

**Research Programme on Environmental Attitudes, Values and  
Behaviour in Ireland**

**Cultural Sources of Support on which  
Environmental Attitudes and Behaviours Draw**

**Second Report of National Survey Data**

**Mary Kelly, Fiachra Kennedy,  
Pauline Faughnan and Hilary Tovey**

**Social Science Research Centre, University College Dublin  
Department of Sociology, University College Dublin  
Department of Sociology, Trinity College Dublin**

**September 2003**

**Environmental RTDI Programme 2000 - 2006**



## **Cultural Sources of Support on which Environmental Attitudes and Behaviours Draw**

Second Report from the Research Programme on Environmental Attitudes, Values and Behaviour in Ireland

September 2003

**Lead Organisation:** University College Dublin

### **Research Team:**

Dr Mary Kelly, Department of Sociology, University College Dublin (Project Co-ordinator)

Dr Pauline Faughnan, Social Science Research Centre, University College Dublin

Hilary Tovey, Department of Sociology, Trinity College Dublin

Dr Colette Dowling, Associate, Social Science Research Centre, University College Dublin

### **Researchers:**

Fiachra Kennedy

Dr Brian Motherway

Dr Fiona Gill

Sharon Bryan

### **Administration:**

Philippa Caithness, Social Science Research Centre, University College Dublin

### **Accommodation:**

Institute for the Study of Social Change, University College Dublin, Belfield, Dublin 4

### **Funded by:**

Environmental Protection Agency under the National Development Plan

Environmental RDTI Programme 2002-2006

Grant no: 2001-MS/SE1-M1

**Web site:** [www.ucd.ie/environ/home.htm](http://www.ucd.ie/environ/home.htm)

## Table of Contents

<b>ACKNOWLEDGEMENT.....</b>	<b>VII</b>
<b>EXECUTIVE SUMMARY.....</b>	<b>IX</b>
<b>1. ENVIRONMENTAL VALUES, ATTITUDES AND BEHAVIOURS IN IRELAND: AN INTRODUCTION.....</b>	<b>1</b>
<b>2. ENVIRONMENTAL ATTITUDES AND BEHAVIOURS.....</b>	<b>13</b>
<b>3. THE IMPACT OF THE NEW ENVIRONMENTAL PARADIGM ON ENVIRONMENTAL ATTITUDES AND BEHAVIOURS IN IRELAND.....</b>	<b>29</b>
<b>4. THE IMPACT OF POST-MATERIALISM ON ENVIRONMENTAL ATTITUDES AND BEHAVIOURS IN IRELAND.....</b>	<b>45</b>
<b>5. THE IMPACT OF CULTURAL VALUES ON ENVIRONMENTAL ATTITUDES AND BEHAVIOURS IN IRELAND.....</b>	<b>53</b>
<b>6. THE IMPACT OF UNDERLYING VALUES ON ENVIRONMENTAL ATTITUDES AND BEHAVIOURS IN IRELAND.....</b>	<b>69</b>
<b>7. ENVIRONMENTAL VALUES, ATTITUDES AND BEHAVIOURS IN IRELAND: SOME CONCLUSIONS.....</b>	<b>81</b>
<b>APPENDIX 1 – QUESTIONNAIRE ITEMS FROM ISPAS CORE MODULE AND SELF-COMPLETION MODULE USED IN THIS REPORT.....</b>	<b>89</b>
<b>APPENDIX 2 – ADDITIONAL TABLES.....</b>	<b>93</b>
<b>REFERENCES.....</b>	<b>97</b>

## List of Tables

Table 2.1	Distribution of Responses on the Perceptions of Dangers of Danger to the Environment Items (%)	14
Table 2.2	Distribution of Responses on the Willingness to Take on Extra Costs in Order to Protect the Environment Items (%)	15
Table 2.3	Distribution of Responses on the Environmental Efficacy Items (%)	16
Table 2.4	Distribution of Responses on the Trust as Source of Correct Information about the Causes of Pollution Items (%)	17
Table 2.5	Distribution of Responses on the Dealing with Waste Items (%)	17
Table 2.6	Distribution of Responses on the Reported Environmental Behaviour Items (%)	18
Table 2.7	Distribution of Responses on the Promotion of the Environment as a Social and Political Issue Items (%)	19
Table 2.8	Socio-Demographic Variables and Environmental Attitudes (Standardised Coefficients)	20
Table 2.9	Socio-Demographic Variables and Trust as Source of Information about the Causes of Pollution (Exp(B))	22
Table 2.10	Socio-Demographic Variables and Attitudes to Dealing with Waste (Exp(B))	23
Table 2.11	Socio-Demographic Variables and Reported Environmental Behaviour (Exp(B))	25
Table 2.12	Socio-Demographic Variables and Promotion of the Environment as a Social and Political Issue (Exp(B))	26
Table 3.1	New Environmental Paradigm Scale Items and Principal Component Factor Loadings	32
Table 3.2	Regression Analysis of Socio-Demographic Variables and the NEP Scale (Standardised Coefficients)	34
Table 3.3	NEP Scale and Environmental Attitudes (Standardised Coefficients)	36
Table 3.4	NEP Scale and Trust as Source of Information about the Causes of Pollution (Exp(B))	38
Table 3.5	NEP Scale and Attitudes to Dealing with Waste (Exp(B))	39
Table 3.6	NEP Scale and Reported Environmental Behaviour (Exp(B))	40
Table 3.7	NEP Scale and Promotion of the Environment as a Social and Political Issue (Exp(B))	41

Table 4.1	Difference between Materialists and Post-Materialists in Ireland in 1976, 1982, 1992 and 2002 (%)	48
Table 4.2	Logistic Regression of Socio-Demographic Variables and the MPM Scale (Exp(B))	49
Table 4.3	MPM Scale and Environmental Attitudes (Standardised Coefficients)	50
Table 4.4	MPM Scale and Trust as Source of Information about the Causes of Pollution (Exp(B))	50
Table 4.5	MPM Scale and Attitudes to Dealing with Waste (Exp(B))	51
Table 4.6	MPM Scale and Reported Environmental Behaviour (Exp(B))	51
Table 4.7	MPM Scale and Promotion of the Environment as a Social and Political Issue (Exp(B))	52
Table 5.1	Grid and Group Scale Items and Principal Component Factor Loadings	56
Table 5.2	Regression Analysis of Socio-Demographic Variables and the Grid and Group Scales (Standardised Coefficients)	59
Table 5.3	Grid and Group Scales and Environmental Attitudes (Standardised Coefficients)	61
Table 5.4	Grid and Group Scales and Trust as Source of Information about the Causes of Pollution (Exp(B))	62
Table 5.5	Grid and Group Scales and Attitudes to Dealing with Waste (Exp(B))	63
Table 5.6	Grid and Group Scales and Reported Environmental Behaviour (Exp(B))	64
Table 5.7	Grid and Group Scales and Promotion of the Environment as a Social and Political Issue (Exp(B))	65
Table 6.1	Understanding Environmental Attitudes (Standardised Coefficients)	71
Table 6.2	Understanding Trust as Source of Information about the Causes of Pollution (Exp(B))	73
Table 6.3	Understanding Attitudes to Dealing with Waste (Exp(B))	74
Table 6.4	Understanding Reported Environmental Behaviour (Exp(B))	76
Table 6.5	Understanding Promotion of the Environment as a Social and Political Issue (Exp(B))	78
Table A2.1	Perceptions of Danger Scale Items and Principal Component Factor Loadings	93
Table A2.2	Willingness to Take on Extra Costs to Protect the Environment Scale Items and Principal Component Factor Loadings	93

Table A2.3	Environmental Efficacy Scale Items and Principal Component Factor Loadings	93
Table A3.1	Two Component NEP Scale Items and Principal Component Factor Loadings	94
Table A3.2	Distribution of Responses on the NEP Scale Items (%)	94
Table A5.1	Distribution of Responses on the Grid and Group Scales Items (%)	95

**Acknowledgement**

This report has been prepared as part of the Environmental Research Technological Development and Innovation Programme under the Productive Sector Operational Programme 2000-2006. The Programme is financed by the Irish Government under the National Development Plan. It is administered on behalf of the Department of the Environment and Local Government by the Environmental Protection Agency which has the statutory function of co-ordinating and promoting environmental research.

**Disclaimer**

Although every effort has been made to ensure accuracy of the material contained in this publication, complete accuracy cannot be guaranteed. Neither the Environmental Protection Agency nor the authors accept any responsibility whatsoever for loss or damage occasioned or claimed to have been occasioned, in part or in full, as a consequence of any person acting, or refraining from acting, as a result of a matter contained in this publication. All or part of this publication may be reproduced without further permission, provided the source is acknowledged.





## Executive Summary

### Introduction

**Cultural Sources of Support on which Environmental Attitudes and Behaviours Draw** is the second report to emanate from the *Research Programme on Environmental Attitudes, Values and Behaviour in Ireland*. The first report<sup>1</sup> considers how Irish environmental attitudes have changed between 1993 and 2002, while the third report places Irish attitudes to the environment in a comparative European context. While these three reports drawn on quantitative survey data, the fourth and fifth reports are based on qualitative research, and are entitled respectively, *Environmental Discourses Articulated by the Public* and *The Making of Environmental Activists*.

This second report focuses on exploring the cultural sources of support for pro-environmental attitudes and behaviours. The data is based on a national, representative sample survey fielded at the end of 2001 and the beginning of 2002. The questionnaire used was that designed for international comparative purposes by the *International Social Survey Programme (ISSP)* with some additional questions included for the population in the Republic of Ireland.

In order to bring about change, in this case to increase pro-environmental attitudes and practices, it is important to identify those core cultural values which underpin and support such practices. Some of the core values identified in this report include a set which emphasise the fragility of nature in the face of economic development and hence the need to protect it, as well as two socio-political values, one a sense of being empowered to act to protect the environment and in so doing to make a difference, the second an egalitarian socio-political perspective. The work of environmental policy makers wishing to further secure the environmental commitments of those already mobilised, as well as to increase a sense of environmental responsibility among others, is more likely to be successful when these cultural values are acknowledged and worked with in the promotion of sustainable development.

Three broad sets of cultural values are explored in order to investigate their relationship with pro-environmental attitudes and practices. These include respondents' support for the New Environmental

---

<sup>1</sup> *Trends in Irish Environmental Attitudes between 1993 and 2002. First Report of National Survey Data*, July 2003. Details of the sample survey, the questionnaire and data tables are provided in appendices to this report. Available: Department of Sociology, University College Dublin or [http://www.ucd.ie/environ/reports/environment\\_attitudes\\_report.pdf](http://www.ucd.ie/environ/reports/environment_attitudes_report.pdf).

Paradigm in which subscribers see nature as fragile and in need of care and protection especially given the potential ravages of economic growth; a second is the extent of commitment to a Post Materialist perspective; while a third, drawing on the Cultural Values Paradigm, identifies two further value sources - egalitarianism and a sense of empowerment. The extent to which socio-demographic variables might help to explain differences in environmental attitudes and behaviours is also explored.

The report begins by analysing a range of perceptions and attitudes among Irish respondents regarding environmental dangers, willingness to pay to protect the environment, and concerns regarding waste disposal. It continues by examining three sets of pro-environmental practices, that of sorting waste and cutting back on car driving, while also examining the prevalence of active mobilisation on behalf of the environment by such practices as membership or support of environmental organisations. It then proceeds to examine the extent to which the three sets of broader cultural values noted above were found to mobilise support for those perceptions and practices which contribute to protecting the environment.

### **Differing Environmental Attitudes**

Respondents perceive a variety of threats to the environment. The evidence suggests that Irish respondents are deeply concerned about such threats. In particular, they are convinced about the dangers posed to the environment by nuclear power stations, water pollution, air pollution caused both by cars and industry, the 'greenhouse effect', and the use of pesticides and chemicals in farming. In the case of each of these, less than ten percent of respondents believe that they are 'not very dangerous' or 'not dangerous at all' for the environment.

How willing are they to pay for protecting the environment? There is a greater willingness to pay higher prices (53 percent) than pay higher taxes (34 percent). On the question of environmental efficacy, there is an almost even divide between those who feel their pro-environmental actions can make a difference and those who do not. Combined with the relatively low level of environmental efficacy is a sense that some major and powerful institutions cannot be trusted to provide accurate information about pollution. Thus only a quarter of respondents state that their trust in the government to provide them with such correct information is strong, and less than ten percent of respondents report a strong sense of trust in business and industry.

With regard to waste disposal, large majorities agree with the idea of paying 'more in order to recycle waste', and believe that the original manufacturer of the product should be responsible for recycling it. While recycling is thus the preferred option, there is, nonetheless, some support at a general level for both incineration and landfills. This is despite some high profile campaigns by local communities against the siting of both. The percentage of respondents who agree that 'using incinerators is the best way to dispose of waste' (40 percent) is slightly greater than the percentage who disagree with this statement. The development of new landfills meets with very slightly more approval than incinerators, 43 percent agreeing that 'new landfill sites should be developed to dispose of waste'. There would thus appear to be no definite preferences or indicators of widely acceptable solutions to the waste disposal problem.

### **Differing Environmental Behaviours**

The survey evidence suggests that recycling facilities are now perceived as being more widely available, with less than ten percent of respondents reporting that no such facilities are available where they live. Where they are available, almost three-quarters of the respondents claim that they at least sometimes sort through glass, tins, plastic and newspapers. However, despite the fact that half of the respondents believe that air pollution caused by cars is dangerous for the environment, few are willing to cut back on their car use for environmental reasons. The majority of those who use a car report that they have never cut back on using it for environmental reasons, with about a third reporting that they have sometimes done so.

Respondents were also asked about their activities to promote the environment as a social and political issue. It is quite clear from the data that few Irish people are actively involved in the more direct forms of environmental engagement. Only a tiny percentage of respondents (4 percent) report that they are members of an environmental group and a similarly small percentage of respondents (5 percent) claim to have protested about an environmental issue. There appears, however, to be a greater willingness among at least a fifth of Irish people to provide support to those who are involved in these more direct forms of action. A quarter of respondents has signed a petition, while one in five has given money to an environmental group. Of those who report either giving money to an environmental group or signing a petition, just over forty percent claim they do both. So, while there appears to be a reluctance to take an active part, notable minorities of people are willing to provide support, at least at arm's-length.

## **Socio-Demographic Explanations**

Of the various socio-demographic variables considered (gender, age, education, residence, religious attendance, social class, income and employment in the public sector), education proves to be the most powerful predictor of pro-environmental attitudes, with high incomes and social class also predictive in this direction. However, in Ireland as elsewhere, socio-demographic variables, even when bundled together, explain relatively little (generally less than ten percent) of the variance in environmental attitudes and behaviours.

## **Cultural Sources of Differing Environmental Attitudes and Behaviours**

The study explores whether broader sets of cultural values might be identified which could be shown to contribute to increased levels of environmental concerns and practices. As noted above, three theoretical models are examined to investigate the extent to which they help in understanding the cultural values underpinning environmental attitudes and behaviours.

The first, the New Environmental Paradigm (NEP), examines a set of broad cultural values regarding perceptions of nature, the environment and socio-economic change. It proposes that there has been increasing concern in developed western societies regarding the impact of economic development on what is seen as a fragile environment and a nature that needs care rather than reckless exploitation and domination. The basis for this perspective may be entirely instrumental and anthropocentric – we need to protect or carefully use natural resources in order to facilitate future development and for the sake of future generations, or its basis may be biocentric, emphasising the need to protect the environment for its own sake. The NEP measure used does not differentiate between these two reasons. However the fourth report in this research series, *Environmental Discourses Articulated by the Public*, based on discussions with 22 focus groups, explores the question in greater detail. In the survey research being reported here, in Ireland, as in other countries, the great majority is favourably disposed towards a New Environmental Paradigm view. Those most strongly supportive are the young and those with a higher level of education. Strong NEP supporters are more likely than others to express concern about environmental risks and dangers and to be willing to pay for protecting the environment. They have a sense of environmental efficacy – that their actions on behalf of the environment can have a significant effect, they trust the information on pollution provided by environmental groups, and they are more likely than others to give money and sign petitions to promote environmental issues. They have a

strong preference for recycling – and are more likely to recycle and cut back on driving than other groups. They have a strong dislike of landfill and incineration. Certainly the NEP would appear to be a major cultural value system around which pro-environmental sentiment and practices are mobilising.

The Post Materialist perspective proposes that post-war affluence in much of the developed world combined with a relative absence of war has had a profound effect on a wide range of public attitudes, including a shift away from materialist concerns towards more post materialist values. However this set of values has not been found, in general, to be statistically significant in explaining differences in environmental perceptions, attitudes and behaviour in Ireland.

This is not the case with regard to the Cultural Values paradigm. The values which are explored using this perspective are broad socio-political cultural values. Two such values are found to be related to pro-environmental sentiments and practices in Ireland: an egalitarian commitment and a sense of efficacy or empowerment. Although the amount of variance explained is relatively small, a consistent pattern emerges, and is in the direction that Cultural Theory would lead us to expect. Thus a strong sense of egalitarianism and an approval of collective political action to redistribute income more equitably are related to heightened concerns regarding a whole range of environmental threats. However, for egalitarians, trust in government departments to provide accurate information about pollution and thus about these threats is low. Furthermore, when there is a strong commitment to equality, combined with a tendency to be critical of authority, as well as a sense of socio-political efficacy, giving what cultural theorists call a strong ‘egalitarian cultural bias’, there tends to be a high level of trust in the information provided by environmental groups. Noting a similar pattern in other countries, some cultural theorists have argued that environmentalism can be interpreted as an important cultural and symbolic resource which egalitarians use to criticise those powerful institutions which they see as supporters of an inequitable and unjust society.

Regarding empowerment, a questioning attitude to authority and a strong sense of personal and political efficacy are also found to contribute to pro-environmental mobilisation, including an increased willingness to pay for protecting the environment, to practice recycling, to cut back on driving, and to support environmental activism by giving money to environmental groups and signing petitions. These themes will be further explored in the fifth report of The Research Programme on Environmental Attitudes and Behaviour in Ireland, *The Making of Environmental Activists*, which will report on qualitative interviews with environmental activists.

## **Conclusion**

While concern regarding environmental dangers is quite strong among the Irish population, pro-environmental practices are weaker. This is also apparent from the comparative analysis of the Irish survey data relative to the attitudes and practices in other European countries, the results of which are presented in the third report, *Environmental Attitudes and Behaviours: Ireland in Comparative European Perspective*. This second report has explored some of the cultural reasons for this, identifying three sets of broadly based cultural values which contribute to mobilising pro-environmental attitudes and behaviours. One is a set of values called the New Environmental Paradigm, in which there is concern for the fragility of nature and its need for protection, particularly from possible over-exploitation and destruction due to rapid economic and social change. The second and third sets of cultural values, namely egalitarianism and a sense of empowerment, were identified through an analysis of the Cultural Values paradigm. Egalitarianism expresses a rejection of society's unequal structures and the need for collective political efforts to change these. The third is a set of values around empowerment including a sense of efficacy in bringing about change and criticism of authoritarian hierarchical structures. Both egalitarianism and a sense of empowerment contribute to the mobilisation of attitudes and practices to protect the environment. This report has thus identified and discussed some of the core cultural values with which environmental policy makers must work if they are to successfully bring about those attitudinal and behavioural changes supportive of sustainable development.

## Chapter 1

### Environment Values, Attitudes and Behaviours in Ireland: An Introduction

#### 1.1 Introduction

In Ireland, individuals differ not only in terms of how they treat the environment but also in terms of how they think about the environment. Some people are more concerned about the environment than others; some are more willing to act in a pro-environmental manner than others. While these differences between people's attitudes and behaviours are interesting in and of themselves, the purpose of this report is to explain these differences. In order to do so we consider three theoretical explanations of environmental attitudes and behaviours. Each of the three theories purports to identify a set of values or worldviews that influence the views that people have of the environment and their willingness to act in a pro-environmental manner. Scholars have also attempted to explain environmental attitudes and behaviour in terms of social and demographic variables, as well as from particular theoretical perspectives. In general, the former have not fared well while the latter have been found to offer more explanatory power. Three such theoretical perspectives are explored here (the effects of socio-demographic variables will also be taken into account). The first is the New Environmental Paradigm as proposed and developed by Dunlap and Van Liere (1978), the second is Inglehart's (1977, 1990, 1997) post-material thesis, and the third is what is referred to either as Cultural Theory or Grid-Group Theory (Douglas, 1970 and 1982; Douglas and Wildavsky, 1982; Wildavsky, 1987; Thompson, Ellis and Wildavsky, 1990). The first two were drawn upon and tested for their explanatory power in the earlier ISSP Environmental module fielded in 1993. The third was included for the first time in this module and fielded in Ireland as an optional exploratory model. This report provides an empirical analysis of these theoretical perspectives and a comparison of their relative merits in explaining environmental attitudes and behaviours. These models are explored in order to investigate the broader cultural sources of support on which pro-environmental attitudes and behaviours may draw.

