.4	30.3	52.4	12.0	88.0	24.9	28.3	22.8	24.1
Netherlands	24.1	52.8	23.1	24.6	75.4	24.0	31.1	26.6	18.4
Denmark	19.2	42.2	38.7	18.9	81.2	24.3	31.6	27.2	16.9
Belgium	18.5	39.7	41.7	25.2	74.8	21.5	29.6	24.3	24.7
Ireland	15.6	54.0	30.4	16.1	83.9	29.7	31.6	23.0	15.7
Canada	24.9	34.5	40.6	24.7	75.3	18.9	39.4	23.9	17.7
Australia	25.1	32.5	42.4	29.0	71.0	23.7	33.6	24.2	18.5
Norway	22.9	43.5	33.6	21.8	78.2	18.8	36.5	27.7	17.0
Finland	11.9	44.0	44.1	9.8	90.2	20.7	27.8	26.9	24.6
Switzerland	50.8	29.6	19.6	6.1	93.9	19.2	39.0	26.0	15.8
Austria	16.7	41.3	42.0	10.5	89.5	22.1	28.2	27.6	22.1
Germany	4.3	42.7	53.0	6.8	93.2	16.6	34.7	23.6	25.1

Source: World Values Survey.

Notes: Data for Australia, Norway and Switzerland from 1995, data for all other countries from 2000. Respondents indicate which income grouping they belong to from a set of 'show-cards'. Deciles of income in each country are calculated within each country based upon responses. Data is weighted to adjust for sampling error; sample is all persons aged 18 to 75. Rows sum to 100 within each of the income, education and age variables.

Table 5 examines these same demographics for two voting populations in each country – those who would vote green if an election was called, and those who would vote for any other party. The profile is similar to that compiled for environmental tax preferences. Comparing Green with Other voters, a slightly greater proportion of green voters are richer, have attained higher education, and are aged less than 44, than are non-green voters. Further, the effects of education and age seem to be slightly stronger upon voting than upon environmental taxation preferences, with larger differences in the proportions of

green voters versus other voters who are university educated and young, when compared to the relevant proportions of environmental tax supporters and non-supporters.

Green voters still come, however, quite evenly from each income grouping. Interestingly, people in the middle-income deciles are over represented, rather than bottom three income deciles. The majority of green voters have secondary education level or less in every country except Canada. However, the educational split is less stark than it was for the pro-environmental tax group. More so than the previous profile, green voters are more likely to belong to the younger age groups.

The post-materialist argument as the basis to green support is less substantial than that of successful grass-roots political support. The idea that the spread of environmental awareness amongst the less educated improves environmental support is hinted at here as well. The largest number of less educated green voters is found in well performing countries of Germany and Switzerland, and the smallest number in a poorer performer, Canada. These results are not generalisable across all countries, however.

Table 5 Voting Intentions, % in each income, education and age category, latest data available

Population - Vote Green if Election Called									
Country	Income			Education		Age			
	Top 30%	Middle 40%	Bottom 30%	Post-secondary	Secondary or less	Less than 30	30 to 44	45 to 59	60 to 75
France	6.7	34.6	58.7	31.6	68.4	20.8	43.5	23.4	12.3
United Kingdom	22.0	48.3	29.7	22.1	78.0	31.0	41.5	18.1	9.5
Italy	25.0	31.3	43.8	34.4	65.6	28.1	40.6	18.8	12.5
Netherlands	25.3	54.1	20.6	43.6	56.4	23.7	34.6	26.0	15.7
Denmark	37.5	41.7	20.8	50.0	50.0	20.8	29.2	33.3	16.7
Belgium	19.9	49.8	30.3	42.8	57.2	22.8	43.6	22.1	11.4
Ireland	17.8	63.0	19.2	36.6	63.4	41.9	43.6	14.5	0.0
Canada	27.2	36.5	36.4	62.9	37.1	36.4	27.2	24.7	11.8
Australia	25.5	31.7	42.8	36.2	63.8	39.3	41.4	14.9	4.4
Norway	29.4	33.8	36.8	39.7	60.3	29.4	38.2	22.1	10.3
Finland	20.7	35.8	43.5	25.7	74.3	34.5	31.9	30.5	3.1
Switzerland	60.7	14.4	25.0	19.1	80.9	16.7	38.9	29.7	14.8
Austria	24.4	42.1	33.5	35.1	65.0	28.4	47.8	17.8	6.0
Germany	9.8	52.8	37.4	13.9	86.2	41.2	40.8	15.9	2.1
Population – Vote Any Other Party if Election Called									
Country	Income			Education		Age			
	Top 30%	Middle 40%	Bottom 30%	Post-secondary	Secondary or less	Less than 30	30 to 44	45 to 59	60 to 75
France	7.8	35.6	56.7	21.9	78.1	20.8	31.6	24.1	23.5
United Kingdom	11.8	42.8	45.5	14.3	85.7	24.0	31.6	21.8	22.7
Italy	18.8	31.2	50.0	14.8	85.2	22.9	29.5	22.7	25.0
Netherlands	28.3	53.6	18.1	31.1	68.9	22.1	32.7	26.9	18.3
Denmark	20.7	42.0	37.4	26.5	73.5	22.0	32.9	29.3	15.8
Belgium	22.1	40.1	37.8	30.6	69.4	20.0	31.6	23.6	24.8
Ireland	19.5	52.2	28.2	19.2	80.8	26.9	31.8	24.4	17.0
Canada	24.9	38.1	37.1	28.8	71.2	22.5	35.4	25.2	17.0
Australia	27.0	31.8	41.2	35.0	65.0	22.4	32.5	25.9	19.2
Norway	28.4	37.8	33.8	31.3	68.7	24.3	33.3	25.2	17.2
Finland	12.3	47.8	39.9	11.6	88.4	19.5	29.4	26.9	24.3
Switzerland	50.5	28.5	21.0	8.9	91.1	22.7	35.8	25.8	15.7
Austria	18.1	41.8	40.2	11.3	88.7	21.3	29.6	26.7	22.5
Germany	5.4	41.8	52.7	8.8	91.2	17.5	34.7	24.6	23.2