This report is the second report to emanate from the *Research Programme on Environmental Attitudes, Values and Behaviour in Ireland*.<sup>2</sup> The purpose of this report is the systematic exploration of the values,

---

<sup>2</sup> The first report, Trends in Irish Environmental Attitudes between 1993 and 2002, First Report of National Survey Data, July 2003 examined changes in environmental attitudes over the 1990s, comparing findings from the 1993 ISSP Environmental survey and those of 2001/02. Details of sample survey, the questionnaire and data tables are provided in appendices to this report. ([http://www.ucd.ie/environ/reports/environment\\_attitudes\\_report.pdf](http://www.ucd.ie/environ/reports/environment_attitudes_report.pdf)).

attitudes and behaviour of Irish people in relation to the environment and the cultural sources of support on which they draw. The values, attitudes and behaviour of the adult Irish population are examined using a large-scale representative sample survey. The questionnaire used is a comparative international survey developed by the *International Social Survey Programme* (ISSP). The ISSP module was designed in the context of international theoretical, empirical and methodological literature on environmentalism. In Ireland, the ISSP Environment module was carried as part of the *Irish Social and Political Attitudes Survey* (ISPAS), and was fielded at the end of 2001 and beginning of 2002. Furthermore, it should also be noted that in Ireland, the ISSP module was supplemented by additional environmental items carried in a 'self-completion module' of ISPAS.

The first report considered how Irish environmental attitudes have changed since 1993, while the next report will place Irish attitudes in a comparative international context. This second report focuses on explaining these Irish values, attitudes and behaviours. The research is important because, in order to increase individual environmental responsibility and to move towards sustainable development, it is necessary to understand perceptions and behaviour in relation to the environment. The Environmental RTDI Programme (B/8/2001) called for research that would provide a 'better understanding of the realities and facts determining responses to environmental and quality of life issues'. Such an understanding will, in the long term, be critical in the effective implementation of national and European Union policies on the environment.

In this report we first describe people's attitudes towards the environment and their pro-environmental behaviours. With regard to attitudes to the environment we consider the levels of concern people have for the environment, their willingness to take on extra costs in order to protect the environment, their sense of efficacy in dealing with environmental problems, their trust in various institutions as sources of information about the causes of pollution and their attitudes to dealing with waste. In terms of behaviours we describe respondents' self-reported behaviour in terms of recycling and cutting back on car usage in order to protect the environment, as well as their actions in terms of trying to influence policy (either indirectly through signing petitions or donating money, or more directly through the membership of an environmental group or taking part in a protest or demonstration). This is then followed by an examination of the relationship between these attitudes and behaviours and broader socio-political and environmental values and worldviews.



## 1.2 Explaining Environmental Attitudes and Behaviour

The purpose of this report is to explore why individuals hold different environmental attitudes and why they behave differently from one another. For instance, why do some people perceive air pollution caused by cars as dangerous for the environment while others do not perceive any danger, and why some people recycle while others do not? In addressing these questions we consider three theoretical models of environmental attitudes and behaviour. Each of these theoretical models argues that there is a set of underlying cultural values or worldviews held by the individual respondents that may influence their attitudes and actions. Schwartz (1992, p.1) defines values as 'the criteria people use to select and justify actions and to evaluate people (including the self) and events'. Worldviews are somewhat less general; where values are seen as referring to broad dispositions or orientations, worldviews are held to refer to a specific domain of life, such as the environment, and may be the result of political and social experiences in the larger world.<sup>3</sup> (Stern et al, 1995, pp726-727)

Our aim is thus to examine if respondents' attitudes and behaviours are indeed related to these broader values or worldviews, and whether or not these theories help us to understand differences between people in terms of their attitudes and behaviour. Each of the models argues that there is consistency between the values and worldviews of individuals regarding society and how it operates (or should operate) and their attitudes and behaviour regarding the environment. The ISSP Environmental module, as well as the literature on environmental values, attitudes and behaviours, propose a variety of survey items or questions that can be used to identify those underlying values and worldviews that are intended to explain attitudes and behaviours.

### 1.2.1 New Environmental Paradigm

The first theoretical framework that we consider is what Dunlap and Van Liere (1978) refer to as the New Environmental Paradigm. This theory proposes that there is a growing public consciousness of, and concern about, the environment, awareness of the environmental destructiveness of economic growth, criticism of scientific and technological progress, and an assertion as to the fragility of nature. As such, it questions the perspective that favours economic growth and the scientific and technological ethos that underpins it. The New Environmental Paradigm has been explored by Dunlap in the USA, from the 1970s through to the 1990s, using survey evidence, and was also included in the 1993 ISSP Environmental module.

---

<sup>3</sup> For an extensive review of what is meant by values in the social science, social psychological and political science literatures, and the difficulties involved in arriving at a definition see van Deth and Scarbrough (1995).

This new environmental consciousness links beliefs about a wide range of subjects including the relationship between humanity and nature, the importance of economic growth, and the value of technology: human needs and values should no longer be of greater concern than those of nature. (Dalton and Rohrschneider, 1998) By the late 1970s Dunlap and Van Liere, using survey research in the USA, were able to identify this new set of values and attitudes. These new ideas, such as 'limits of growth', 'balance of nature' and more bio-centric concerns challenged the dominant outlook that favours economic growth and scientific and technological perspectives. The NEP proposes that less emphasis should be placed on economic growth and a more sceptical attitude should be taken towards science and technology. There is also a realisation that many of the resources available on the planet are limited and people's expectations ought to adjust to reflect this reality. (Dalton and Rohrschneider, 1998) It is expected that those who regard nature as fragile, limited and in need of our care and attention will be more likely to have attitudes and behaviours that are more pro-environmental than their counterparts. The questions that we pose are, can such a cultural paradigm be identified in Ireland, and if so, does it offer a cultural source of support for pro-environmental attitudes and behaviours?

### *1.2.2 Post-Materialism*

This second theoretical framework draws upon the work of Inglehart who argues that post-war affluence in much of the developed world, combined with a relative absence of war, has had a profound effect on a wide range of public attitudes. Inglehart (1981, p.886) expects that there will be a 'significant watershed' in terms of values and attitudes between the pre-war and post-war generations. Since the Second World War, the formative years of younger generations in the western developed world have been ones of increased economic and physical security. These groups are expected to be more post-materialist than older generations. Inglehart argues that there has been a shift away from the materialist concerns of pre-industrial and industrial societies (that is, support for the established order through the maintenance of law and order and the preservation of economic gains) towards post-materialist values (that is, greater emphasis on individual self-expression, greater participation in decision-making, freedom and quality of life). (Inglehart, 1977, p.182; Inglehart, 1984; Inglehart et al, 1994, p.336; Poguntke, 1987, p.77; Muller-Rommel, 1989, pp115-116; Dalton, 1996, p.153) The ambitions and priorities of younger generations, for themselves and their societies, are expected to be different because unlike earlier generations they could take relative economic well-being and physical security for granted. In order to examine the emergence of these new attitudes and values in advanced industrial society, Inglehart proposes a generational theory. The basic expectation of post-materialist theory is that each successively younger post-war cohort is more post-materialist than its predecessor. It

is expected that those who were born before the Second World War will have a different set of attitudes and values from those who were born after the war. The latter group's attitudes and values will have been shaped by their experience of affluence and relative peace during their formative years.

Inglehart (1990, 1997) and Dalton (1994) argue that environmentalism is a consequence of socio-economic progress in advanced industrial democracies. Dalton and Rohrschneider (1998, pp102-103) note that from the point of view of this theoretical framework, 'the rise of environmentalism primarily reflects a change in the political orientations of the public, rather than changes in the environment'. The attitudes and values of those born after the Second World War have been shaped by the experience of economic well-being and physical security. This enables them to focus upon less material issues such as the environment. As people become more concerned about their quality of life, and less concerned about advancing their material welfare, they are expected to be more concerned about the impact of industrialisation and its effect on the environment. Inglehart (1990, p.56) states that one consequence of the shift from Materialist priorities to Post-Materialist goals 'has been a diminishing emphasis on economic growth in these societies, together with increasing emphasis on environmental protection and preserving the quality of life – if necessary, even at the expense of economic growth... Post-Materialists place more emphasis on protecting the environment and are far more likely to be active members of environmental organizations that are Materialists'. This report will examine whether or not the same can be said about those who hold Post-Materialist values in Ireland.

### *1.2.3 Cultural Theory/Grid-Group Theory*

The third and final theoretical perspective that we consider is alternatively labelled Cultural Theory or Grid-Group Theory and has been developed since the 1970s, initially by Douglas (1970 and 1982), then in co-operation with Wildavsky (Douglas and Wildavsky, 1982). This is a theory of social relations and cultural preferences. Two central aspects of social relationships are explored: the grid dimension (which focuses on restrictions on individual behaviour and the extent of acceptance of rules and regulations and is sometimes referred to as the 'legitimation of external prescription'<sup>4</sup>) and the group dimension of social relations (the extent of a sense of responsibility and commitment that individuals have to units greater than themselves and the extent to which they are incorporated into these units). (Grendstad, 2003; Vaughan, 2002; Coughlin and Lockhart, 1998) However, it is only in the 1990s that Cultural Theory or Grid-Group Theory has begun to be tested empirically using quantitative studies. (Thompson et al, 1990; Coughlin and Lockhart, 1998; Ellis and Thompson, 1997; Grendstad, 2000, 2003)

---

<sup>4</sup> Legitimacy of external prescription refers to the varying ease with which persons accept another person's judgements are valid for, and binding on, them. (Coughlin and Lockhart, 1998, p.35)

The interrelationship of these two dimensions gives rise to a typology of four cultural biases, or as Ellis and Thompson (1997, p.885) state Grid-Group Theory 'posits four basic ways of organizing and justifying social and political life':

- *Hierarchy*: characterised by strong group boundaries and strong role prescription;
- *Egalitarian*: also characterised by strong group boundaries but weak role prescription;
- *Individualism*: is characterised by weak group boundaries and weak role prescription; while
- *Fatalism*: is characterised by weak group boundaries but strong role prescription.

The theory argues that each of these ways of organising social life has a related cultural bias, which operates to justify this particular mode of social organisation. Each of these cultural biases includes ideas about nature, the human-nature relationship and appropriate ways of relating to the environment. For Grendstad (2003, p.3) each of the four cultural biases may be seen as a 'justification', which he defines as 'the social logic whereby individuals maintain their views and actions and make themselves accountable to others'. In contemporary complex societies, all four sets of cultural biases may be available, with the possibility of actors choosing one set in preference to others.

The first cultural bias is *hierarchy* and is characterised by strong group boundaries and strict role prescriptions. The cultural bias here is towards a strong sense of commitment or responsibility for the group, incorporation into it and an acceptance of its rules and regulations. There is a preference for hierarchical and highly specified social relations, which in contemporary, advanced capitalist societies may translate into a high level of acceptance of a bureaucratic and centralised form of administration. In such societies there is a high level of trust in experts and a willingness to leave decisions to the authorities. It is assumed that once authority and the requisite social relationships are maintained, the order and the proper continuance of society will be assured. Those who adopt this view believe that society as a whole will benefit from 'rules, regulations and tight role definitions, handed down from previous generations or elaborated by certified experts'. (Grendstad, 2003, p.3) Deviance from these rules, regulations and role definitions only serves to threaten the hierarchical order and undermine the ability of society to provide the best for all. (Grendstad, 2003, p.3) The theory argues that perspectives regarding the natural world and how to relate to it tend to be consistent with this bias towards the acceptance of hierarchical relationships and a sense of responsibility and commitment to the group as a whole. Thus there is a sense of responsibility towards nature and its protection, while environmental risks are assessed, regulated and managed by experts. Those who adopt a hierarchical bias see nature as

tolerant of change, but only within given limits; once established procedures 'are unheeded and limits transgressed, the system will collapse'. (Grendstad, 2000, p.219; see also Steg and Sievers, 2000)

The second cultural bias is *egalitarian* and is characterised by a strong sense of group boundaries but a weak sense of role prescriptions. The cultural bias is towards a strong commitment to, and a sense of responsibility for, the group, but with a questioning of its rules and regulations regarding roles. There is strong criticism of hierarchies, bureaucracies and a questioning of experts. People who use an egalitarian justification feel that 'the natural harmony innate in all human beings' is being obstructed by unjust distribution of wealth, role differentiation and oppression. (Grendstad, 2003, p.3) Again, the theory argues that there is a consistency (or Weber might say 'elective affinity') between the cultural bias towards egalitarian relationships, which sees humanity as potentially in harmony but threatened by hierarchical and other forces, and attitudes to nature. Thus with regard to the environment, those who adopt an egalitarian justification also see nature as being in harmony, but this harmony is precariously balanced and threatened. That the environment is so precariously balanced is a consequence of its ephemeral and fragile state and with depleting resources 'the least jolt may generate catastrophic and irreversible outcomes'. (Grendstad, 2000, p.219; Steg and Sievers, 2000, p.254) The environment's fragility means that it is in need of protection from the risks taken by society, in particular society as characterised by big business, government bureaucracies and scientific experts who exploit nature and threaten its fragile balance. The theory argues that those who express a strongly egalitarian bias will be concerned about the state of the environment and are expected to act in a manner that protects it.

The cultural bias of *individualism* is characterised by a weaker sense of responsibility for the wider group or society as well as weak acceptance of regulations. The social and cultural preferences of an individualist bias are for a weak sense of commitment to the group, for low-group boundaries, and for weak role prescriptions. For them the social world is boundless. They not only support self-regulation and market freedom, but also seek 'to minimize authority other than that which is needed to guarantee the functioning of markets of any kind'. (Grendstad, 2003, p.3) With regard to the environment, those who adopt an individualistic justification regard nature as robust, benign and stable. Even if the environment is over exploited it will heal either through its own abundant resources or the skills of science, technology and market forces. The environment is capable of recovering from any external shock and this implies that it is 'an exploitable, skill-controlled cornucopia'. (Grendstad, 2000, p.219; Steg and Sievers, 2000, p.254)

The fourth and final cultural bias is *fatalism* and is characterised by strong role prescriptions, usually enforced by others, but by weak involvement in the group. The cultural bias is pessimistic with little sense of political or social efficacy, and the world is seen as operating 'without rhyme or reason and man is fickle'. (Grendstad, 2003, p.3) For those who adopt a fatalistic justification, nature is seen as capricious, unpredictable and characterised by chance. In their view, neither needs nor resources are controllable, and they regard environmental risk as: what you don't know, can't harm you. (Steg and Sievers, 2000, p.254) Dealing with environmental problems is one of simply coping, 'physical nature is therefore a lottery-controlled cornucopia'. (Grendstad, 2000, p.219)

This report examines the extent to which robust indices and scales can be identified regarding each of these cultural biases given the data available in the ISSP Environmental module. However, having noted the difficulties encountered in doing this, we examine the two dimensions, Grid and Group, independently. We find a certain theoretical and empirical potency in doing this in terms of exploring further the cultural sources of support for pro-environmental attitudes and behaviours in Ireland.

#### *1.2.4 Socio-Demographic Variables*

Faughnan and McCabe (1998) who analysed the 1993 ISSP Environmental module for Ireland found that support for the environment was higher among younger respondents, those with relatively large personal incomes and those with higher levels of educational attainment, than their counterparts. These socio-demographic factors also correlated with levels of environmental knowledge and pro-environment consumer behaviour. Research in the USA has shown that younger adults, the well educated, political liberals, those voting Democrat, those employed outside the primary industries, and those raised and living in urban areas are consistently more supportive of environmental protection than their respective counterparts. On the other hand, race, gender, family income and occupational prestige have been found to be relatively poor predictors. However, when all of these variables are taken together they explain only about ten percent of the variance in environmental concern. (Jones and Dunlap, 1992, p.39) Dietz et al (1998), who analysed the 1993 ISSP data for the USA, also found that age, education, gender, race, liberalism and denomination again explained only a small percentage of the variance in pro-environmental attitudes and behaviours.

The overall low level of variance explained by demographic factors has spurred a continued drive to develop more robust and powerful explanatory models. When Dietz et al (1998) using data from the 1993 General Social Survey included general worldviews, or value-dimensions, such as post-materialism and beliefs related to the New Environmental Paradigm, in their model, they found that

these value-dimensions explained more of the variance than the social structural variables. Likewise, Ellis and Thompson (1997) in their study located in the Pacific Northwest of USA found that the Grid-Group variables of egalitarianism and individualism explained the greatest amount of variance in environmental attitudes.

### **1.3 Environmental Attitudes and Behaviour**

Attitudes towards the environment and environmental friendly behaviours vary tremendously within Ireland (in the next *Research Programme on Environmental Attitudes, Values and Behaviour* report we consider how these attitudes and behaviours vary across countries). Attitudes differ from values and worldviews in that they refer to a specific person, object, idea or action, while values are seen as the criteria that people use to evaluate people and events and justify actions. (Schwartz, 1992) Bagozzi et al (2002, p.170) define an attitude as ‘a psychological tendency to respond evaluatively to persons, physical objects, ideas or actions in favourable or unfavourable ways’.

The first set of attitudes that we consider in this report is ‘perceptions of danger to the environment’. In the ISSP Environment module respondents were asked how dangerous seven different ‘items’ were for the environment. The seven items capture a wide variety of environmental threats: air pollution caused by cars and industry; pesticides and chemicals used in farming; pollution of Ireland’s rivers, streams and lakes; rising world temperatures caused by the ‘greenhouse effect’; modifying the genes of certain crops; and nuclear power stations.

The second set of attitudes to the environment that we consider is the willingness of respondents to take on extra costs to protect the environment. While people may wish to protect the environment, this is not a costless goal. Witherspoon (1996) reports that in most countries environmental concern is substantially higher than environmental action. The ISSP Environment module includes items designed to gauge the willingness of respondents to make sacrifices for the sake of the environment: respondents’ willingness to pay higher prices and taxes as well as their willingness to accept cuts in their standards of living in order to protect the environment. These questions explicitly highlight the link between support for environmental protection and the associated costs involved. (Young, 1990; Dalton and Rohrschneider, 1998)

A third set of attitudes relates to how 'efficacious' respondents feel in dealing with environmental problems. Here respondents are asked whether or not they feel it is worth putting in the effort to look after the environment. While respondents are asked about the impact that they themselves, as individuals, can have on environmental problems, respondents are also asked about the impact that they feel they can have if they pull together as a group. The next set of environmental attitudes that we consider are respondents' attitudes to various sources of information about the environment. Both the NEP and Post-Materialism suggest that the public is increasingly sceptical about the validity of different sources of information. In order to examine this, respondents are asked how much trust they have in business and industry, environmental groups, government departments, newspapers, radio or TV programmes and university research centres to give correct information about the causes of pollution. Finally, in addition to the items carried in the ISSP Environment module, four items dealing with waste were asked in the self-completion module of the ISPAS. Two of these items dealt with recycling while the other two addressed the issues of incinerators and landfill.

Of course we are not simply interested in exploring what people think about various aspects of the environment, we are also concerned with understanding their behaviours, that is, what they do. In this report 'behaviour' refers to the reported actions of individual respondents. The first set of actions that we consider are whether or not respondents report sorting household waste for recycling and cutting back on car usage in order to protect the environment. The second set of behavioural items refers to the reported actions of respondents targeted at policy makers. There is a wide span of activities considered, from indirect action such as petition signing and giving money to environmental groups, to more direct forms of action, including joining a group whose main aim is to preserve or protect the environment as well as participating in protests or demonstrations on environmental issues.

#### **1.4 Summary**

The aim of this report is to examine whether or not the three theoretical frameworks considered in this project help us understand why Irish people have differing attitudes to the environment and why some behave in more environmentally friendly ways than others. In Chapters 3-5, drawing upon the ISSP data set, we consider the extent to which the New Environmental Paradigm, Post-Materialism and Grid-Group dimensions of the Cultural Values paradigm can be identified in Ireland. Furthermore, having been identified, can these be related to pro-environmental attitudes and behaviours, and hence, can they be seen as offering broad cultural support for environmentalist orientations? In Chapter 6 we compare



the extent to which each of these three theories, along with socio-demographic variables, explain the variance in Irish people's attitudes and behaviour to the environment, and hence their comparative explanatory potency in the Irish context. However, firstly we need to outline these differences in attitudes and behaviours and related demographic patterns.



## **Chapter 2**

### **Environmental Attitudes and Behaviours**

#### **2.1 Introduction**

The aim of this chapter is to outline those environmental attitudes and behaviours that form the focus of our attention over the next few chapters. In so doing we will describe the responses of Irish people when asked about their concerns regarding threats to the environment, who they trust as sources of information about the causes of pollution, what they are willing to do to protect the environment, how they think waste should be dealt with and what they themselves actually do. The purpose here is to firstly, outline the differences in responses: some people are more concerned about the environment than others; some are more active in promoting the environment as a social and political issue than others. In all we will consider ten sets of environmental attitudes and six environmental behaviours. Secondly, we will consider a variety of socio-demographic variables and how they help us to understand people's environmental attitudes and behaviours. These socio-demographic variables describe respondents in a variety of social contexts, such as, gender, social class, levels of formal education and so on.

#### **2.2 Environmental Attitudes**

##### *2.2.1 Perceptions of Environmental Dangers*

Beliefs about environmental risks are an important aspect of environmental research. Prescott-Clarke and Hedges (1987) have found that rather than being concerned about the environment in general, concern is often triggered by particular subject matters, such as nuclear power. In the ISSP Environment module respondents were asked how dangerous seven different items are for the environment. As is evident from Table 2.1, Irish respondents see threats to the environment from a wide variety of sources.

Despite the fact that there are no nuclear power stations in Ireland, the long running concerns over Sellafield are reflected by a large majority of Irish people regarding nuclear power stations as being either extremely or very dangerous for the environment. With regard to the other items, the percentages regarding these items as either extremely or very dangerous for the environment range from 49 percent

to 65 percent. What is perhaps most interesting is that Irish respondents are convinced about the dangers posed to the environment by nuclear power stations, water pollution, air pollution caused both by cars and industry, the ‘greenhouse effect’ and the use of pesticides and chemicals in farming. For each of these items less than ten percent of respondents believe that they are ‘not very dangerous’ or ‘not dangerous at all’ for the environment.

Since Irish people express concern about the dangers posed to the environment from a variety of threats, we have decided to combine these seven items into a single scale. Before doing so, we use Principal Component Factor Analysis to examine the suitability of these items for such a scale.<sup>5</sup> All seven items load quite highly on a single component and the scale is quite reliable (it has a Cronbach’s Alpha that is greater than 0.70). This implies that these seven items do indeed combine to form a single, internally consistent measure of concern for the environment. (see Table A2.1 in the *Appendix 2*).

*Table 2.1: Distribution of Responses on the Perceptions of Dangers to the Environment Items (%)*

	Dangerous	Not Dangerous	N
Nuclear power stations for the environment (e22) <sup>6</sup>	80.0	2.0	1216
Pollution of Ireland’s rivers, lakes and streams for the environment (e9c)	65.1	4.3	1222
Air pollution caused by industry for the environment (e9a)	59.8	4.7	1215
Rise in the world’s temperature caused by the ‘greenhouse effect’ (global warming) for the environment (e10a)	54.1	7.6	1163
Pesticides and chemicals used in farming for the environment (e9b)	52.5	6.9	1218
Air pollution caused by cars for the environment (e8a)	50.2	7.9	1215
Modifying the genes of certain crops for the environment (e10b)	48.6	11.9	1081

Note: ‘Dangerous’ combines ‘extremely dangerous for the environment’ and ‘very dangerous’ while ‘Not Dangerous’ combines ‘not very dangerous’ and ‘not dangerous at all for the environment’. The difference between the sum of the above percentages and 100 is equal to the percentage of respondents who opted for ‘somewhat dangerous’, the middle category of the five-point items.

<sup>5</sup> Principal Component Factor Analysis allows us to examine the dimensionality of the items that have been proposed as forming a scale. The purpose of this type of analysis is firstly, to identify the number of factors that best represent the items used in the analysis; and secondly, to interpret the factors that are revealed. The basic idea behind factor analysis is to reduce a number of items to a smaller number of underlying groups of items called factors. These factors can be indicators of separate ‘constructs’ or ‘values’, or of different aspects of a single heterogeneous ‘construct’ or ‘value’. Factor analysis works by grouping together those items that correlate, or covary, with each other. The basic idea is that those items that correlated relatively highly with one another on a particular factor are assumed to reflect the same construct and those that correlate together relatively low are assumed to reflect other constructs. A single construct is assumed to have been revealed when a single factor is produced on which all of the items included in the analysis correlate strongly with one another. (Kim and Muller, 1994a and 1994b)

<sup>6</sup> Item number in the questionnaire: ‘e’ refers to the ISSP Environment Module (a copy of which is available in the first report); ‘a’ refers to the ISPAS core module and ‘q’ refers to the self-completion module both of which are available in this report (see *Appendix 1*).

### 2.2.2 Willingness to take on costs of protecting the environment

People may be concerned about the environment but protecting the environment is not a costless goal. Here we consider the willingness of respondents to take on extra costs, in terms of higher prices and taxes, and cuts in their standard of living. The items used establish the link between support for protecting the environment and the associated costs involved. Among Irish respondents, the evidence presented in Table 2.2 suggests that there is a difference in their willingness to take on particular types of costs, most notably between ‘higher prices’ and ‘higher tax’. In order to protect the environment, more than half of Irish respondents are willing to pay higher prices. However, their willingness to take on extra costs in order to protect the environment wilts when it comes to paying higher taxes or accepting cuts in their standard of living. As is evident from Table 2.2, the percentage of people who are ‘unwilling’ to take on higher taxes and cuts in living standards is greater than the percentage of those who are ‘willing’ to do so.

*Table 2.2: Distribution of Responses on the Willingness to Take on Extra Costs in Order to Protect the Environment Items (%)*

	Willing	Unwilling	N
Pay much higher <u>prices</u> in order to protect the environment (e5_1)	53.3	32.2	1197
Accept cuts in standard of living in order to protect the environment (e5_3)	35.1	48.1	1196
Pay much higher <u>taxes</u> in order to protect the environment (e5_2)	34.1	51.6	1182

Note: ‘Willing’ combines ‘very willing’ and ‘fairly willing’ while ‘unwilling’ combines ‘fairly unwilling’ and ‘very unwilling’.

One reason for this difference would appear to lie in how these costs are to be imposed. When it comes to paying higher prices it is up to the individual respondent as to whether or not they take on such costs. In buying the weekly shopping, if the customer is willing to pay extra for organically produced food, then the option is available to them. However, if the customer is not willing to pay more, alternative less expensive products are available for them to purchase. This is not so when it comes to paying higher taxes. The problem that higher taxes pose for the individual, and in particular consumption taxes, is that they are imposed on all regardless of income, that is, the element of choice is removed. Such a view is supported by the unwillingness of respondents to accept cuts in their standard of living. Respondents may be willing to take on extra costs to protect the environment but not if it undermines their standard of living. When it comes to taking on extra costs to protect the environment, the evidence suggests that Irish respondents are only willing to do so if the choice is left to the individual. In later analyses, we treat these items together on one attitudinal scale. Table A2.2 in the *Appendix 2* reports the results of a Principal Component Factor Analysis of the three items and it is evident that there is a strong relationship between individuals’ attitudes to each of the items, creating a ‘willingness to take on costs’ scale.

### 2.2.3 Environmental Efficacy

The next set of attitudes that we examine tap a general sense that respondents have about the ability of their actions to have an impact on an environmental problem, that is, ‘environmental efficacy’. Respondents are asked whether or not they feel their actions can make a difference. The evidence presented in Table 2.3 suggests that among Irish respondents there is a feeling that their actions can contribute towards protecting the environment. Almost sixty percent disagree with the notion that ‘it is too difficult for someone like me to do much about the environment’. However, respondents in Ireland are evenly divided over whether or not there is any point in trying to look after the environment if others do not do the same. While some feel that their own actions can have an impact, a similar percentage recognise the need for collective action. That is, they believe that action in consort with others is required if environmental problems are going to be dealt with. As with the above attitudes both of these items are used to construct a single measure of environmental efficacy (see Table A2.3 in Appendix 2).

*Table 2.3: Distribution of Responses on the Environmental Efficacy Items (%)*

	Agree	Disagree	N
There is no point in doing what I can for the environment unless others do the same (e6_4)	46.5	47.9	1230
It is just too difficult for someone like me to do much about the environment (e6_1)	33.6	58.9	1217

Note: ‘Agree’ combines ‘strongly agree’ and ‘agree’ while ‘Disagree’ combines ‘disagree’ and ‘strongly disagree’.

### 2.2.4 Trust in information sources

Irish people receive information about the causes of pollution from a variety of sources, but how much trust do people have in these sources of information to provide them with correct information about the causes of pollution? In Ireland, university research centres stand out as the most trusted source of information on the environment (see Table 2.4). The next most trusted source of information about the causes of pollution are environmental groups. With regard to the media, a larger percentage of Irish respondents have a greater sense of trust in broadcast media than they have in print media. Moreover, with regard to newspapers, the percentage of respondents who have a strong sense of trust is less than the percentage of respondents who have a weak sense of trust. When it comes to government departments, Irish people are undecided, as a similar percentage have a strong sense of trust as have a weak sense of trust. The least trusted source of information is ‘business and industry’. Less than 10 percent of respondents have a strong sense of trust in them to provide correct information. Those in business and industry have a lot of work to do if they are to develop a reputation among Irish people as a trustworthy source of information about the causes of pollution. In later analysis, only three sources of

information are considered in detail. Government departments, business and industry and environmental groups play important roles in the development of public policy with regard to the environment and decisions that affect the environment (e.g. the building of roads or the location of factories).

*Table 2.4: Distribution of Responses on the Trust as Source of Correct Information about the Causes of Pollution Items (%)*

	Strong Trust	Weak Trust	N
University Research Centres (e16_6)	72.5	4.8	1210
Environmental Groups (e16_2)	63.1	7.0	1210
Radio or TV Programmes (e16_5)	39.9	13.7	1220
Government Departments (e16_3)	25.6	26.3	1215
Newspapers (e16_4)	25.0	29.6	1219
Business and Industry (e16_1)	7.1	54.1	1200

Note: 'Trust' combines 'a great deal of trust' and 'quite a lot of trust' while 'Not Trust' combines 'not much trust' and 'hardly any trust'.

### 2.2.5 Dealing with waste

The final set of attitudes that we consider are related to how best to deal with waste. In the self-completion module of ISPAS (see *Appendix 1*), four different methods of dealing with waste were proposed. Two of these items dealt with recycling while the other two addressed incinerators and landfill. Interestingly, despite some very visible campaigns against the building of incinerators in Ireland, a slightly larger percentage of respondents agree that 'using incinerators is the best way to dispose of waste' than disagree. (see Table 2.5) Landfills are somewhat more popular than incinerators with 43 percent agreeing that 'new landfill sites should be developed to dispose of waste'. However, the percentages of people who agree with both of these methods are much smaller than those who favour recycling. Large majorities of people state that they are willing to 'pay more in order to recycle waste' and believe that the original manufacturer of a consumer product should be responsible for recycling it. Since it is likely that manufacturers would pass on the costs of such responsibilities in the form of higher prices, this fits quite neatly with respondents' willingness to pay higher prices in order to protect the environment.

*Table 2.5 Distributions of Responses on the Attitudes to Dealing with Waste Items (%)*

	Incinerators (q5_10)	Landfill (q5_12)	Pay to Recycle (q5_11)	Manufacturer should recycle (q5_13)
Agree	39.5	42.5	72.4	64.5
Disagree	34.1	35.4	15.1	18.4
N	1862	1868	1862	1866

## 2.3 Environmental Behaviours

Above it was noted that Irish respondents are optimistic about the effect of their own actions to protect the environment. Here we consider whether or not Irish people claim to act in a manner that protects the environment. As such we consider whether or not they have recycled, cut back on using their cars or sought to promote the environment as a social and political issue.

### 2.3.1 Recycling and Car Usage

The evidence presented in Table 2.6 suggests that most Irish people are recycling at least some of their waste but few have cut back on car use. Almost three-quarters of Irish respondents claim that they at least ‘sometimes’ sort through glass, tins, plastic and newspapers for recycling. Moreover, it is also evident that recycling is now widely available, as less than ten percent of respondents report that recycling is ‘not available’ where they live. Where recycling is available, the vast majority of people report that they use the available facilities at least ‘sometimes’. However, despite the fact that half of the respondents believe that air pollution caused by cars is dangerous for the environment, few are willing to cut back on their car use for environmental reasons. The vast majority of those who use a car report that they have never cut back on using it for environmental reasons. That said, of those who use a car, about a third report that they at least sometimes cut back on car use for environmental reasons.

*Table 2.6: Distribution of Responses on the Reported Environmental Behaviour Items (%)*

	Always	Often	Sometimes	Never	Not Available/ Can't Drive	N
Sort glass/tins/plastic/ newspapers for recycling (e17a)	26.3	22.5	26.4	17.6	7.1	1245
Cut back on driving a car for environmental reasons (e17b)	1.5	5.8	18.3	53.6	20.8	1243

Items: With regard to cutting back on car use ‘not available’ refers to ‘do not have or cannot drive a car’.

### 2.3.2 Promoting the environment as a social and political issue

Finally, we consider behaviour by respondents that is targeted at policy makers. There is a wide range of activities considered, from indirect action, such as petition signing and giving money to environmental groups over the past five years, to more direct forms of action, such as joining a group whose main aim is to preserve or protect the environment, to participating in protests or demonstrations. It is quite clear from Table 2.7, that Irish people are not actively involved in the more direct forms of activities. The percentage of respondents reporting that they are members of an environmental group is



very small. A similarly small percentage of respondents claim to have protested about an environmental issue. There appears, however, to be a greater willingness among at least a fifth of Irish people to provide support to others who are involved in these more direct forms of action. Amongst Irish respondents, a quarter report that they have signed a petition and a fifth report that they have given money to an environmental group. Of those who report either giving money to an environmental group or signing a petition, just over 40 percent of these report doing both. So, while there appears to be a reluctance to take an active part, a notable minority of people are willing to provide support, at least at arm's-length.

*Table 2.7: Distribution of Responses on the Promotion of the Environment as a Social and Political Issue Items (%)*

	Yes	No	N
Signed a petition about an environmental issue (e19_1)	25.2	74.8	1243
Given money to an environmental group (e19_2)	19.8	80.2	1238
Taken part in a protest or demonstration about an environmental issue (e19_3)	5.0	95.0	1240
Member of group whose main aim is to preserve/protect the environment (e18)	3.7	96.3	1243

## 2.4 Environmental Attitudes and Behaviours of Irish People

As we will detail below, in Ireland, socio-demographic factors do contribute something to our understanding of people's attitudes and behaviours though where the coefficients of determination ( $R^2$ ) are statistically significant they are quite low, generally ranging from 2 to 7 percent (though on one occasion it is equal to 16 percent).<sup>7</sup> So what do these variables tell us about Irish people's attitudes and behaviours?

<sup>7</sup> In this project two basic statistically methods are used: Ordinary Least Squares (OLS) regression analysis and logistic regression analysis. OLS regression analysis summarises as a linear relationship, the relationship between those factors that we expect to help us in our understanding of differences in people's environmental attitudes and behaviour. How well these factors help us in our understanding is measured by the coefficient of determination ( $R^2$ ). While one would obviously like a model that explains a lot of the variance, our main concern is with the direction of 'the line of best fit'. As will be outlined in the next few chapters, there is an expectation that those who view the world in a particular way will be more likely than others to have pro-environmental attitudes and behaviours. As such then our concern is whether or not the estimated coefficient of the value, worldview or socio-demographic variable is statistically different from zero and in the expected direction. If the estimated coefficient is not different from zero then we fail to reject the null hypothesis that the value, worldview or socio-demographic variable has no effect whatsoever on the attitude or behaviour. A problem arises when the attitude or behaviour is measured in a binary form, that is, people either 'agree' or 'disagree'; are members of an environmental group or not. While there are a number of problems associated with using OLS to examine binary dependent variables (the errors are non-normal and heteroscedastic) the most serious problem is that the predicted values of the dependent variable will fall outside the required (0,1) range. In order to examine those relationships where we have a binary dependent variable, we use Binary Logistic Regression Analysis. When the log-odds ratio is greater than one there is a positive

### 2.4.1 Perceptions of environmental dangers

As noted above, in general Irish people perceive the environment as being under threat from a variety of sources. On a Perception of Environmental Danger scale (the development of which was outlined above) that runs from one-to-five, where 'five' is 'extremely dangerous' and 'one' is 'not dangerous at all', 30 percent of Irish respondents have a score greater than four.<sup>8</sup> The evidence presented in Table 2.8 shows that the gender of the respondent, age and income have a significant impact on the respondent's perceptions of the dangers that the environment faces. That said, it should be noted that no matter what socio-demographic cohort one considers, all are concerned about threats to the environment (i.e. the mean positions for each socio-demographic cohort on this scale is greater than three). On this scale women, who as a group have a mean score of 3.80, are more concerned about the environment than men, who as a group have a mean score of 3.73. The fact that the estimated coefficients for respondent's age, and income, are negative implies that younger respondents, and those on lower incomes, are more concerned about the environment than older respondents, and those on higher incomes.

*Table 2.8 Socio-Demographic Variables and Environmental Attitudes (Standardised Coefficients)*

	Perceptions of Danger for the Environment	Willingness to take on costs	Environmental Efficacy
Female <sup>a</sup>	0.08*	-0.07*	-0.02
Age <sup>b</sup>	-0.09*	-0.06	-0.05
Education <sup>c</sup>	0.00	0.08	0.22***
Urban <sup>d</sup>	0.06	0.06	0.00
Religious Attendance <sup>e</sup>	-0.02	0.02	-0.01
Social Class <sup>f</sup>	0.02	-0.14**	-0.09*
Income <sup>g</sup>	-0.10*	0.05	0.19**
Public Sector <sup>h</sup>	0.05	0.01	0.05
Adj.R <sup>2</sup>	0.02**	0.06**	0.16**
F-Ratio	2.49	6.69	20.02
N	679	760	779

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

<sup>a</sup> Female = 1 and Male = 0; <sup>b</sup> Age in years at end of 2001; <sup>c</sup> Intercert/Junior Cert or less = 1; Leaving Cert = 2; and Degree or more = 3; <sup>d</sup> Urban = 1 and Rural = 0; <sup>e</sup> Attend at least once a week = 1 and Attend less than once a week = 0; <sup>f</sup> High Professional and Managerial = 1 – Unskilled Manual = 6; <sup>g</sup> Net Household Income: Less than 190 per week = 1 – More than 571 per week = 4. <sup>h</sup> Work in Public Sector = 1 and Work in Private Sector = 0.

---

relationship between the value, worldview or socio-demographic variable and the attitude or behaviour. When the log-odds ratio is less than one there is a negative relationship.

<sup>8</sup> The mean position on this scale is 3.77 and the median position is 3.71.

#### *2.4.2 Willingness to take on extra costs*

The distribution of Irish respondents on this scale is more or less evenly divided between those who are willing to take on extra costs and those who are not.<sup>9</sup> The evidence presented in Table 2.8 implies that the respondents' gender and their social class has a significant impact on their willingness to take on these costs. When we consider the mean positions of both genders neither appears to be willing to take on the extra costs, but men, who as a group have a mean score of 2.91, are more willing than women, who as a group have a mean score of 2.79. However, the mean positions of those in Social Classes I and II suggest that these groups are willing to take on extra costs of protecting the environment as the mean scores for both of these groups are 3.24 and 3.18 respectively. Those in the other social classes are less willing, with the least willing being those in Social Class IV, who as a group have a mean score of 2.49.

#### *2.4.3 Environmental efficacy*

When it comes to whether or not Irish people feel their actions to protect the environment will be effective, there is almost an even divide between the percentage of respondents who feel optimistic about the effect of their actions and those who feel pessimistic.<sup>10</sup> However, some interesting differences emerge when we consider each of the different socio-demographic variables. (see Table 2.8) Respondents' levels of education as well as their net household income and their social class are found to have a significant impact on their feelings of efficacy with regard to dealing with environmental problems. On this scale high scores are associated with strong feelings of efficacy, while low scores are associated with weak feelings and the mid-point of the scale is equal to three. At one end of this scale are those with the weakest feelings of efficacy: those with an Intermediate/Junior Certificate or less have a mean position of 2.84; those who earn £190 or less per week have a mean position of 2.72; and those in Social Category VI (Unskilled Manual Labour) have a mean position of 2.93. At the other end of this scale are those with the strongest feelings of efficacy: those with a University degree or higher have a mean position of 3.35; those who earn £571 or more per week have a mean position of 3.48; and those in Social Category I (Higher Managerial and Professional and Farmers with more the 200 acres) have a mean position of 3.45.

#### *2.4.4 Trust in sources of information*

With regard to trusting groups to provide them with correct information about the causes of pollution, a large majority of Irish people trust environmental groups to do so, with few trusting business and industry. The results presented in Table 2.9 imply that the socio-demographic variables do not

---

<sup>9</sup> The mean position on this scale is 2.85 while the median position is 3.00.

<sup>10</sup> The mean position on this scale is 3.15 while the median position is 3.00.

contribute much to our understanding of the differences in the levels of trust that people have. That said, the results indicate that the gender of the respondent has a significant impact on the level of trust people have in government departments, while education has a significant impact on trust in environmental groups. With regard to government departments as sources of correct information about the causes of pollution, 28 percent of males and 23 percent of females state that they have a ‘great deal’ or ‘quite a lot’ of trust in them. Most people trust environmental groups to provide them with correct information. The main difference in terms of trust is between those who have the lowest levels of formal education, 56 percent of these have a ‘great deal’ or ‘quite a lot’ of trust in environmental groups, and those who have at least a leaving certificate. Of those who have a university degree, 67 percent trust environmental groups, while of those who have a Leaving Certificate but not a degree, 68 percent of these trust environmental groups.