Source: World Values Survey.

Notes: Data is weighted to adjust for sampling error; sample is all persons aged 18 to 75. Data for Australia, Norway and Switzerland from 1995, data for all other countries from 2000. Rows sum to 100 within each of the income, education and age variables.

We examine these profiles in multivariate analysis to determine the independent effects of the demographic characteristics. Two logistic regressions were run, one with taxation for environmental purposes as the dependent variable, the other with voting as the dependent variable. Each of the age, education and income variables enter the regression model as a system of dummy variables. In order to control for the potentially strong effects of country-citizenship, the nationality of each respondent was coded into one of three categories derived from the tentative difference noted earlier concerning environmental performance and taxation; European, English-speaking and Scandinavian. Given that Scandinavian countries are generally more social democratic than European countries, and

are usually more supportive of higher levels of taxation for social purposes (Esping Andersen, 1990), it is possible that they may support environmental taxation as a normal and acceptable practice rather than as one related in any way to environmental performance. This suggests that Scandinavian countries should be separated in regression from continental European countries to as to more properly identify effects.

Regression results tend to support Inglehart’s hypothesis. The effect that higher education has on the odds of being pro-tax or voting green is fairly large and consistent in both models, nearly doubling the odds. Also, in the model of environmental tax, the higher one’s income, the more likely they are to be pro- environmental tax. Green voters are found all across the income distribution though – the different categories of income in the voting model are not significant. In the voting model it is age that takes over as the more important predictor. This variable has a strongly significant effect upon both variables, with younger people 1.18 times as likely to vote green as their neighbouring age group. The odds of voting green steadily decrease with age. In addition, it is only the youngest age group that predicts a pro- environmental tax attitude significantly, and even then the size of the effect is small. Region specific effects are also noticeable. Being a non-European citizen positively and significantly predicts support for environmental taxation, and being Scandinavian positively and significantly predicts support for the green vote.

Overall, and in confirmation of the post-material thesis, high income remains the most important determinant of a pro-environmental tax attitude, and education predicts both outcomes. This finding suggests that whilst the population of environmental tax supporters and green voters do span all categories of education and income when considered as an aggregate block (see Tables 4 and 5 earlier), if such supporters and voters are compared against the overall voting and environmental tax population as a whole, they are disproportionately represented by educated, affluent persons. Inglehart’s thesis of rising post-material values with affluence is relevant; but, it should be noted, is not a proven pathway to positive environmental outcomes.

Table 6 Logistic Regression modeling the incidence of Agreeing to the Environmentally Beneficial Tax, and Intention to Vote Green

Independent variables	Agree to Environment Tax			Intend to Vote Green		
	Estimate	Significance	Odds Ratio	Estimate	Significance	Odds Ratio
Intercept	-0.51	***		-2.74	***	
Bottom 30% Income	-0.08	**	0.92	-0.08		0.93
Top 30% Income	0.19	***	1.21	-0.11		0.90
Post-secondary Education	0.58	***	1.79	0.70	***	2.01
Age less than 30	0.09	**	1.09	0.16	**	1.18
Age 45 to 59	-0.03		0.97	-0.33	***	0.72
Age 60 to 75	0.00		1.00	-0.98	***	0.38
English-speaking citizen.	0.74	***	2.10	0.04		1.04
Scandinavian citizen.	0.87	***	2.38	0.39	***	1.48

Source: World Values Survey.