*Table 2.9 Socio-Demographic Variables and Trust as Source of Information about the causes of Pollution (Exp (B))*

	Business and Industry	Government Departments	Environmental Groups
Female <sup>a</sup>	0.97	0.62**	1.23
Age <sup>b</sup>	1.00	1.00	1.00
Education <sup>c</sup>	0.70	1.01	1.38*
Urban <sup>d</sup>	1.02	1.04	1.21
Religious Attendance <sup>e</sup>	0.89	0.95	1.03
Social Class <sup>f</sup>	0.96	0.94	1.11
Income <sup>g</sup>	1.09	0.89	1.00
Public Sector <sup>h</sup>	1.09	1.30	0.83
Constant	0.13**	0.76	0.66
Cox and Snell R <sup>2</sup>	0.01	0.02	0.02
Nagelkerke R <sup>2</sup>	0.01	0.03	0.02
-2 Log Likelihood	428.38	890.34	999.00
Chi-Square	5.04	13.92	14.42
N	783	786	784

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

<sup>a</sup> Female = 1 and Male = 0; <sup>b</sup> Age in years at end of 2001; <sup>c</sup> Intercert/Junior Cert or less = 1; Leaving Cert = 2; and Degree or more = 3; <sup>d</sup> Urban = 1 and Rural = 0; <sup>e</sup> Attend at least once a week = 1 and Attend less than once a week = 0; <sup>f</sup> High Professional and Managerial = 1 – Unskilled Manual = 6; <sup>g</sup> Net Household Income: Less than 190 per week = 1 – More than 571 per week = 4. <sup>h</sup> Work in Public Sector = 1 and Work in Private Sector = 0.

#### 2.4.5 Dealing with waste

In dealing with waste four possible methods were proposed. It was noted above that a slightly higher percentage of Irish respondents were willing to agree that the use of ‘incinerators is the best way to dispose of waste’ than agree to the development of new landfill sites. The results presented in Table 2.10 indicate that age, education and where a person lives have a significant impact on their attitude towards the use of incinerators. The use of incinerators found most favour amongst those with the

lowest levels of formal education as 47 percent of this cohort believe that incinerators are the best way of disposing of waste while only 31 percent of those with at least a university degree agree with this view. While the division is not quite as stark, the percentage of those living in urban areas that agree with the use of incinerators, 40 percent, is greater than the percentage of those living in rural areas that agree, 38 percent. There is also a positive relationship between age and attitudes towards incinerators: younger people are less likely to agree with the proposal that incinerators are the best way of dealing with waste than older people.

*Table 2.10 Socio-Demographic Variables and Attitudes to Dealing with Waste (Exp (B))*

	Incinerators	Landfill	Pay to Recycle	Manufacturer Recycle
Female <sup>a</sup>	0.99	1.12	0.99	1.30
Age <sup>b</sup>	1.03**	1.00	1.00	1.01
Education <sup>c</sup>	0.74*	0.70**	1.31	0.80
Urban <sup>d</sup>	1.33*	1.32*	0.68**	0.87
Religious Attendance <sup>e</sup>	0.81	1.46**	1.32	1.25
Social Class <sup>f</sup>	1.07	1.16**	0.90	1.02
Income <sup>g</sup>	0.99	0.95	1.20**	0.88
Public Sector <sup>h</sup>	0.75	1.26	1.03	0.96
Constant	0.42	0.95	2.89*	3.57*
Cox and Snell R <sup>2</sup>	0.08	0.06	0.03	0.03
Nagelkerke R <sup>2</sup>	0.10	0.07	0.05	0.05
-2 Log Likelihood	1195.98	1281.00	982.50	1062.53
Chi-Square	72.71**	56.17**	33.45**	32.95**
N	918	971	1093	1033

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

<sup>a</sup> Female = 1 and Male = 0; <sup>b</sup> Age in years at end of 2001; <sup>c</sup> Intercert/Junior Cert or less = 1; Leaving Cert = 2; and Degree or more = 3; <sup>d</sup> Urban = 1 and Rural = 0; <sup>e</sup> Attend at least once a week = 1 and Attend less than once a week = 0; <sup>f</sup> High Professional and Managerial = 1 – Unskilled Manual = 6; <sup>g</sup> Net Household Income: Less than 190 per week = 1 – More than 571 per week = 4. <sup>h</sup> Work in Public Sector = 1 and Work in Private Sector = 0.

When it comes to the development of new landfill sites, respondents' levels of formal education, where they live, their social class and attendance at religious services, are significantly related to people's attitudes. When we consider education, 47 percent of those who have at most an Intermediate/Junior Certificate are in favour of developing new landfill sites while 34 percent of those who have at least a university degree are in favour of doing so. Again there is a slight difference between urban and rural respondents, with 43 percent of the former and 41 percent of the latter favouring the development of new landfill sites. When we consider social class, just over half (51 percent) of those in Social Class IV, but less than a third (30 percent) of those in Social Class I, favour the development of such sites. Amongst those who attend religious services at least once a week, 45 percent favour the development of new landfill sites, while only 37 percent of those who do not attend such services at least once a week are in favour of new sites.

While the use of incinerators and the development of new landfill meets with limited support, large majorities of respondents agree with both suggestions about recycling waste. In terms of people being willing to 'pay more in order to recycle waste', where people live and their net household incomes have a statistically significant impact. While similar percentages of those who live in urban and rural areas agree that they are willing to pay more to recycle (72 percent), a larger percentage of those in urban areas, 18 percent, than the percentage of those in rural areas, 13 percent, disagree with this statement. Not surprisingly, the percentage who are willing to pay more to recycle is greatest amongst those where the net household income is highest, 82 percent, and lowest amongst those who earn least, 62 percent. Finally, when it comes to it being the responsibility of 'the original manufacturer to recycle consumer products', the various socio-demographic variables do not contribute to our understanding of the distribution of attitudes on this item.

#### *2.4.6 Recycling and Car Usage*

When we considered environmentally friendly behaviour, a large percentage of respondents reported that they at least 'sometimes' separate waste for recycling but a much smaller percentage have ever cut back on driving for environmental reasons. Respondents' levels of formal education and their attendance at religious services are significantly related to whether or not they recycle, while where they live and whether they work in the public or private sector is significantly related to whether or not they have cut back on car use for environmental reasons. (see Table 2.11)

While the vast majority of people report that they have recycled at least 'sometimes', amongst those who have a university degree, 89 percent have recycled 'sometimes', compared with 75 percent of those who have a most an Intermediate/Junior Certificate. The frequency of attendance at religious services also plays a significant role. Of those who attend church at least once a week, 83 percent report that they have recycled at least 'sometimes', compared with 78 percent of those who are not frequent church attendees.

When it comes to cutting back on car use, amongst those who live in urban areas 40 percent of respondents report having done so while only 26 percent of those who live in rural areas claim to have cut back on car use for environmental reasons. While there is a significant difference between the behaviour of those who live in urban and rural areas, it is perhaps not all that surprising as those who live in urban areas are more likely to have alternative modes of transport, that is public transport, available to them. Finally, those who work in the public sector are more likely to cut back on car use

than those who work in the private sector. Of those who work in the latter sector 28 percent reported driving less while 43 percent of public sector workers reported that they used their car less for environmental reasons.<sup>11</sup>

*Table 2.11 Socio-Demographic Variables and Reported Environmental Behaviour (Exp (B))*

	Recycle	Cut back on Driving
Female <sup>a</sup>	1.44	1.01
Age <sup>b</sup>	1.00	1.00
Education <sup>c</sup>	1.50*	0.96
Urban <sup>d</sup>	1.26	1.96**
Religious Attendance <sup>e</sup>	1.54*	0.94
Social Class <sup>f</sup>	0.96	0.89
Income <sup>g</sup>	1.04	0.96
Public Sector <sup>h</sup>	1.28	1.71*
Constant	1.32	0.50
Cox and Snell R <sup>2</sup>	0.03	0.04
Nagelkerke R <sup>2</sup>	0.05	0.06
-2 Log Likelihood	671.05	810.32
Chi-Square	23.75**	29.29**
N	742	661

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

<sup>a</sup> Female = 1 and Male = 0; <sup>b</sup> Age in years at end of 2001; <sup>c</sup> Intercert/Junior Cert or less = 1; Leaving Cert = 2; and Degree or more = 3; <sup>d</sup> Urban = 1 and Rural = 0; <sup>e</sup> Attend at least once a week = 1 and Attend less than once a week = 0; <sup>f</sup> High Professional and Managerial = 1 – Unskilled Manual = 6; <sup>g</sup> Net Household Income: Less than 190 per week = 1 – More than 571 per week = 4. <sup>h</sup> Work in Public Sector = 1 and Work in Private Sector = 0.

#### 2.4.7 Promoting the environment as a social and political issue

Finally, we consider those items that measure the actions of respondents in mobilising around environmental issues. Only very small percentages of Irish respondents have been involved in more direct methods of promoting the environment as a social and political issue (e.g. through membership of an environmental group or participation in a protest or demonstration about an environmental issue) while somewhat larger percentages have been willing to lend indirect support through the signing of a petition or donating money to an environmental group. It is evident from Table 2.12 that the socio-demographic variables do not contribute to our understanding of people's activities to promote the environment as an issue, except in the case of signing a petition. When it comes to signing a petition, only education plays a significant role. Amongst those with highest level of formal education, 41 percent report that they signed a petition while just 15 percent of those with the lowest level of formal education report having done so.

<sup>11</sup> It should also be noted that there is no correlation between whether or not a person works in the public service and whether they live in an urban or rural area.

Table 2.12 Socio-Demographic Variables and Promotion of the Environment as a Social and Political Issue (Exp (B))

	Member	Money	Protest	Petition
Female <sup>a</sup>	0.83	1.35	1.07	1.07
Age <sup>b</sup>	1.00	0.99	1.00	0.99
Education <sup>c</sup>	1.36	1.20	1.59	1.39*
Urban <sup>d</sup>	0.73	1.03	0.90	1.33
Religious Attendance <sup>e</sup>	0.62	0.77	1.11	0.83
Social Class <sup>f</sup>	1.02	0.94	1.12	0.99
Income <sup>g</sup>	0.80	1.11	0.92	1.19
Public Sector <sup>h</sup>	0.54	0.82	0.55	1.12
Constant	0.06*	0.28*	0.03**	0.19**
Cox and Snell R <sup>2</sup>	0.01	0.03	0.01	0.05
Nagelkerke R <sup>2</sup>	0.02	0.04	0.02	0.07
-2 Log Likelihood	224.31	826.53	356.28	915.83
Chi-Square	4.55	23.46**	6.50	41.28**
N	793	794	797	796

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

<sup>a</sup> Female = 1 and Male = 0; <sup>b</sup> Age in years at end of 2001; <sup>c</sup> Intercert/Junior Cert or less = 1; Leaving Cert = 2; and Degree or more = 3; <sup>d</sup> Urban = 1 and Rural = 0; <sup>e</sup> Attend at least once a week = 1 and Attend less than once a week = 0; <sup>f</sup> High Professional and Managerial = 1 – Unskilled Manual = 6; <sup>g</sup> Net Household Income: Less than 190 per week = 1 – More than 571 per week = 4. <sup>h</sup> Work in Public Sector = 1 and Work in Private Sector = 0.

## 2.5 Conclusion

The purpose of this chapter was to first set out our measures of environmental attitudes and behaviours, and then to examine a variety of socio-demographic variables to see if they help us understand differences between respondents in relation to these. In Chapter 1 we noted that others have found that socio-demographic variables only explain low levels of the variance in environmental attitudes and behaviours. The evidence presented above suggests a similar conclusion with regard to the Irish data. For the most part, the set of socio-demographic variables explain less than ten per cent of the variance in Irish environmental attitudes and behaviours. Only one set of attitudes stands out from the others with socio-demographic factors explaining 16 percent of the variance in people's sense of environmental efficacy.

Of the various socio-demographic variables that we consider, education appears to be the most powerful. The level of formal education of the respondent has a significant impact in six of the sets of environmental attitudes and behaviours that we considered. As we have seen, those with higher levels of education are more likely than their counterparts to trust environmental groups and have a stronger sense of environmental efficacy, they hold negative attitudes towards incinerators and landfills, and are



more willing to recycle and to sign an environmental petition. Those with higher incomes also have a stronger sense of environmental efficacy and are more willing to pay for recycling than their counterparts. When we consider social class we found a similar pattern. Those in higher social classes are more willing to take on the extra costs of protecting the environment and have negative attitudes towards the development of new landfill sites.



## **Chapter 3**

### **The Impact of the New Environmental Paradigm on Environmental Attitudes and Behaviours in Ireland**

#### **3.1 Introduction**

In recent decades some social scientists have argued that a new environmental consciousness has begun to emerge. Dunlap and Van Liere (1978) coined the phrase 'New Environmental Paradigm' (NEP) to describe this new consciousness that links beliefs about the relationship between humanity and nature, the importance of economic growth and the value of technology. The NEP posits that values in western societies are changing in ways that restructure people's relationship with the environment. Such changes include the belief that human needs and values should no longer be of greater concern than those of nature, and that species other than humans are considered to have rights. (Dalton and Rohrschneider, 1998) There is also a realisation that many of the resources available on the planet are limited. People's expectations ought to adjust to reflect this reality, placing less emphasis on economic growth and adopting a more sceptical attitude towards science and technology. (Dalton and Rohrschneider, 1998)

The purpose of this chapter is to explore the extent to which NEP values may exist in Ireland and the relationship between NEP and other environmental attitudes and behaviours. The first section of this chapter sets out how we arrived at our measure of NEP values. We then examine the relationship between the NEP and a variety of socio-demographic characteristics. Finally, in order to examine if this broader set of cultural values contributes to and supports pro-environmental attitudes and behaviours, we examine the relationship between the respondents' NEP values and their environmental attitudes and behaviours.

#### **3.2 The NEP Scale in Ireland**

In this chapter we propose that NEP values in Ireland are structured along a single dimension. It should be noted that in the international literature there is little consensus as to whether the NEP measures a single construct or is multidimensional. Studies carried out in the USA have found a single dimensional

NEP scale (Edgell and Nowell, 1989) while others have found more than one dimension, that is, they have found dimensions measuring balance of nature, limits of growth and human domination of nature. (Albrecht et al, 1982; Geller and Lasley, 1985; Noe and Snow, 1990; and Furman, 1998).

In Europe, using data from the 1993 ISSP environmental module, Dalton and Rohrschneider (1998) developed a single NEP scale for six countries. The Dalton and Rohrschneider (1998) scale utilises eight of the 14 relevant items in the 1993 ISSP Environmental module. These eight items were selected on the basis that they offered the greatest empirical and theoretical reliability of the available items. The diverse nature of NEP is reflected in the four sets of items that constitute the Dalton and Rohrschneider (1998) NEP scale: 'biocentric values', 'scepticism about science', 'economic growth' and 'social change'.

When we focus on the 1993 Irish data we find that the Dalton and Rohrschneider (1998) NEP scale is quite robust in that it has a Cronbach's alpha of 0.71<sup>12</sup>. Unfortunately, direct comparability between the two data sets is not possible because a number of the items from the 1993 scale were not included in the 2002 ISSP Environmental module. In the Dalton and Rohrschneider (1998) NEP scale three biocentric value items were used and all of these were dropped from the 2002 ISSP Environmental module.<sup>13</sup> In developing a NEP scale for this report, we initially considered not only all of the theoretically relevant items from the 2002 ISSP Environment module (twelve items) but also relevant items from the self-completion module of the ISPAS survey (nine items).

The single-dimensional NEP scale that we propose contains seven items, three of which are taken from 2002 ISSP Environmental module and four from the ISPAS self-completion module.<sup>14</sup> In Table 3.1, we

---

<sup>12</sup> Author's calculation using the same items for the 1993 ISSP Environmental module.

<sup>13</sup> It was proposed by Jarvis et al (1999) that two of items used in 1993, 'Humans should respect nature because it was created by God' and 'Nature would be at peace and in harmony if only human beings would leave it alone' should be dropped because their double-barrelled nature made them difficult to interpret. Respondents could agree with one half of the item and disagree with the other. Furthermore, they suggested that the former item contained the same information as the 'nature is sacred/spiritual' item. The third bio-centric item that was dropped was 'Animals should have the same moral rights that human beings do'. While Jarvis et al (1999) did not propose that this item be dropped, they instead recommended 'It is right to use animals for medical testing if it might save human lives', in the final version of the questionnaire. The reason for dropping one of these 'animal rights' items was because both were skewed in the 1993 data. The fourth item that was dropped was 'Any change humans cause in nature – no matter how scientific – will make things worse'. That Dalton and Rohrschneider (1998) refer to this as a 'social change' item while Jarvis et al (1999) refer to it as a 'science' item, two aspects of NEP, illustrates the problem with this item: it is double barrelled, tapping attitudes towards science and attitudes towards the relationship between people and nature.

<sup>14</sup> We began our analysis of the relevant items by first examining those items that formed the Dalton and Rohrschneider scale. One draw back with this approach is that only four items from that scale remained in the ISSP module (These four items are 'We believe too often in science and not enough in feelings and faith' (e3\_1), 'Overall, modern science does more harm than good' (e3\_2), 'Economic

present the results of the final factor analysis. This component contains four elements of the NEP: biocentric, limits of growth, economic growth and the impact of social change on the environment. It should be noted that it is possible that a scale that is intended to be unidimensional may appear to have multiple scales. The decision as to whether one or more components ought to be identified is often one of interpreting the meaning of the various components. It is likely that factor analysis will reveal two components, even with a small number of items, unless the items are very highly correlated with one another. In the appendix, Table A3.1, we present the results of a factor analysis that reports the loadings on a two component solution: on the first component the biocentric and limits of growth items load highly while the economic growth and social change items load highly on the second component. However, because the Cronbach's alpha for the second component is somewhat low, we have decided to extract just a single component from the seven items. When these items are used to construct an NEP scale the resultant scale has a Cronbach's alpha of 0.68 suggesting that it has good internal consistency. While this scale is not directly comparable with Dalton and Rohrschneider's (1998) scale, in terms of reliability, the NEP scale that we propose is almost as good as their scale.<sup>15</sup> The scale that we propose runs from one-to-five and high values are associated with strong NEP values.

---

growth always harms the environment' (e3\_9) and 'Almost everything we do in modern life harms the environment'. (e3\_5)). When we examined the reliability of these four items in forming a linear scale we noted that they did not perform as well as they had in 1993. In the earlier study, these four items had a Cronbach's alpha of 0.53, but for the 2002 data Cronbach's alpha for the four items is 0.48. This suggests that in order to develop a more reliable scale it would be necessary to consider what other items were available (seven were subsequently identified). When these four items were included in a factor analysis with the seven items that form the NEP scale in this chapter, the loadings for all four items were low (all four items had loadings of less than 0.30). In carrying out the factor analysis all but one of the items proposed by the team who designed the ISSP Environment module were considered. The one item that was not considered was excluded because of its double-barrelled nature. When a respondent disagrees with 'Modern science will solve our environmental problems with little change to our way of life' (e3\_3) it is not clear whether they are saying that 'modern science can solve environmental problems but that in doing so it will affect our way of life' or they are simply disagreeing with the notion that that modern science will solve environmental problems. Consequently, this item was not included in any of the analysis that we performed. Of the other items that were considered some were excluded because of low loadings. Four items have very low loadings: 'It is right to use animals for medical testing if it might save human lives' (e3\_8), 'The earth simply cannot continue to support population growth at its present rate' (e3\_10), 'However much human beings try to alter nature for their own benefit it will follow its own ways' (q5\_4) and 'You can never be sure how nature will react' (q5\_5). Others were dropped because they did not load in the expected direction. (Given the direction of 'The Irish State should do what scientists say about protecting nature' (q5\_3) and 'To protect nature, everybody needs to follow environmental regulation' (q5\_7), there was an expectation that both of these items would load negatively on the NEP scale but instead they had positive loadings.) Another item was excluded because despite its high loading it contributed little to the scale (When the item 'My first priority is to provide for myself and my family, even if this means doing things that harm the environment' (q5\_8), was included the Cronbach's alpha of the scale was more or less equal to that when this items was not included.).

<sup>15</sup> It should be noted that in the ISSP module five-point items are used and high scores indicate 'disagreement' with a particular item. In the ISPAS self-completion module seven-point items are used and high scores indicate 'agreement' with the item. This means that in developing our scale a certain amount of recoding is required. The NEP scale that we propose runs from one-to-five and high scores indicate a person who views nature as fragile, limited and in need of our care and attention while low values indicates someone who does not. Given that the NEP scale runs from one-to-five it was

*Table 3.1: New Environmental Paradigm Scale Items and Principal Component Factor Loadings*

Items	Aspect of NEP	Loadings
In the modern world natural resources are being depleted too rapidly (q5_2)	Limits of Growth	0.76
The natural environment is fragile and needs great care (q5_1)	Biocentric	0.75
It is very important to maintain the variety of living species in the world (q5_9)	Biocentric	0.52
Modifying nature for human use seldom causes serious problems (q5_6)	Social Change	-0.53
We worry too much about the future of the environment and not enough about prices and jobs today (e3_4)	Economic Growth	0.61
People worry too much about human progress harming the environment (e3_6)	Social Change	0.55
In order to protect the environment Ireland needs economic growth (e3_7)	Economic Growth	0.38
% Variance Explained		35.92

Extraction Method: Principal Component Analysis; Rotation Method Variamax with Kaiser Normalization; 'Can't choose' were coded as missing data.

So what does this single-dimensional NEP scale tell us about environmental values in Ireland? The NEP scale that we propose differentiates between those respondents who view nature as fragile, limited and in need of our care and attention, and those who do not. Basically those who agree with the biocentric item that 'the natural environment is fragile and needs great care' also agree that 'it is very important to maintain the variety of living species in the world' and that in the modern world there are limits to growth as 'natural resources are being depleted too rapidly'. Those who hold such views on the biocentric items disagree with the economic growth and social change items. Thus those who hold the above views also believe that we do not worry 'too much about the future of the environment and not enough about prices and jobs today', and that we do not worry 'too much about human progress harming the environment'. These people also disagree with the notion that 'modifying nature for human use seldom causes serious problems' and believe that 'in order to protect the environment Ireland does not need economic growth'.

necessary to recode the seven-point items in the self-completion module so that they too run from one-to-five. Also, the loading for 'modifying nature for human use seldom causes serious problems' (q5\_6) is negative. This indicates that those who disagreed with this statement (a low score) agreed that 'the natural environment is fragile and needs great care' (q5\_1) (a high score) and believed that we do not worry 'too much about the future of the environment and not enough about prices and jobs today' (e3\_4) (a high score). Consequently, in constructing the NEP scale we reversed the direction of this item so that disagreement with this statement is associated with a high score and agreement is associated with a low score. Finally, each respondent's position on the NEP scale is the mean position of his/her positions on each of the seven items.

### 3.3 The Distribution of Irish Respondents on NEP Scales

In this section we consider the distribution of NEP values among Irish respondents. We consider not only the sample as a whole but also the distribution of NEP values across various socio-demographic groupings. This method allows us to identify those sub-groups that are most associated with strong NEP values and those that are not. The distribution of NEP values among all respondents is somewhat biased towards the strong NEP end of the scale. This is so whether the position of the typical respondent is identified by the mean (3.64) or the median (3.67). The vast majority of Irish respondents are to some degree disposed towards the view that nature is fragile, limited and in need of our care and attention. Just over 30 percent of respondents have a score between four and five while less than 13 percent of respondents have a score that is less than 3.00 on the NEP scale (that is, on the weak NEP side of the scale). How do these attitudes to the environment differ within socio-demographic groupings?

As to whether or not respondents have strong or weak NEP values, the results presented in Table 3.2 indicate that age, education and religiosity help us understand these differences. The evidence suggests that younger people rather than older people are more likely to view nature as fragile, limited and in need of our care and attention, as are those with higher levels of formal education rather than those with lower levels. However, it should be noted that when we look at the mean scores for various age cohorts we found that all of these were greater than the mid-point on our NEP scale. This indicates that age, rather than contributing to an understanding of differences in terms of strong NEP and weak NEP, highlights differences between age groups in terms of the extent of their strong-NEP values. The mean score for those aged 25-44 on this scale is 3.74 while the mean score for those over 65 years of age is 3.51. The basic finding that there is a negative relationship between age and concern for the environment as measured on the NEP, that younger people are more likely to hold stronger NEP values than older people, is in line with that of others (see Dunlap et al's (2000) study of Washington State residents).

As with age, the mean scores for each of the three educational cohorts are greater than the mid-point of the scale. Again, this implies that education helps us understand differences between those with strong-NEP values rather than differences in terms of those with strong and those with weak NEP values. The mean score for those who at most completed their Intermediate/Junior Certificate is 3.49 while the

mean score for those who have at least a university degree is 3.87. This result tallies with that of Dunlap et al (2000) who also found a positive relationship between concern for the environment on their NEP scale and education. Ewert and Baker (2001, p.689) who studied students in British Columbia note that of the many variables studied 'education has proven to be the most consistent in its relationship to levels of concern'. Stern et al.'s (1995) study in northern Virginia found a positive correlation between those who had a university education and concern for the environment and a negative correlation between those who had a basic education and concern for the environment. In the USA, others such as Buttel (1979) and Mohai and Twight (1987) have noted that the more urbanised, as well as the young and the better educated, display higher levels of environmental concerns than their counterparts. In Ireland, while the mean score on our NEP scale for those who live in rural areas is indeed less than the mean score for those who live in urban areas, the relationship is not statistically significant.

*Table 3.2: Regression Analysis of Socio-Demographic Variables and the NEP Scale (Standardised Coefficients)*

	NEP
Female	0.05
Age	-0.11*
Education	0.16**
Urban	0.06
Religious Attendance	-0.09*
Social Class	-0.06
Income	0.04
Public Sector	0.03
Adj.R <sup>2</sup>	0.08**
F-Ratio	7.18
N	565

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

<sup>a</sup> Female = 1 and Male = 0; <sup>b</sup> Age in years at end of 2001; <sup>c</sup> Intercert/Junior Cert or less = 1; Leaving Cert = 2; and Degree or more = 3; <sup>d</sup> Urban = 1 and Rural = 0; <sup>e</sup> Attend at least once a week = 1 and Attend less than once a week = 0; <sup>f</sup> High Professional and Managerial = 1 – Unskilled Manual = 6; <sup>g</sup> Net Household Income: Less than 190 per week = 1 – More than 571 per week = 4. <sup>h</sup> Work in Public Sector = 1 and Work in Private Sector = 0.

Finally, those who attend religious services at least once a week are less likely to view nature as fragile, limited and in need of our care and attention than those who are less frequent attenders at religious services. Those who attend religious services at least once a week have a mean score on our NEP scale of 3.59, which is less than that for those who are less frequent attenders (these have a mean of score on our NEP scale of 3.74). In a comparative study of university students in fourteen countries, Schultz et al (2000) examined the relationship between religious beliefs and environmental concern and found a similar relationship: 'a literal belief in the Bible leads to a general concern for oneself and for other people but not necessarily to a concern for plants and animals'. (Schultz et al, 2000, p.588) The authors



do not suggest that such people are unconcerned about the environment but instead are concerned about how environmental degradation will affect humans.

### **3.4 NEP and Environmental Attitudes and Behaviours**

Now that we have considered the distribution of NEP values in Ireland, how do these values related to attitudes towards the environment and people's reported environmental behaviours? There is an expectation that those who view nature as fragile, limited and in need of our care and attention will be more likely than their counterparts to have pro-environmental attitudes and behaviours. For the most part our analysis finds that the NEP scale is indeed an important factor in helping us understand people's environmental attitudes and behaviours. As is evident from Tables 3.3 to 3.7, where there are statistically significant relationships between the NEP scale and measures of attitudes and behaviour, between one and twenty percent of the variance is explained. Of course, that NEP is a statistically significant factor in understanding environmental attitudes and behaviours is perhaps not all that surprising as the scale is composed of items that make direct reference to the environment. However, the items that make up the NEP scale are more general and broad based. What we explore here is the extent to which this set of cultural values is related to, and supportive of, particular environmental attitudes and practices.

In order to enhance our discussion of the relationship between respondents' NEP values and their environmental attitudes and behaviours, we not only consider the results of regressions analyses but also, for descriptive purposes, have divided the NEP scale into two sub-groups. The two sub-groups that we compare are, the 20 percent of respondents who have the highest scores on the NEP scale (in effect, those who scored between 4.12 and 5.00), and the 20 per cent of respondents who have the lowest scores on the scale (in effect, those who scored between 1.00 and 3.14). Obviously, we would prefer to distinguish between respondents at either end of the NEP scale as this would have allowed us to compare those who see nature as fragile, limited and in need of our care and attention and those who do not. Given the distribution of the NEP scale, (most respondents have scores of three or more), we are comparing those who have strong beliefs that nature is fragile, limited and in need of our care and attention with those who are less sure about the fragility and limitations of nature (most of this sub-group of respondents are distributed around the mid-point of the scale).

### 3.4.1 Environmental Attitudes

#### 3.4.1.1 Perceptions of danger to the environment

The first attitude that we consider is people's perceptions of danger to the environment. As noted in Chapter 2, Irish people believe that the environment is in danger from a variety of threats. When all of these threats are included in the one scale it was noted that the mean position of Irish respondents suggests that they are concerned about the environment and the dangers it faces. It is evident from the results presented in Table 3.3 that there is a positive relationship between the NEP scale and the scale measuring respondents' perceptions of how dangerous various threats are for the environment. The results show that those who view nature as fragile, limited and in need of our care and attention believe that these threats pose greater danger to the environment than those who do not view the environment in this way. Given that Irish people perceive that the environment is under threat, it is not surprising that the mean positions of those who have the strongest and weakest NEP values are greater than the mid-point on the 'perceptions of danger' scale. The NEP scale differentiates between the degrees of danger that respondents perceive. Those with the strongest NEP values are more concerned about the dangers facing the environment than those with the weakest NEP values. The mean position for the former group on this scale is 4.03 while the mean position for the latter group is 3.52.

*Table 3.3: NEP Scale and Environmental Attitudes (Standardised Coefficients)*

	Perceptions of Danger	Willingness to take on costs	Environmental Efficacy
NEP	0.30**	0.38**	0.40**
R <sup>2</sup>	0.09**	0.15**	0.16**
F-Ratio	71.71	136.24	151.87
N	709	793	821

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

#### 3.4.1.2 Willingness to take on extra costs

What about people's willingness to take on extra costs to protect the environment? When the sample as a whole was considered the mean position of 2.85 implied that Irish people were somewhat unwilling to take on extra costs of protecting the environment. It is evident from the results presented in Table 3.3 that there is a positive relationship between NEP scale and willingness to take on these extra costs. The results show that those who view nature as fragile, limited and in need of our care and attention are more willing to take on the costs involved of protecting the environment than those who do not view the environment in this way. The NEP scale is particularly useful in differentiating between opposing views on this scale. The mean position of those with the strongest NEP values of 3.43 suggests that those who see nature as fragile, limited and in need of our care and attention are willing to take on the costs of protecting the environment. However, those with the weakest NEP values have a mean position of just 2.36 on this scale implying that they are unwilling to take on such costs.

#### 3.4.1.3 Environmental efficacy

Earlier in Chapter 2 we noted that there is almost an even divide between those who are optimistic about the effect that their actions to protect the environment will have and those who are pessimistic. It is evident from the results presented in Table 3.3 that there is a positive relationship between NEP scale and feelings of environmental efficacy. The NEP provides a clear distinction between those who feel their actions will have an effect and those who do not. The results imply that those who view nature as fragile have a stronger belief that their actions to protect the environment will have an effect. Respondents who have the strongest NEP values are optimistic about the effects of their actions to protect the environment, having a mean score of 3.65. However, those with the weakest NEP values are pessimistic about the effects of such actions as they have a mean score of 2.83.

#### 3.4.1.4 Trust in sources of information

The next set of attitudes that we consider are the degree to which respondents trust three sources to provide correct information about the causes of pollution. In Chapter 2, we noted that most people trust environmental groups while very few trusted business and industry. It is evident from the results presented in Table 3.4 that there is a positive relationship between the NEP scale and trust in environmental groups, but a negative relationship between the NEP scale and trust in business and industry. These results tell us that those who view nature as fragile, limited and in need of our care and attention are more likely than their counterparts to trust environmental groups to provide them with correct information about the causes of pollution, but are less likely than their counterparts to trust business and industry to give them correct information. While 78 percent of those with the strongest NEP values trust environmental groups to provide them with correct information about the environment, only four percent of these trust business and industry to do so. However, it should not be presumed that a large percentage of those with the weakest NEP values trust business and industry to provide correct information. In fact, of this group only nine percent do so. It should also be noted that those with the weakest NEP values are much more sceptical of environmental groups as a source of information. Only 48 percent of those with the weakest NEP values trust environmental groups to provide them with correct information about the causes of pollution.

*Table 3.4: NEP and Trust as Source of Information about the cause of Pollution (Exp (B))*

	Business and Industry	Government Departments	Environmental Groups
NEP	0.57*	0.87	2.52**
Constant	0.61	0.53	0.07**
Cox and Snell R <sup>2</sup>	0.01	0.001	0.05
Nagelkerke R <sup>2</sup>	0.02	0.002	0.08
-2 Log Likelihood	433.18	909.12	1019.19
Chi-Square	5.73*	0.84	46.44**
N	817	818	823

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

#### 3.4.1.5 Dealing with waste

Finally in this section on environmental attitudes we consider respondents' attitudes to a variety of ways of dealing with waste. The evidence presented in Table 3.5 tells us that there is a positive relationship between the NEP scale and respondents' willingness to pay to recycle waste and a negative relationship between the NEP scale and their attitudes to incinerators and the development of new landfill sites. Just as they were willing to take on the extra costs involved of protecting the environment, the results indicate that those who view nature as fragile, limited and in need of our care and attention are more likely than their counterparts to be willing to pay to recycle their waste. When we compare those with the strongest and weakest NEP values, a majority of respondents are willing to pay more in order to recycle. However, while only 56 percent of those with the weakest NEP values are willing to pay more in order to recycle, 88 percent of those with the strongest NEP values are willing to do so. Respondents were also asked whether or not they agreed that it was the responsibility of the original manufacturers of consumer products to recycle them. While a large percentage of respondents agreed with this statement, and the relationship between this attitude and the NEP scale is indeed positive, statistically the NEP does not help us to understand people's attitudes on this item. That said, it is worth noting that 79 percent of those with the strongest NEP values and 60 percent of those with the weakest NEP values agreed that it is up to the original manufacturers of consumer products to recycle them.

Table 3.5: NEP and Attitudes to Dealing with Waste (Exp (B))

	Incinerators	Landfill	Pay to Recycle	Manufacturer Recycle
NEP	0.34**	0.49**	2.81**	1.14
Constant	52.65**	15.32**	0.12**	2.23
Cox and Snell R <sup>2</sup>	0.08	0.03	0.05	0.001
Nagelkerke R <sup>2</sup>	0.10	0.05	0.08	0.001
-2 Log Likelihood	805.11	884.75	638.86	741.59
Chi-Square	49.87**	23.63**	34.61**	0.06
N	617	658	735	704

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

When it comes to attitudes towards incinerators and new landfill sites, those who have strong NEP values are more likely than their counterparts to disagree with the suggestions that incinerators are the best way of disposing of waste and that new landfill sites should be developed in order to dispose of waste. The proportion of the overall sample that believes that incinerators are the best way of disposing of waste is just less than 40 percent. When we compare those with the strongest and weakest NEP values we find that there is quite a difference in the percentages of respondents who agree with this statement. Amongst those with the weakest NEP values, 57 percent agree that incinerators are the best way of disposing of waste, while just over a quarter of those who have the strongest NEP values do so. In the sample as a whole a slightly larger percentage agreed with the development of new landfill sites than agreed with the use of incinerators. When we compare those with the strongest and weakest NEP values we again find that the largest percentage, 53 percent, of those who support the development of landfill sites is amongst the group with the weakest NEP values. Amongst those with the strongest NEP values, about a quarter of respondents agreed with the development of new landfill sites.

### 3.4.2 Environmental Behaviours

In this section our attention shifts from what people think about particular environmental issues to what they actually do. The first two items that we consider refer to actions to protect the environment while the second four items refer to respondents' attempts to promote the environment as a social and political issue.

#### 3.4.2.1 Recycling and Car Usage

When it comes to sorting household waste for recycling and cutting back on driving in order to protect the environment, Table 3.6 suggests that there is a positive relationship between NEP and those who engage in these activities. The results indicate that those who view nature as fragile, limited and in need

of our care and attention are more likely than those who do not view the environment in this way, to at least ‘sometimes’ sort household waste for recycling and to at least ‘sometimes’ cut back on driving for environmental reasons. It should be remembered that the vast majority of Irish people report that they at least ‘sometimes’ sort household waste for recycling. Of those with the strongest NEP values, 90 percent report that they at least ‘sometimes’ sort household waste for recycling. While this is less likely among those with the weakest NEP values, it is nevertheless notable that three-quarters of these also report that they at least ‘sometimes’ sort household waste for recycling. When it comes to at least ‘sometimes’ cutting back on driving for environmental reasons, about a quarter of those with the weakest NEP values report that they have done so, while just over 40 percent of those with the strongest NEP values make this claim.

*Table 3.6: NEP and Reported Environmental Behaviour (Exp (B))*

	Recycle	Cut back on Driving
NEP	2.03**	1.69**
Constant	0.39	0.07**
Cox and Snell R <sup>2</sup>	0.02	0.02
Nagelkerke R <sup>2</sup>	0.04	0.02
-2 Log Likelihood	685.53	830.74
Chi-Square	12.22**	12.08**
N	771	665

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

#### 3.4.2.2 Promoting the environment as an issue

Finally, we consider the actions of Irish respondents to promote the environment as a social and political issue. As we outlined in Chapter 2, Irish respondents are most likely to become involved in the less direct methods of signing a petition or giving money to an environmental group. For both types of action the NEP scale has a significant positive effect. Those who view nature as fragile, limited and in need of our care and attention are more likely than their counterparts to sign a petition and are more likely to give money to an environmental group. There are some notable differences in the percentages of those with the strongest NEP values who report that they have signed a petition and given money to an environmental group and those with the weakest NEP values. Of the latter group only 13 percent have signed a petition and only 12 percent reporting that they have donated money. However, of those with the strongest NEP values, 34 percent have given money to an environmental group and 43 percent have signed a petition. There is also a significant relationship between the NEP scale and whether or not the respondent has taken part in a protest about an environmental issue. Again, those with strong NEP values are more likely than those with weak values to protest about an environmental issue. While the percentages of those with the strongest and weakest values who have taken part in a protest are smaller

than those who have given money or signed a petition, the difference is more dramatic. While less than one percent of those who have the weakest NEP values report that they took part in a protest or demonstration over an environmental issue, almost ten percent of those with the strongest NEP values claim to have taken part in such a protest. However, when it comes to whether or not a respondent is a member of an environmental group, the NEP scale does not contribute to our understanding of this.

*Table 3.7 NEP and Promotion of the Environment as a Social and Political Issue (Exp (B))*

	Member	Money	Protest	Petition
NEP	1.49	2.49**	2.33***	2.46**
Constant	0.01**	0.01**	0.003***	0.01**
Cox and Snell R <sup>2</sup>	0.00	0.04	0.01	0.04
Nagelkerke R <sup>2</sup>	0.01	0.06	0.03	0.06
-2 Log Likelihood	275.72	826.33	373.61	942.77
Chi-Square	1.47	31.53**	9.35**	36.91**
N	826	825	827	827

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

### 3.5 Conclusion

The purpose of this chapter is to examine the influence of the NEP on environmental attitudes and behaviour in Ireland. As noted in our introduction the NEP describes a new environmental consciousness that links beliefs about the relationship between humanity and nature, the importance of economic growth and the value of technology<sup>16</sup>. As defined in our research, such a view holds that nature is fragile and needs protection from destructive human domination, that many of the resources available on the planet are limited and that less emphasis should be placed on economic growth.

The NEP in Ireland is articulated in terms of a concern that nature is fragile and needs protection especially in the face of rapid economic growth. It is a cultural paradigm extensively held by the Irish population, although strength of commitment and adherence varies. We developed a one-dimensional measure of the NEP scale using items from both the ISSP Environmental module and the ISPAS self-completion module. On our NEP scale, we found that the vast majority of Irish respondents are disposed towards the view that nature as fragile, limited and in need of our care and attention. Those who are most likely to view nature in this way are the young, those with higher levels of education and those who do not attend religious services on a regular basis.

<sup>16</sup> In developing our NEP scale we did consider a number of technology-science items but these were not included in our scale (see Footnote 3 of this chapter).