Notes: Sample 20,479 people across 14 countries, persons aged 18 to 75. Data for Australia, Norway and Switzerland from 1995, data for all other countries from 2000. Pooled regression: one observation per person per country. Reference group is middle income, secondary education or less, middle aged (30 to 44), European.

‘***’ and ‘**’ indicate significant at the 1% and 5% level, respectively.

3.3 Attitude and Voting Cross-tabulation

With Table 7 we examine the overlap between people who support an environmental tax, and people who intend to vote green. As expected, there is substantial overlap between pro- environmental tax and green voting preference. In all countries, people who intend to vote green are much more likely to also be in favour of the tax. However, there is also substantial support amongst those who do not vote green for the tax. As the regression analysis demonstrates, this is in part due to generally more positive attitudes to environmental taxes in some of the countries studied. This support amongst non-green voters mirrors the findings above concerning environmental tax and performance; strongly performing European countries see a clear majority of non-green voters disagreeing with an environment tax, whilst under-performing Anglo countries see a clear majority of non-green voters agreeing with such a tax (with the exception of Ireland).

This confirms Papadakis' (2000) finding that there are deeply committed environmentalists, whose values and political intentions are strongly interrelated, and then there are others. Many of these other people hold environmental values, including deeper ones that command a willingness to pay for environmental protection; but these values are not converting to green votes.

Table 7 Attitude and Voting Cross-Tabulation

Country	Vote Green			Do Not Vote Green		Proportion of non-green voters who are pro tax
	Agree Tax (% of total)	Disagree Tax (% of total)	Proportion of green voters who are pro tax	Agree Tax (% of total)	Disagree Tax (% of total)	
France	4.3	4.7	47.8	33.7	57.3	37.0
United Kingdom	2.2	0.5	81.5	51.9	45.3	53.4
Italy	1.1	0.6	64.7	44.4	54.0	45.1
Netherlands	14.6	4.0	78.5	41.5	39.9	51.0
Denmark	2.1	0.4	84.0	65.1	32.4	66.8
Belgium	5.0	2.9	63.3	40.0	52.1	43.4
Ireland	2.6	1.6	61.9	38.9	56.9	40.6
Canada	0.7	0.1	87.5	58.7	40.5	59.2
Australia	12.0	3.8	75.9	57.8	26.4	68.6
Norway	5.8	0.5	92.1	69.5	24.3	74.1
Finland	5.5	3.4	61.8	46.4	44.7	50.9
Switzerland	2.2	1.7	56.4	39.0	57.1	40.6
Austria	5.3	2.2	70.7	36.7	55.8	39.7
Germany	2.2	2.1	51.2	29.6	66.1	30.9

Source: World Values Survey.

Notes: Data is weighted to adjust for sampling error; all persons aged 18 to 75.

4 Conclusion

Green issues and thinking have come to greater prominence and we are witnessing an increase in the green political vote. Simultaneously, we are seeing a near-universal decline in support for increased environmental taxation to protect the environment; our results suggest that this increase in the green vote reflects a wider reaction against conservative politics, rather than a conversion of environmental values to votes.

People want to prevent environmental degradation and they are willing to pay to prevent it, if they believe it is needed. This is shown by the maintenance of quite high levels of support for the tax (despite declines and increasing political conservatism). An association between environmental tax preferences and environmental performance seems apparent, with a willingness to pay higher taxes to enable environmental protection at a lower ebb in the stronger performing European countries, but more people willing to pay more environmental tax in the poorer performing English-speaking countries studied.

Green attitudes and votes are spread quite evenly across demographic characteristics, but there is some clustering among young, educated and affluent individuals. This supports findings such as Turnbull and Vromen's concerning voting in Australia. They note that 'overall, youth, the inner cities, and professionals are important for the Greens support base, but their support base is not limited to these groups' (2004 p3). We find that there is a strong overlap between people who vote green and those who value the environment enough to support an increase in environmental taxes. But there remains a large group of people with environmental concern who trust the major parties to deliver results.

At the extremes of the profiles, the results showed some indication that the environmental performance is better in the OECD countries where less educated people are brought on-board the environmental movement. Perhaps this helps to neutralise the 'jobs versus the environment' claim so often put forward and used in divisive political strategies, freeing a country to work towards better environmental outcomes. Green ideas, it seems, must be sold to a far wider audience.

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