While the NEP scale and the distribution of Irish respondents on it is interesting in and of itself, does it tell us anything more about differences in people's environmental attitudes and behaviours than the socio-demographic factors? The NEP has a significant impact on differences in Irish environmental attitudes and behaviours in eleven of the sixteen sets of environmental attitudes and behaviours that we consider. In all cases those who regard nature as fragile, limited and in need of our care and attention are more likely to have environmental attitudes and behaviours that reflect their broader concern for the environment. In four of our sixteen sets of attitudes and behaviours, the impact of the NEP scale explains more of the variance in Irish attitudes and behaviours than the socio-demographic variables. An instance where the NEP scale stands out is with regard to people's willingness to take on the costs of protecting the environment. Where the socio-demographic factors explained six percent of the variance, the NEP by itself explains fifteen percent. It should also be noted that the NEP scale also explains as much of the variation (15 percent) in people's feelings of environmental efficacy as does our set of socio-demographic variables. In the remaining cases where the NEP scale has a significant impact, the percentage of the variance that the NEP scale explains is less than ten percent. In these instances it explains about the same amount, or slightly less, than that explained by the set of socio-demographic variables. The instances where the NEP scale does not contribute to our understanding of differences include trust in government departments to provide them with the correct information about the causes of pollution, whether or not they agree that manufacturers should be responsible for recycling the goods they produce, and why some people are members of environmental groups while others are not. Thus the evidence suggests that the NEP scale is as important a factor in understanding differences between people's environmental attitudes and behaviours as the set of socio-demographic variables that we considered in the previous chapter.

The NEP would appear to be a major cultural resource on which Irish respondents draw in developing pro-environmental attitudes and behaviours. This is especially so among those with a higher level of education and younger respondents. In this chapter we have reported how it is positively related to an increased perception of and concern about the environmental dangers, contributes to an increased willingness to pay higher costs to protect the environment and to pay for recycling, and to an increased sense of efficacy in pursuing environmental goals. It is positively related to an increased level of trust in environmental groups, and a strong preference for recycling rather than landfill or incineration. Drawing on the NEP also contributes to pro-environmental practices including cutting back on driving and sorting household waste for recycling. Furthermore, it is a cultural resource that can contribute to



mobilisation around environmental issues in terms of giving money to environmental groups, signing petitions and protesting.



## **Chapter 4**

### **The Impact of Post-Materialism on Environmental Attitudes and Behaviours in Ireland**

#### **4.1 Introduction**

In recent decades it has been proposed that post-war affluence in the western world, accompanied by the absence of war, has had a profound effect on peoples' attitudes and values across a wide range of subjects. Those born before the Second World War are expected to have a different set of attitudes and values, 'materialist', from those born after the war, 'post-materialist'. It is argued that the latter group's attitudes and values will have been shaped by their experience of affluence and relative peace during their formative years. Their ambitions and priorities for themselves and their societies are expected to be different because, unlike earlier generations, they could take relative economic well-being and physical security for granted. Post-materialist theory has been used to explain the appearance of new issues, new social movements and in particular the emergence of 'green' and 'new left' parties in a number of European countries. (Kriesi, 1989; Rohrschneider, 1990; Poguntke, 1987; Muller-Rommel, 1985, 1989 and 1990; Dalton, 1996) The new set of issues includes matters such as quality of the environment, alternative lifestyles and minority rights. It is argued that these are not debated along traditional lines but along a 'materialist – post-materialist dimension' (MPM). (Inglehart, 1984, p.25; Poguntke, 1987, p.77; Muller-Rommel, 1989, pp115-116; Dalton, 1996, p.153)

The purpose of this chapter is to examine the influence of post-materialist values on environmental attitudes and behaviours in Ireland. The first section of this chapter sets out how we identify those with post-materialist values and those without. We then examine the distribution of post-materialist values among Irish respondents taking into account a variety of socio-demographic characteristics. Finally, we examine the influence post-materialism has on both respondents' environmental attitudes and their behaviours.

#### **4.2 Measuring Post-Materialist Values**

Inglehart argues that in the western world there has been a shift away from the materialist concerns of pre-industrial and industrial societies towards post-materialist values. Where the former are concerned

about supporting the established order through the maintenance of law and order and preservation of economic gains, the latter place greater emphasis on individual self-expression, greater participation in decision-making, freedom and quality of life. (Inglehart, 1977, p.182; Inglehart, 1984; Inglehart et al, 1994, p.336; Poguntke, 1987, p.77; Muller-Rommel, 1989, pp115-116; Dalton, 1996, p.153) The theory that Inglehart proposes is based on two hypotheses: scarcity hypothesis and socialisation hypothesis. The scarcity hypothesis notes the role of short-term changes, or period effects, and posits that periods of prosperity lead to an increase in post-materialist goals while periods of scarcity lead to greater concern with materialist goals. The socialisation hypothesis implies that long-term cohort effects also exist. The values of a given generation tend to reflect the conditions prevailing during its pre-adult years. When both hypotheses are taken together they imply that value change is characterised by period effects superimposed on cohort effects. (Inglehart, 1990, pp79-83) Inglehart (1981, p.886) expects that there will be a 'significant watershed' in terms of values and attitudes between the pre-war and post-war generations. Since the war, the formative years of younger generations have been ones of increased economic and physical security so these groups are expected to be more post-materialist than older generations.

In order to measure post-materialist orientations, the ISSP Environment module uses a forced-choice question that asks respondents to select their first and second priority for Ireland from four items. The four items from which a respondent must select are:

- a) Maintain order in the nation;
- b) Give people more say in the decisions of the government;
- c) Fight rising prices; and
- d) Protect freedom of speech.

The theoretical framework proposed by Inglehart (1990, pp134-135) proposes that the four items will form two groups. Those items that emphasise physical and economic security (options a and c) will form the materialist group, while those focused on participatory concerns (options b and d) will form the post-materialist group. It is expected that materialist goals will be given higher priority by those who experienced physical or economic insecurity in their formative years. However, those who were raised under more secure conditions will have a different view and are expected to emphasise the post-materialist goals. All other combinations of the four items are considered to be a mixed value orientation. (Inglehart, 1990, p.75) The assumption underlying this four-item instrument is that the rank order of people's priorities reveals 'something pervasive and enduring' in their outlook. (Inglehart,

1990, p.131) It should be noted that although Inglehart initially developed a twelve-item measure that is considered to be more reliable (Inglehart, 1990, pp74-75 and p.115), the ISSP has opted for the four-item format (as have Eurobarometer). Inglehart (1990, p.131) favours a more broadly based index with a larger number of items because responses to some of the items, such as 'fighting rising prices', may be sensitive to short-term forces, that is, they may refer to a 'serious current problem'.

### **4.3 Post-Materialist Values in Ireland**

While Inglehart's post-materialism has been criticised by social scientists from a variety of perspectives, perhaps the most serious of these is that there is little evidence of people holding post-materialist values. (Lijphart, 1981; Clarke et al, 1991) Lijphart (1981, p.40) argues that 'postmaterialism has so far not become the source of a new ideological dimension in many party systems'. Lijphart (1981, p.41) notes that in Inglehart's surveys of 1970, 1973 and 1976, 'the average proportion of postmaterialist respondents that he found was a meagre 11.5 percent'. Inglehart (1994, see Table 5, p.350) replied that, while all European countries cannot be regarded as post-materialist, most are heading in that direction. Can the same be said of Ireland?

With regard to the Irish case, Inglehart (1995, p.63) concluded that there has been 'a decline in the proportion of Materialists, and an increase in the proportion of Postmaterialists' between 1970 and 1993. As is evident from Table 4.1, since the 1970s, there has been a slight increase in the percentage of people who are classified as post-materialists. The percentage of those coded as materialists is now half what it once was. Moreover, the difference in the percentage of people who are classified as having materialist orientations and those who are seen as having post-materialist orientations has narrowed. However, the narrowing of the gap between percentages of materialists and of post-materialists has had little to do with the increase in the percentage of those who have a post-materialist outlook. The important factor contributing to the narrowing of this gap has been the sharp drop in the percentage of those classified as materialists. While a shift in the value orientation of Irish society has indeed taken place, it is from materialists to the 'mixed' group. The percentage of people in this middle group has grown from 47 percent in 1976 to just over 68 percent in 2002. There is little evidence of a shift from either the materialist or mixed groups to the post-materialist group. So while one can conclude that a smaller proportion of Irish people adopt a materialist outlook, it would not be fair to suggest that anything other than a marginal increase in the proportion of those with a post-materialist orientation has taken place.

*Table 4.1: Difference between Materialists and Post-Materialists in Ireland in 1976, 1982, 1992 and 2002. (%)*

Year	Materialist	Post-Materialist	Difference
1976	46.9	6.1	-40.8
1982	40.8	7.6	-33.2
1992	27.0	13.7	-13.3
2002	22.9	8.9	-14.0

*Sources:* Eurobarometer Trend File 1976-1992; ISPAS 2002

It may be argued that focusing on the overall percentage of respondents who have post-materialist values is somewhat misleading. After all, the theory suggests that there ought to be differences between particular cohorts, that is, some groups of people should be more associated with post-materialism than others. Differences in the formative experiences of respondents ought to help us understand whether or not they hold post-materialist values. However, ‘formative influence’ is difficult to operationalise as this information is not available to us. Even if we did have such information it would be of questionable reliability, as the respondent may not know, or be unable to remember the details.

One variable that might capture a formative effect is age. There is an expectation that younger people, because they were born at a time of greater affluence and security, are more likely to adopt a post-materialist outlook than older people. However, a draw back with this variable is that it is not possible to separate out a life-cycle effect. This means that we cannot be sure if values are being influenced by the respondents’ formative experiences or the current stage-of-their-lives. That said, Abramson and Inglehart (1992, p.200) argue that post-materialism among younger birth cohorts is not a matter of ‘youthful idealism’ but of being young during an ‘unprecedented’ historical period. The distinctive outlooks of generations follow not from life-cycle effects but from different environments in which individuals come to maturity.

Education is also believed to affect post-materialist orientations in the individual in two ways. First, rising levels of education have generally promoted higher levels of ‘cognitive mobilisation’ – a process entailing ‘the dissemination of skills needed to cope with an extensive political community’. (Inglehart, 1990, p.337) Higher education, in particular, stimulates values that emphasise the ‘needs for belonging, esteem, and self-realisation’. (Inglehart, 1977, p.5) Second, experience of higher education is a reflection of ‘formative security’, that is, children of well-off parents are the most likely to attend university. Again, though, there are disadvantages to using this variable, as the significance of education is tied in with birth cohort. In particular, people born after the war had greater educational opportunities than those who were born before the war. (Scarborough, 1995, pp148-149)

Another aspect of respondents' formative influence is their experience of economic security in their formative years. It is expected that those who felt most secure are more likely to adopt a post-materialist outlook than those who felt less secure. Unfortunately, reliable data of how secure respondents felt growing up is not available. That said, Bryson and Curtice (1998, p.131) suggest that the respondent's own income can be used as a proxy because of 'the limited amount of social mobility within developed societies' (we also consider the respondent's social class).

The results presented in Table 4.2 show that age is in fact the only factor that is important in helping us distinguish between those who have post-materialist values and those who do not. The evidence suggests that younger respondents are more likely to have post-materialist values than older respondents. In Ireland the most important differences in the percentages of those holding post-materialist values is between those born before and those born after 1970. In the case of the latter group, 15 percent have a post-materialist orientation, while of those born between 1950 and 1970, eight percent of these have post-materialist values, with just five percent of those born before 1950 revealing post-materialist orientations.

*Table 4.2 Logistic Regression of Socio-Demographic Variables and MPM Scale (Exp(B))*

	Post-Materialist
Female	1.10
Age	0.97**
Education	0.67
Urban	1.38
Religious Attendance	0.79
Social Class	0.99
Income	1.11
Public Sector	1.08
Constant	0.47
Cox and Snell R <sup>2</sup>	0.03
Nagelkerke R <sup>2</sup>	0.06
-2 Log Likelihood	447.48
Chi-Square	20.51**
N	764

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

#### 4.4 Post-Materialism and the Environment

Inglehart (1990 and 1997) and Dalton (1994) argue that environmentalism is a consequence of socio-economic progress in advanced industrial democracies. Dalton and Rohrschneider (1998, pp102-103) note that from the point of view of this theoretical framework 'the rise of environmentalism primarily

reflects a change in the political orientations of the public, rather than changes in the environment'. Since those born after the Second World War are believed to take economic well-being and physical security for granted, it is argued that this enables them to focus more upon less material issues such as the environment. As people become more concerned about their quality of life, and less concerned about advancing their material welfare, they are expected to be more concerned about the impact of industrialisation and its effect on the environment. Inglehart (1990, p.56) states that one consequence of the shift from materialist priorities to post-materialist goals 'has been a diminishing emphasis on economic growth in these societies, together with increasing emphasis on environmental protection and preserving the quality of life – if necessary, even at the expense of economic growth... Postmaterialists place more emphasis on protecting the environment and are far more likely to be active members of environmental organizations than are Materialists'.

*Table 4.3 MPM Scale and Environmental Attitudes (Standardised Coefficients)*

	Perceptions of Danger	Willingness to take on costs	Environmental Efficacy
Post-Materialists	0.03	0.04	0.02
R <sup>2</sup>	0.00	0.00	0.00
F-Ratio	1.14	1.70	0.45
N	965	1097	1113

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

*Table 4.4 MPM and Trust as Source of Information about the cause of Pollution (Exp(B))*

	Business and Industry	Government Departments	Environmental Groups
Post-Materialists	0.78	0.92	1.21
Constant	0.08**	0.35**	1.72**
Cox and Snell R <sup>2</sup>	0.00	0.00	0.001
Nagelkerke R <sup>2</sup>	0.001	0.00	0.001
-2 Log Likelihood	588.36	1306.49	1496.03
Chi-Square	0.35	0.13	0.78
N	1134	1145	1142

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

In general, when we examine the relationship between whether or not respondents hold post-materialist values and their environmental attitudes and behaviours, we find that there are few statistically significant relationships. As is evident from Tables 4.3 to 4.7, whether a respondent holds post-materialist values or not does not help our understanding of their perceptions of how dangerous particular threats are for the environment, their willingness to take on environmental costs, their sense of environmental efficacy, how much trust they place in various institutions to provide them with correct information about the causes of pollution or their attitudes to dealing with environmental



problems. Furthermore, holding post-materialist values does not influence the extent of recycling, or limiting of driving in order to protect the environment, that people engage in. In fact, knowing that a person holds post-materialist values only tells us something about their willingness to donate money to an environmental group and to sign a petition about an environmental issue.

*Table 4.5 MPM and Attitudes to Dealing with Waste (Exp(B))*

	Incinerators	Landfill	Pay to Recycle	Manufacturer Recycle
Post-Materialists	0.72	1.29	0.99	1.02
Constant	1.14	1.21*	4.51**	3.40**
Cox and Snell R <sup>2</sup>	0.002	0.001	0.00	0.00
Nagelkerke R <sup>2</sup>	0.003	0.002	0.00	0.00
-2 Log Likelihood	896.52	950.59	735.99	792.77
Chi-Square	1.51	0.79	0.001	0.004
N	649	692	777	740

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

The evidence presented in Table 4.7 indicates that when it comes to promoting the environment as a social and political issue those who hold post-materialist values are more likely to act in an indirect manner than those who do not hold such values. While post-materialists may be concerned about wider involvement in the decision-making process, it would appear that when it comes to acting, the only role they are willing to play is an indirect one. One might have expected them not only to be willing to provide support in terms of money and a willingness to sign petitions, but also to be willing to join environmental groups and to take part in protests over environmental issues. In terms of what those with post-materialist values are willing to do, 31 percent report that they have given money to an environmental group while 39 percent report that they have signed a petition about an environmental issue. Amongst those who do not hold post-materialist values, only 18 percent have donated money with just less than a quarter reporting that they have signed a petition.

*Table 4.6 MPM and Reported Environmental Behaviour (Exp(B))*

	Recycle	Cut back on Driving
Post-Materialists	0.73	1.16
Constant	4.53**	0.48
Cox and Snell R <sup>2</sup>	0.001	0.00
Nagelkerke R <sup>2</sup>	0.002	0.00
-2 Log Likelihood	1039.51	1163.65
Chi-Square	1.31	0.31
N	1087	921

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

*Table 4.7 MPM and Promotion of the Environment as a Social and Political Issue (Exp(B))*

	Member	Money	Protest	Petition
Post-Materialists	1.77	1.95**	0.75	2.02**
Constant	0.03**	0.23**	0.05**	0.31**
Cox and Snell R <sup>2</sup>	0.001	0.01	0.00	0.01
Nagelkerke R <sup>2</sup>	0.004	0.01	0.001	0.01
-2 Log Likelihood	360.41	1147.12	461.05	1311.12
Chi-Square	1.40	8.08**	0.32	10.21**
N	1168	1166	1168	1170

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

#### 4.5 Conclusion

Post-Materialism posits that, in the western world, the affluence and relative peace of the post-war era has meant that those born during this period have different values and attitudes from those born before the war. The international literature would lead us to expect that those with post-materialist values would be more likely than their counterparts to have pro-environmental attitudes and to act in a manner that protects the environment. However, in Ireland, only a small percentage of people can be said to hold post-materialist values. Those with post-materialist values are more likely to be found among younger age cohorts than older age cohorts. Moreover, rather than the war serving as a watershed between materialist and post-materialist values, in Ireland the evidence suggests that those born after 1970 are more likely to have post-materialist values than those born before 1970.

When it comes to understanding differences between Irish people's attitudes and behaviours, the evidence suggests that post-materialism is not of much help. In this chapter we compared those who have post-materialist values with those who do not, and in only two of our sixteen sets of attitudes and behaviours did we find statistically significant relationships. As noted above, those with post-materialist values are more likely than those who do not hold such values to be involved in indirect methods of promoting the environment as a social and political issue. However, while these relationships were statistically significant, post-materialism explained only one percent of the variance in whether or not the respondent had signed a petition or donated money to an environmental group. For both of these types of pro-environmental behaviour, post-materialism does not explain as much of the variance as either the set of socio-demographic values we have examined, or the NEP scale. As such, then, post-materialism is not a particularly useful perspective in understanding differences between Irish people's environmental attitudes and behaviours.

## Chapter 5

### The Impact of Cultural Values on Environmental Attitudes and Behaviours in Ireland

#### 5.1 Introduction

The third and final theoretical perspective that we consider is Grid-Group Theory (GGT) or, as it is sometimes referred to, Cultural Theory. Initially developed in the 1970s by Douglas, and then in cooperation with Wildavsky in the 1980s, this is a theory of social relations and cultural preferences. Two central aspects of social relationships are explored along two dimensions. The Grid dimension focuses on restrictions to individual behaviour, the extent of acceptance of rules and regulations and is sometimes referred to as the ‘legitimation of external prescription’<sup>17</sup>. The Group dimension of social relations refers to the extent of a sense of responsibility and commitment that individuals have to units greater than themselves and the extent to which they are incorporated into these units. (Grendstad, 2003; Vaughan, 2002; Coughlin and Lockhart, 1998) Though GGT has been developed since the 1970s, it is only in the 1990s that it has begun to be tested empirically using quantitative studies. (Thompson et al, 1990; Coughlin and Lockhart, 1998; Ellis and Thompson, 1997; Grendstad, 2000, 2003) While the empirical analysis has focused on the cultural biases that result from the interaction of the two dimensions, the experimental nature of the items provided in the ISSP Environmental module, and our analysis of the Irish data, has led us to focus our attention on the effect that each dimension has on environmental attitudes and behaviours.

As outlined in Chapter 1, Cultural Theory is a theory about the relationship between four forms of social organisation and the cultural biases that contribute to maintaining and legitimising these organisational patterns. These four forms of organisation and cultural biases are ‘hierarchy’, ‘egalitarian’, ‘individualism’ and ‘fatalism’. These four organisational patterns and related biases are the consequence of the interaction of two dimensions, Grid and Group. Grid refers to the extent to which there are clear role definitions within a group or society, and clear requirements to maintain them. Group refers to the strength of commitment to, and concern for, the group or society as a whole. When the two dimensions, ‘Grid’ and ‘Group’, interact they generate the four cultural biases. Central aspects of these cultural biases are legitimations regarding appropriate relationships between members of each of the four forms of social organisation in order to maintain it. These legitimations also include

---

<sup>17</sup> Legitimacy of external prescription refers to the varying ease with which persons accept another person’s judgements are valid for, and binding on, them. (Coughlin and Lockhart, 1998, p.35)

definitions of nature and the environment (see Chapter 1). This exploration of the relationship between cultural biases and attitudes to nature, and to risk, is a prevalent preoccupation within cultural theory.

Empirical quantitative analysis of these four cultural biases as published in the international literature have focused on exploring indices and scales indicative of each of the cultural biases, and then exploring the relationship between these biases and environmental attitudes. This has had varying degrees of success, especially in terms of identifying indices and scales to differentiate sufficiently between these four biases. (Thompson et al, 1990; Coughlin and Lockhart, 1998; Ellis and Thompson, 1997; Grendstad, 2000, 2003) However, the early piloting for the ISSP Environmental module of the proposed items to measure the cultural biases was not particularly successful (Jarvis et al, 1999), so the relevant battery of items (E23) was included as an optional module. It was decided, due to the interest in potential explanatory capacities of this theory, to include it in the Irish survey.

The purpose of this chapter is to use the data available to us to explore the possibility of identifying Grid and Group dimensions and the four cultural biases. Having established sufficiently robust scales identifying both the Grid and Group dimensions, we continue to explore their relationships to environmental attitudes and behaviour in Ireland. The first section of this chapter sets out how we arrived at our measures of both Grid and Group dimensions. We then examine the distribution of Irish respondents on these dimensions taking into account a variety of socio-demographic characteristics. Finally, we examine the influence of respondents' Grid and Group values on both their environmental attitudes and their behaviours.

## **5.2 Grid and Group Dimensions in Ireland**

In the ISSP module, eight items were proposed as measuring each of the cultural biases. However, as noted above, the team that designed the ISSP Environmental module were not happy with the results that this battery of items produced in a pilot test. Jarvis et al (1999, pp22-26) report that 12 items were piloted in Britain in October 1998, but that the results of this pilot were not all that encouraging<sup>18</sup>;

---

<sup>18</sup> The factor analysis that they carried resulted in four factors but these were not quite as expected. On one of these factors two 'fatalism' items loaded together while on another three 'hierarchy' items loaded together. In both cases the alphas for the resulting scales were less than 0.50. Moreover, the first factor did not distinguish between 'individualism' and 'egalitarianism'. That said, the resulting scale had an alpha of just less than 0.70. The fourth and final factor was composed of a 'fatalism' item and an 'individualism' item.

consequently it was left open to each national research team as to whether or not they would include this battery of items.

When we examined the battery of eight items (E23) intended to identify each of the four cultural biases we found that the scales were generally very weak. However, this analysis indicated that it might prove fruitful to look at the two dimensions (Grid and Group) separately rather than examine the four cultural biases directly.

The Irish research team decided to explore (a) whether we could identify indices of the Grid and Group dimensions and scale them in a sufficiently robust manner and (b) whether these dimensions contributed to our understanding of the 16 sets of environmental attitudes and behaviours of interest to us. In other words, are they cultural sources of support for pro-environmental views and practices? We were interested both in how these two dimensions might, independently, be related to environmental attitudes and behaviours, and, if both were significantly related to the same set of attitudes or behaviours, whether we could then identify a particular cultural bias, each bias being, in cultural theory, identified by the interaction of the *two* dimensions. In developing measures of these two dimensions we not only utilised some of the items suggested by the ISSP Environmental module for exploring cultural biases, but also considered a variety of items from the ISPAS core module that appeared theoretically relevant.

The Group dimension is concerned with strength of commitment to the group or society as a whole. This can manifest itself in contemporary society in attitudes to inequality and collective attempts to reduce it. Moreover, it has also been found that commitment to the group or society is related to attitudes to the environment. The Grid dimension is concerned with strength of adherence to defined roles and acceptance of authority. This can manifest itself in attitudes to authority, perceptions of government-citizen relationships, and a sense of personal and political efficacy. Again there is some evidence from the international literature that this may influence environmental attitudes and behaviours. (Ellis and Thompson, 1997; Grendstad, 2000; Steg and Sievers, 2000)

The Group dimension is concerned with strength of commitment to the wider society beyond oneself and, we have defined it in terms of attitudes to equality and collective egalitarian efforts. The factor analysis that lead to its identification in the Irish context are presented in Table 5.1. These items refer to attitudes to economic inequality and in particular to collective attempts to reduce it through redistribution. Of the six items selected, agreement with four of them indicates a high-Group position

while agreement with the remaining two items indicates a low-Group position. There is a notable tension between these two sets of items. (see Table A5.1) On the one hand, when respondents are asked about redistributing income from rich to poor, a majority of respondents agree that ‘it is the responsibility of the government’, that the ‘government should redistribute’ and that ‘income tax should be increased’. This implies that the majority of Irish people aspire to the notion of equality. On the other hand, when it comes to the reality of inequality only a quarter of respondents agree that ordinary people get their ‘fair share of the nation’s wealth’. Moreover, when it comes to attitudes to the rights of people to control their own wealth, large majorities of Irish people believe that there is ‘nothing wrong’ with some people being richer than others and support the view that people should be left to enjoy their own money (one presumes without the interfering attention of the state).

*Table 5.1: Grid and Group Scales Items and Principal Component Factor Loadings*

	Group	Grid
Government should redistribute income from the better-off to those who are less well-off <sup>a</sup> (e23_1)	<b>0.58</b>	0.33
Ordinary working people get their fair share of the nation’s wealth <sup>c</sup> (a11_1)	<b>0.57</b>	-0.03
There is nothing wrong with some people being a lot richer than others <sup>c</sup> (a3_7)	<b>0.56</b>	-0.07
It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes <sup>a</sup> (e1_2)	<b>0.54</b>	0.30
People with money should be left to enjoy it (e23_4)	<b>0.53</b>	-0.27
Income tax should be increased for people on higher than average incomes <sup>b</sup> (a11_2)	<b>0.51</b>	0.25
Sometimes politics and government seem so complicated that a person like me cannot really understand what is going on <sup>b</sup> (a9_1)	0.09	<b>0.61</b>
There is little that people can do to change the course of their lives <sup>a</sup> (e23_2)	0.09	<b>0.60</b>
The ordinary person has no influence on politics <sup>b</sup> (a9_2)	0.13	<b>0.54</b>
One of the problems with people today is that they challenge authority too often <sup>a</sup> (e23_3)	-0.29	<b>0.54</b>
It would be better if more people with strong religious beliefs held public office <sup>b</sup> (a3_6)	0.13	<b>0.49</b>
Variance Explained	17.51	17.18
Total Variance Explained	34.69	

<sup>a</sup> Direction of item reversed so that ‘agree’ has high score; <sup>b</sup> Seven point item recoded so that now scored from 1 to 5; <sup>c</sup> Direction of item reversed so that ‘agree’ has low score and seven point item recoded so that now scored from 1 to 5.

The resulting scale indicates that those who have high-group scores are more willing than those with low scores to act for the betterment of the wider group or society, in particular, through fiscal policies to

reduce economic inequality. Those who have low scores on this scale are less willing to consider the needs of the wider group or society and do not favour sharing their own earnings or wealth with those who have less (believing that not only is it theirs to enjoy but that there is nothing wrong with such differences).

The Grid dimension is concerned with attitudes to authority and sense of efficacy and the items that load on our second component are held to reveal this dimension. Two of the items proposed by the ISSP Environmental module for measuring cultural biases are used while the other three are taken from the core module of ISPAS. The items used here tap attitudes to the relationship between government and citizen, relationships to authority and a sense of personal and political efficacy. Those who have high scores on this dimension feel that the ordinary citizen has little influence, that authority should not be challenged, and have little sense of personal or political efficacy. They feel that there is an order that should be respected. These people feel that authority should not be challenged, that the world, and in particular politics, is complicated and best left to those who understand it. At the other end of the scale (low-grid) are those who are less willing to accept 'external direction', be it based on authority derived from experience or knowledge or religious beliefs. They believe that those in positions of authority can be challenged and that their own actions will have some effect on whatever problem they tackle.

### **5.3 Distribution of Irish Respondents on the Grid and Group Scales**

In this section we consider how Grid and Group values are distributed not only within the sample as a whole but also across various socio-demographic groupings. This method allows us to identify those sub-groups that are most associated with strong Group and Grid values and those that are not. In terms of the overall sample, on both the Grid and Group scales the mean and median scores are more or less equal. The position of the typical respondent on the Group scale is slightly to the high-Group end of the scale, that is, the end that favours collective action to remove inequality (both the mean and median positions on this scale are 3.11). At the extreme ends of the Group scale about four percent of respondents score between 1 and 2, while about five percent score between 4 and 5. On the Grid scale, the position of the typical respondent is slightly towards to low-Grid end of the scale, that is, the end that is critical of external direction and has a sense of efficacy in both public and private spheres (the mean on this scale is equal to 2.82 while the median is equal to 2.83). About twelve percent of respondents have a score between 1 and 2 on the Grid scale while four percent score between 4 and 5

on the Grid scale. For the most part then, the majority of Irish people cluster near the centres of both scales. How do values on both of these scales differ within socio-demographic cohorts?

The results presented in Table 5.2 indicate that gender, education, religiosity, social class, net household income and whether or not the respondent works in the public or private sectors help us understand differences in respondents' scores on the Grid scale. Moreover, these socio-demographic variables explain a fifth of the variance in the Grid-values of Irish respondents. However, as will become evident below, only education, social class and income help us understand the differences between those who are critical of authority and hierarchy and who feel that they can influence what happens to them (those who have low-Grid scores, that is, less than 3) and those who do not (those who have high-Grid scores, that is, greater than 3).

The evidence presented in Table 5.2 suggests that women and those who attend religious services at least once a week are more willing to accept external direction uncritically than their counterparts. That said, the mean scores for both sexes suggest that, in general, members of both sexes are somewhat critical of authority, the mean score for women is 2.88 while that for men is 2.76. When we compare the religiosity of respondents the differences between the mean scores of the two groups is much greater. The mean score on the Grid scale of those who are infrequent attendees at religious services is 2.64 while that for respondents who go to church services at least once a week is 2.94, indicating that they are less critical of authority than those who do not go to church at least once a week. When we consider the relationship between education and the Grid dimension, those with higher levels of formal education are less willing to accept external direction uncritically. When we compare the mean scores of those who have a university degree or more with those whose highest formal educational achievement is the Intermediate/Junior Certificate, a mean score of 3.08 for the latter group suggests that they are uncritical of external direction, while a mean score of 2.43 (the lowest mean score on the Grid scale for the various socio-demographic variables) for the university group implies that they are much more critical of authority and hierarchy. The relationship between income and the Grid dimension suggests that those who earn more are less willing to accept external direction uncritically than those who earn less. A mean score for those who earn less than £10,000 per year of 3.16 is the highest mean score for any of the socio-demographic cohorts on the Grid scale. This indicates that as a group they are the least critical of authority, seek direction from others, and feel that their own actions will have little or no effect on improving their lives. The mean score on the Grid scale for those who earn more than £30,000 per year is 2.55, which suggests that these respondents are much more willing to look to themselves rather than others for direction. Social class and whether or not a person works in the public or private sector also



have significant effects on the Grid scale. Those in the higher social classes are less willing than those in the lower social classes to accept external direction uncritically, as are those who work in the public sector. The mean score on the Grid scale of those in Social Class I (Higher Managerial and Professional) is 2.45 while the mean score of those in Social Class VI (Unskilled Manual Labour) is 3.04. The comparison between those working in the public and private sectors is not quite so stark as the mean scores for both are less than three. Those who work in the public sector have a mean score of 2.71 while those who work in the private sector have a mean score of 2.83.

*Table 5.2: Regression Analysis of Socio-Demographic Variables and Grid and Group Scales (Standardised Coefficients)*

	Grid-Dimension	Group-Dimension
Female	0.08*	0.07
Age	0.03	0.04
Education	-0.20**	0.01
Urban	0.03	0.04
Religious Attendance	0.14**	0.04
Social Class	0.13**	0.04
Income	-0.19**	-0.17**
Public Sector	-0.08*	0.05
Adj.R <sup>2</sup>	0.21**	0.04**
F-Ratio	26.35	4.61
N	772	746

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

When it comes to understanding differences in people's values on our second dimension, the Group scale, the socio-demographic variables are not quite as helpful. Income is the only variable that has a statistically significant effect on the Group scale. The relationship between these two variables implies that those on lower incomes have higher Group-values than those on higher incomes. As such then, income helps us to understand differences between those who wish to act with others to deal with problems such as economic inequality, and those who are less willing to do so. The mean position on the Group scale of those who earn the 'least' is 3.17, while the mean position of those who earn the 'most' is 2.91. The division would appear to be one between those 'who do not have' believing that others should share with them, while those 'who have' being somewhat reticent about this.

#### **5.4 Grid and Group Scales and Environmental Attitudes and Behaviour**

Now that we have considered the distribution of Grid and Group values in Ireland, how do these values affect attitudes towards the environment and people's reported behaviours? Research within Cultural Values tradition would lead us to expect that a favourable attitude to equality and collective efforts in

this direction (high Group) would be positively related to environmental concerns, while an acceptance of authority would lead to a sense that environmental concerns can be left to authority figures and experts to manage, and lessen a sense of efficacy in bringing about pro-environmental change.

When we examined the extent to which a combination of the Grid and Group variables (thus identifying the four cultural biases) were related to pro-environmental attitudes and behaviours, we found that the combination of Grid and Group together was significantly related to four of the sixteen environmental attitudes and behaviours. However, by itself the Grid dimension has a significant influence on eight of the sixteen environmental attitudes and behaviours, while the Group dimension has a significant influence on two of the sixteen.

As with the earlier chapters, in order to enhance our discussion of the relationship between respondents' Grid and Group values and their environmental attitudes and behaviours, we not only consider the results of regressions analyses but also divide both the Grid and Group scales into two sub-groups. The two sub-groups that we compare are the twenty percent of respondents who have the highest scores on each of the two scales (in effect, those who scored between 3.36 and 5.00 on the Grid scale; and 3.61 and 5.00 on the Group scale) and the twenty per cent of respondents who have the lowest scores on these scales (in effect, those who scored between 1.00 and 2.27 on the Grid scale; and 1.00 and 2.61 on the Group scale).

#### *5.4.1 Environmental Attitudes*

##### *5.4.1.1 Perceptions of environmental danger*

The first attitude that we consider is people's perceptions of danger to the environment. As noted in Chapter 2, Irish people believe that the environment is in danger, to varying degrees, from a variety of threats. As Cultural Theory would suggest, there is a statistically significant positive relationship between respondents' perceptions of the dangers posed to the environment by a variety of threats and the Group dimension, that is, attitudes to equality. (see Table 5.3) That said, it should be noted that even those with low-Group scores are concerned about the dangers posed to the environment by these threats. Those with the lowest Group scores have mean of 3.71 on the scale that measures perceptions of danger while those with the highest Group scores have a mean of 3.90. The estimated coefficient for the Grid dimension is negative and not significantly different from zero. As such then, the important difference in terms of perceptions of danger would appear to be between those who most strongly favour greater equality, and collective policies to ensure this, and those who do not.

*Table 5.3: Grid and Group Scales and Environmental Attitudes (Standardised Coefficients)*

	Perceptions of Danger	Willingness to take on costs	Environmental Efficacy
Grid-Dimension	-0.05	-0.21**	-0.37**
Group-Dimension	0.13**	-0.02	-0.02
Adj.R <sup>2</sup>	0.01	0.04	0.13
F-Ratio	8.29**	24.35**	82.79**
N	930	1031	1046

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

#### 5.4.1.2 Willingness to take on extra costs and Environmental efficacy

As is evident from Table 5.3, only the Grid scale has a significant impact on both respondents' feelings of efficacy in tackling environmental problems and their willingness to take on extra costs to protect the environment. Those who are inclined to be critical of authority and who believe that their own actions are personally and politically efficacious feel that their pro-environmental actions make a difference. While those who feel personally and politically efficacious (low-grid) have a mean score on the environmental efficacy scale of 3.65, those who do not feel efficacious (high-grid) have a mean score of just 2.62.

Again, those who feel that they can act to improve their own lives and are more confident in their own ability to make decisions are more willing to take on the extra costs necessary to protect the environment. As with their feelings of efficacy in terms of dealing with environmental problems, the mean positions of those with the lowest and highest Grid scores differentiates between those who are willing to take on extra costs to protect the environment and those who are not. The mean position of those with the lowest Grid scores is 3.27 while that for those with the highest Grid scores is 2.62.

#### 5.4.1.3 Trust in sources of information

We noted in Chapter 2 that there are large differences in the degree to which Irish people trust a variety of institutions to provide them with correct information about the causes of pollution. The Grid and Group scales provide some interesting insights into the degree to which people trust industry and business, government departments and environmental groups to provide them with this information. The results presented in Table 5.4 suggest that those who are less inclined to be critical of authority (those with high-Grid scores) trust business and industry (though the overall model fit is not significant), and those who are less concerned about equality and collective action (those with low-Group scores) trust government departments. In terms of the percentages that express trust in business and industry, ten percent of those with the highest Grid scores said that they trusted them while six

percent of those with lowest Grid scores said that they did. So, while those who are more accepting of authority are more willing to express trust in business and industry, the percentage that do is very small. When it comes to trusting government departments, almost a third of those with the lowest Group scores say that they trust this source as opposed to just over 17 percent of those with the highest Group scores.

*Table 5.4: Grid and Group Scales and Trust as Source of Information about the cause of Pollution (Exp(B))*

	Business and Industry	Government Departments	Environmental Groups
Grid-Dimension	1.48*	1.13	0.71**
Group-Dimension	0.81	0.67**	1.29*
Constant	0.05**	0.86	2.19
Cox and Snell R <sup>2</sup>	0.005	0.01	0.01
Nagelkerke R <sup>2</sup>	0.01	0.01	0.02
-2 Log Likelihood	548.14	1224.64	1375.82
Chi-Square	5.00	11.41**	14.87**
N	1067	1073	1071

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

Both scales have a significant impact on the trust people have in environmental groups. Here trust is characterised by those who have high-Group and low-Grid scores. According to Cultural Theory, the combination of the two Grid and Group scales implies that it is those who adhere to an ‘egalitarian’ cultural bias (high-Group scores and low Grid scores) who trust environmental groups. When it comes to trust in environmental groups as a source of information about the causes of pollution, 68 percent of those with the lowest Grid scores, and thus critical of authority, and 69 percent of those with the highest Group scores, and thus in favour of greater collective action to achieve equality, say that they trust them to provide correct information about the causes of pollution. The cohort that is least likely to trust environmental groups is that with the highest Grid scores, but even here a majority of these are willing to do so, that is 54 percent, while 63 percent of those with lowest Group scores say that they trust environmental groups.

#### 5.4.1.4 Dealing with waste

When we shift our focus to people’s attitudes to ways of dealing with waste both the Grid and Group scales contribute something to our understanding of differences between people (see Table 5.5). Given that they trust business and industry to provide them with correct information about the causes of pollution, it is not surprising that those with high-Grid scores, and thus least critical of authority, also believe that incinerators are the best way of disposing of waste. Moreover, those with low-Group scores also support this view. The combination of both of these scales suggests, according to Cultural Theory,

that it is those who adhere to a 'fatalistic' cultural bias who favour the use of incinerators. The percentage of those with the highest Grid scores who agree that incinerators are the best way of dealing with waste is 45 percent as opposed to 37 percent of those with the lowest Grid scores who accept this position. The percentages of those on the Group scale that accept this position, are 36 percent of those with the lowest Group scores, as compared with 31 percent of those with the highest Group scores. When it comes to the development of new landfill sites to deal with the waste problem, it is those with high-Grid scores who again support such a view. The Grid scale highlights an important difference between people on this issue. Amongst those with the highest Grid positions 58 percent of these believe that new landfill sites should be developed. However, only a third of those who have lowest Grid positions agree with the development of new landfill sites.

*Table 5.5: Grid and Group Scales and Attitudes to Dealing with Waste (Exp(B))*

	Incinerators	Landfill	Pay to Recycle	Manufacturer Recycle
Grid-Dimension	1.48**	2.04**	0.58**	1.36*
Group-Dimension	0.75*	0.77	1.17	1.58**
Constant	0.87	0.38	13.34**	0.36
Cox and Snell R <sup>2</sup>	0.02	0.05	0.02	0.02
Nagelkerke R <sup>2</sup>	0.03	0.07	0.03	0.04
-2 Log Likelihood	834.26	868.13	673.54	737.83
Chi-Square	12.05**	33.02**	13.16**	16.28**
N	611	655	737	703

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

When it comes to the idea of paying extra to recycle, it is those who have low-Grid scores, and who thus tend to question authority and have a sense of personal and public efficacy, who are willing to do so. This is in line with what we have already seen with the measure of people's willingness to take on extra costs to protect the environment. Again it is those who have confidence in their own abilities to make decisions that are willing to rely on their own actions rather than on others to deal with the problems that they face. Amongst those with the lowest Grid scores, 88 percent are willing to pay more in order to recycle, as opposed to 64 percent of those with the highest Grid scores. Despite this difference, the general willingness of Irish people to take on such costs should be recognised.

In terms of other people being responsible for recycling, in particular the manufacturers of consumer products, those with high-Grid scores favour this view, as do those with high-Group scores. The combination of both scales suggests that it is those who adhere to a 'hierarchical' bias who believe that manufacturers should be responsible for recycling the consumer products that they produce. On the Grid scale, the percentage of those with the highest Grid scores who agree that the manufacturers of

consumer products should be responsible for recycling them is 71 percent, as opposed to 66 percent of those with the lowest Grid scores. The percentages of those in the low-group category who believe that the recycling of a consumer product is the responsibility of the manufacturer is 58 percent, as compared with 79 percent of those with the highest Group scores.

#### 5.4.2 Behaviour

##### 5.4.2.1 Recycling and Car Usage

Given their willingness to take on the extra costs of protecting the environment and more particularly their willingness to pay more in order to recycle, it is not surprising that those with low-Grid scores, and thus a sense of efficacy are more likely to report that they at least ‘sometimes’ sort household waste for recycling. Of those who believe in their own decision making power, that is, those with the lowest Grid scores, almost 90 percent of these people report that they sort household waste for recycling at least sometimes. As noted earlier the vast majority of Irish respondents report that they have done so and this is again reflected in the fact that 74 percent of those with the highest Grid scores, and hence least sense of efficacy, also report having done so at least ‘sometimes’. When it comes to those who have cut back on driving for environmental reasons, those with high-Group scores as well as those with low-Grid scores, are more likely than their counterparts, to have done so at least ‘sometimes’. This implies that those who adhere to an ‘egalitarian’ cultural bias are the ones who are most willing to reduce their car usage. In terms of the distributions on respondents on each of the dimensions, 38 percent of those with the lowest Grid scores and 34 percent of those with the highest Group scores report having cut back on driving for environmental reasons. This is compared with 29 percent of those with the highest Grid scores and 30 percent of those with the lowest Group scores who report having done so.

*Table 5.6: Grid and Group Scales and Reported Environmental Behaviour (Exp(B))*

	Recycle	Cut back on Driving
Grid-Dimension	0.65**	0.75*
Group-Dimension	1.24	1.28*
Constant	7.48	0.48
Cox and Snell R <sup>2</sup>	0.01	0.01
Nagelkerke R <sup>2</sup>	0.02	0.01
-2 Log Likelihood	971.23	1081.62
Chi-Square	1249**	8.52*
N	1013	870

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

#### 5.4.2.2 Promoting the environment as an issue

What about people's willingness to become involved in activities to promote the environment as a social and political issue? When it comes to people being involved in direct action to promote the environment as a social and political issue, either by being a member of an environmental group or taking part in a protest, neither the Grid nor the Group scales contribute to our understanding of such behaviours.

With regard to the more indirect methods of donating money or signing petitions, those who are more critical of hierarchical structures, people with low-grid positions, are more likely to do so than those who are less critical of those in authority or experts. A third of those with the lowest Grid scores report that they have given money to an environmental group as opposed to just 13 percent of those with the highest Grid scores. In terms of people's willingness to sign petitions, 38 percent of those with low Grid scores have done so compared to a mere 14 percent of those with high Grid scores.

*Table 5.7: Grid and Group Scales and Promotion of the Environment as a Social and Political Issue (Exp(B))*

	Member	Money	Protest	Petition
Grid-Dimension	0.71	0.51**	0.66	0.49**
Group-Dimension	1.10	0.87	1.38	1.23
Constant	0.07*	2.38	0.06**	1.31
Cox and Snell R <sup>2</sup>	0.002	0.03	0.004	0.04
Nagelkerke R <sup>2</sup>	0.01	0.05	0.01	0.05
-2 Log Likelihood	334.24	1054.53	441.34	1203.13
Chi-Square	1.77	33.70**	4.83	41.07**
N	1085	1078	1079	1083

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

## 5.5 Conclusion

As noted earlier, the operationalisation of the measures used in this chapter proved to be quite complex and challenging. Most scholars have operationalised such factors by developing measures of each of the four cultural biases. However, when we did so we found a wide divergence in the internal consistency of the four scales that we developed. As a result we decided that the best strategy was to use measures of the two dimensions, Grid and Group. While some questions remain about the reliability of the two Grid and Group scales used, they are more reliable than the measures of the cultural biases that we were able to develop.

The Grid dimension in Cultural Theory focuses on restrictions to individual behaviour and the extent of the acceptance of rules and regulations, and the Grid scale that we propose reflects this. The items used in our scale contrast those who feel authority should not be challenged, with those who are less willing to accept external direction, be it based on authority derived from expert knowledge, experience or religion, and who have a sense of efficacy in both public and private spheres. The Group dimension refers to the sense of responsibility and commitment that the individual has to units greater than themselves. The Group scale that we propose contrasts those who favour collective action for the betterment of the wider society, in particular by tackling economic inequality, with those who are more reluctant to do so, seeing little wrong with differences in the wealth that people have.

Regarding the Grid dimension, the evidence presented in this chapter suggests that men, those with higher levels of formal education, those who do not attend religious services on a regular basis, those in the higher social classes, those who earn more and those who work in the public sector are more likely to be critical of authority than their counterparts. On the Group scale, the only socio-demographic factor that has a significant influence is income, with those on lower incomes being more willing than those on higher incomes to state a strong preference for the reduction of economic inequalities between people.

Do the two scales help us understand differences between Irish people's environmental attitudes and behaviours? Compared to the set of socio-demographics and the NEP scale, the Grid and Group scales do not explain more of the variance in people's attitudes and behaviours. The strongest influence that they have is when we examine differences in people's feelings of environmental efficacy. In this case only the Grid scale has a statistically significant impact and explains thirteen percent of the variance. It would thus appear that a general sense of efficacy in the public and private spheres carries over strongly into the environmental arena, and is a cultural resource on which people draw.

Although the levels of variance explained are not particularly high, there are significant patterns in the correlations between a range of environmental attitudes and behaviours and both Grid and Group variables. The Grid scale has a significant impact on people's willingness to take on the extra costs of protecting the environment and of recycling, on how much they trust business and industry to provide them with correct information about the causes of pollution, their attitude to the development of new landfill sites, on their willingness to recycle and whether or not they report having donated money to an environmental group or signed a petition. In all of these cases those who are more willing to question



authority and who have a sense of efficacy are the people who have the most pro-environmental attitudes and behaviours.

The Group scale has significant impacts on people's perceptions of the dangers posed to the environment by a variety of threats, and on how much trust people have in government departments to provide correct information about the causes of pollution. Those who feel a responsibility for society in terms of seeking collective action to reduce inequality perceive greater dangers and are more sceptical of the information provided by government departments than their counterparts.

Finally, in four cases both the Grid and Group scales have a significant effect, allowing us to draw on Cultural Theory's typology of cultural biases. As a result of this we suggest that those drawing on an 'egalitarian' cultural bias (low Grid and high Group) are more trusting of the information about the causes of pollution provided by environmental groups, and more willing to cut back on driving for environmental reasons than their counterparts. We also conclude that those drawing on a 'fatalist' (high Grid and low Group) cultural bias are more inclined than their counterparts to regard incinerators as the best means of disposing of waste, while those who adhere to a 'hierarchical' cultural bias (high Grid and high Group) are more likely to agree that manufacturers of consumer products should be responsible for recycling them.

It is evident from the above that Grid-Group Theory offers insight into some of the broader cultural values that are related to pro-environmental attitudes and behaviour in Ireland. Although the amount of variance explained is relatively small, the pattern of tendencies in the cultural values on which respondents draw in their pro-environmental attitudes and behaviours is of great interest. Thus a questioning attitude to authority and a strong sense of efficacy in both the public and private spheres, carries over into attitudes and practices in relation to the environment. It can be concluded that egalitarianism, attitudes to authority and sense of efficacy tend to be significant socio-political cultural resources drawn upon by the Irish public in the movement towards environmental protection and practices.



## **Chapter 6**

### **The Impact of Underlying Values on Environmental Attitudes and Behaviours**

#### **6.1 Introduction**

The approach of this report up until now has been to examine the impact on environmental attitudes and behaviours of each of the theoretical perspectives and the set of socio-demographic variables separately. In this chapter, we examine all of the factors that are intended to help us understand differences in Irish people's environmental attitudes and behaviour together. Doing so will allow us to determine which of the theoretical perspectives and socio-demographic variables has the strongest relationship with differences in attitudes and behaviours. As ever, we begin by considering differences in people's attitudes before moving on to differences in their behaviours.

#### **6.2 Environmental Attitudes**

The first set of variables that we consider are respondents' attitudes to the environment. We begin with Irish people's perceptions of the dangers posed to the environment from a variety of sources. Then we consider how willing they are to take on extra costs in order to protect the environment and how optimistic they are about the effect of their actions to protect the environment. Once we have considered these attitudes, we turn our attention to the degree to which Irish respondents trust business and industry, government departments and environmental groups as sources of information about the causes of pollution. Finally, we focus on how Irish people believe waste should be dealt with.

##### *6.2.1 Perceptions of danger*

In the ISSP Environment module respondents were asked how dangerous were seven different threats for the environment. The evidence presented in Chapter 2 suggests that more than half of Irish respondents consider six of the seven items to be either 'extremely dangerous' or 'very dangerous' for the environment. The results suggest that Irish respondents see threats to the environment from a wide variety of sources. They are convinced about the dangers posed to the environment by nuclear power stations, water pollution, air pollution caused both by cars and industry, the 'greenhouse effect' and the use of pesticides and chemicals in farming. In the case of each of these less than ten percent of

respondents believe that they are 'not very dangerous' or 'not dangerous at all' for the environment. In this report, because we are interested in a wide variety of attitudes and behaviours we combine these seven items into a single scale. On our scale that runs from one-to-five, where 'five' is 'extremely dangerous' and 'one' is 'not dangerous at all', thirty percent of Irish respondents have a score greater than four.<sup>19</sup>

When we examine the relationship between the New Environmental Paradigm, the Post-Materialist thesis, the Grid-Group dimensions as well as our set of socio-demographic variables and people's perceptions of the danger that certain threats pose to the environment, we find that not only does the NEP scale continue to have a significant effect when we keep all other factors constant, so too do the Grid and Group scales. The results presented in Table 6.1 indicate that the effect of the NEP scale is much stronger than that of either the Grid or Group scales. As we noted in Chapter 3, the NEP was positively related to the level of danger that respondents perceive the environment to be facing. Those with stronger feelings that the environment is fragile, limited and in need of our care and attention believe that the proposed threats pose a great deal of danger for the environment. Furthermore, there are positive relationships between our measure of people's perceptions of danger and the Grid and Group scales. On the Group scale those who are concerned about society, and in particular inequality, believe that the environment is in danger, as do those who look to others for direction and advice. This combination of Grid and Group scales implies that it is those who adhere to a 'hierarchical' cultural bias who are most concerned about the danger of threats for the environment. Grid-Group theorists argue that while adherents of 'hierarchy' may well perceive the environment to be under threat, they will only embrace strong environmental concerns with reservations. These reservations are a consequence of their belief that problems in nature, as in other aspects of life, can be managed, and they trust political and scientific elites to do so. Thus adherents of a 'hierarchical' cultural bias place an important emphasis on regulation, believing that if environmental 'procedures are unheeded and limits transgressed, the system will collapse'. (Grendstad, 2000, p.219) They accept that experts can determine an acceptable level of risks, and threats to the environment can be dealt with through rules and regulations and by controlling access to resources. (Steg and Sievers, 2000, p.254)

---

<sup>19</sup> The mean position on this scale is 3.77 and the median position is 3.71.

*Table 6.1 Understanding Environmental Attitudes (Standardised Coefficients)*

	Perceptions of Danger	Willingness to take on costs	Environmental Efficacy
NEP	0.40**	0.32**	0.25**
Post-Materialists	0.03	-0.02	-0.03
Grid-Dimension	0.12*	-0.09	-0.29**
Group-Dimension	0.09*	0.03	-0.05
Female	0.05	-0.09*	0.04
Age	-0.00	-0.04	-0.02
Education	0.03	-0.02	0.11*
Urban	0.04	0.03	0.01
Religious Attendance	0.03	0.07	0.05
Social Class	0.08	-0.10	-0.07
Income	-0.09	-0.01	0.09*
Public Sector	0.03	-0.03	0.00
Adj.R <sup>2</sup>	0.16**	0.13**	0.31**
F-Ratio	8.02	6.95	19.46
N	447	487	499

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

### 6.2.2 Willingness to take on extra costs

The scale we use here considers the willingness of respondents to take on extra costs, in terms of higher prices and taxes or cuts in their standard of living. The distribution of Irish respondents on this scale is more or less evenly divided between those who are willing to take on these costs and those who are not.<sup>20</sup>

Of the three theoretical frameworks that we consider in this report, when it comes to understanding people's willingness to take on the extra costs of protecting the environment, only the NEP scale has a significant impact when we control for other factors. It should also be noted that of the various socio-demographic variables, only the gender of the respondent has a significant impact, with men being more willing to take on such costs than women. As the results in Table 6.1 indicate, the strongest influence on people's willingness to take on extra costs to protect the environment is the NEP scale. Those who view nature as fragile, limited and in need of our care and attention are more willing to take on these costs than those who do not view nature in this way.

<sup>20</sup> The mean position on this scale is 2.85 while the median position is 3.00.

### *6.2.3 Environmental efficacy*

Here we consider respondents' attitudes to dealing with environmental problems, and in particular how optimistic they are about the effect that their actions to protect the environment will have. Rather than focusing on a variety of items that make reference to environmental efficacy we again use a single measure. The distribution of Irish respondents on this scale suggests that one half are optimistic about the impact that their actions will have while others are pessimistic.

Four factors help us to understand differences between people in terms of their beliefs that their actions to protect the environment will have some effect. It is evident from Table 6.1 that the NEP scale, the Grid scale as well as the respondent's level of formal education and income have significant impacts on such attitudes. Those with higher levels of education and who earn more have stronger feelings of environmental efficacy. However, the evidence implies that while these factors are important, the most important factors are the Grid scale and the NEP scale. Those respondents who feel that nature is fragile, limited and in need of our care and attention are more likely than those who do not see nature in this way to be optimistic about the effect that their actions to protect the environment will have. The negative relationship between the Grid scale and people's feelings of environmental efficacy implies that those who hold high-grid scores are pessimistic about the outcome of their actions. On the other hand, those with low-grid scores, respondents who are willing to be critical of authority, to rely on their own resources in decision-making, and who have a positive sense of personal and political efficacy, are optimistic about the effect their actions to protect the environment will have.

### *6.2.4 Trust in sources of information*

While it is evident that Irish people are concerned about the dangers posed by a variety of threats to the environment, here we examine the levels of trust respondents have that three sources will provide them with correct information about the causes of pollution. Of the three groups considered, the most trusted source of information are environmental groups. This is despite their obvious interest in promoting a particular view of the environment and the causes of pollution. When it comes to government departments it appears that Irish people are undecided, as a similar percentage have a strong sense of trust as have a weak sense of trust. Business and industry stand out as the least trusted, with less than 10 percent of respondents feeling that they can be trusted to provide correct information about the causes of pollution.

*Table 6.2 Understanding Trust as Source of Information about the cause of Pollution (Exp(B))*

	Business and Industry	Government Departments	Environmental Groups
NEP	0.54	0.75	2.18**
Post-Materialists	0.49	1.04	1.04
Grid-Dimension	0.94	1.07	0.79
Group-Dimension	1.20	0.71	1.59*
Female	0.78	0.59*	1.23
Age	1.00	1.00	1.00
Education	0.67	0.88	1.18
Urban	1.17	1.54	1.57*
Religious Attendance	0.69	0.97	1.15
Social Class	0.98	0.90	1.16*
Income	1.23	0.83	0.97
Public Sector	1.07	1.33	0.75
Constant	0.69	6.94	0.02**
Cox and Snell R <sup>2</sup>	0.03	0.04	0.08
Nagelkerke R <sup>2</sup>	0.06	0.06	0.11
-2 Log Likelihood	269.64	547.13	593.16
Chi-Square	14.33	20.73	41.29**
N	502	502	504

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

When we include our three theoretical perspectives and socio-demographic variables in the one model, we find that none of the theoretical models or demographic variables contribute further to our understanding of whether or not respondents trust business and industry. Regarding government departments, only gender (men being more likely to trust them than women) remains significant. With regard to trust in environmental groups, the NEP scale, the Group scale as well as respondents' social class and whether or not they live in an urban area all have a significant impact. The evidence presented in Table 6.2 indicates that those in the lower social classes (e.g. unskilled manual labour) have greater trust in environmental groups than those in the higher social classes. Similarly, those who live in urban areas have greater trust in environmental groups than those who live in rural areas. The effect of this second socio-demographic variable on trust in environmental groups is almost as strong as the effect of the Group scale. With regard to the Group dimension, those who are most concerned about equality and the wider society have greater levels of trust in environmental groups than those who are less concerned. Finally, the factor with by far the strongest effect on trust in environmental groups is the NEP scale. Those who view nature as fragile, limited and in need of our care and attention have greater levels of trust in environmental groups to provide them with correct information about the causes of pollution than those who do not view nature in this way.

### 6.2.5 Dealing with waste

The final set of attitudes that we consider are related to how best to deal with waste. In the self-completion module of the ISPAS four items dealt with this topic. Two of these items refer to recycling while the other two address the use of incinerators and the development of new landfill sites. Interestingly, despite some very visible campaigns against the building of incinerators in Ireland, a slightly larger percentage of respondents agreed that ‘using incinerators is the best way to dispose of waste’ than disagreed. Landfills though are somewhat more popular than incinerators as just over 40 percent agree that ‘new landfill sites should be developed to dispose of waste’. However, the percentages that agree with both of these methods are much smaller than those who favour recycling. Large majorities of people state that they are willing to ‘pay more in order to recycle waste’ and believe that the original manufacturer of the product should be responsible for recycling it.

*Table 6.3 Understanding Attitudes to Dealing with Waste (Exp(B))*

	Incinerators	Landfill	Pay to Recycle	Manufacturer Recycle
NEP	0.35**	0.68	2.19**	1.48
Post-Materialists	0.94	1.65	1.01	2.45
Grid-Dimension	1.20	2.03**	0.77	1.17
Group-Dimension	0.60*	0.69	1.28	1.41
Female	1.04	1.00	0.87	1.14
Age	1.02**	1.01	1.00	1.01
Education	1.00	0.78	1.11	0.93
Urban	1.16	1.64*	0.79	1.02
Religious Attendance	0.80	1.38	1.60	1.57
Social Class	0.97	1.01	0.86	1.02
Income	0.88	0.90	0.98	0.76
Public Sector	0.80	1.91*	0.84	0.85
Constant	81.50**	1.45	0.33	0.22
Cox and Snell R <sup>2</sup>	0.13	0.13	0.05	0.07
Nagelkerke R <sup>2</sup>	0.18	0.18	0.09	0.10
-2 Log Likelihood	466.41	495.63	375.82	423.05
Chi-Square	53.97**	57.07**	23.53*	29.55**
N	376	403	451	432

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

The NEP scale, Group scale and age help us to understand differences in people’s attitudes to incinerators. The evidence presented in Table 6.3 suggests that older respondents are more likely to agree that incinerators are the best way to dispose of waste than younger respondents. On the other hand, those who are concerned about society and inequality as well as those who regard nature as



fragile, limited and in need of our care and attention are more likely than their counterparts to disagree with this view of incinerators. Of the two theoretical perspectives, the results suggest that the NEP scale has the stronger impact on differences in people's attitudes to incinerators.

When it comes to attitudes to developing new landfill sites, the NEP does not have a significant effect. Instead, the factors that help us to understand differences in people's attitudes to new landfill sites are the Grid scale, whether or not the respondent lives in an urban area and whether or not they work in the public sector. With regard to the socio-demographic variables, those who live in urban areas and those who work in the public sector are more likely than their counterparts to agree with the development of landfill sites to deal with the waste problem. That said, the strongest effect on differences between people's attitudes to the development of new landfill sites is whether or not they have high or low-grid scores. Those who are less critical of authority and more willing to rely on the word of experts (that is, those with high-grid scores) are more likely to agree with the development of new landfill sites than those who are more critical of authority (those with low-grid scores).

When we examine the two items that refer to recycling we find that of the three theoretical perspectives and socio-demographic factors only the NEP scale has a significant effect on respondents' attitudes to paying more to recycle their waste. The various factors that we examine do not help us understand differences in people's attitudes as to whether or not they agree that it is up to the manufacturers of consumer products to recycle them. With regard to people's willingness to pay extra in order to recycle their household waste, those who view nature as fragile, limited and in need of our care and attention are more willing to do so than their counterparts. This result is similar to that found above where people who see nature in this way are also more willing than their counterparts to take on the extra costs of protecting the environment.

### **6.3 Environmental Behaviour**

Above it was noted that Irish respondents to some degree feel that they can look after the environment through their own actions. Here we consider whether or not Irish people do act in a manner that protects the environment. As such we consider whether or not they have recycled, cut back on using their cars or sought to promote the environment as a social and political issue.

### 6.3.1 Recycling and Car Usage

The evidence from the Irish data suggests that in terms of environmentally friendly behaviour, most Irish people state that they are recycling at least some of their waste but few have cut back on car use for environmental reasons. In terms of recycling, almost three-quarters of Irish respondents claim that they at least sometimes sort their glass, tins, plastic and newspapers. Moreover, it is also evident that some form of recycling is now more widely available, as less than ten percent of respondents report that recycling is not available where they live. Where recycling is available, the vast majority of people report that they use the available facilities at least sometimes. Despite the fact that half of the respondents believe that air pollution caused by cars is dangerous for the environment, few are willing to cut back on their car use for environmental reasons. The vast majority of those who use a car report that they have never cut back on using it for environmental reasons. That said, of those who use a car, about a third report that they at least sometimes cut back on car use for these reasons.

*Table 6.4 Understanding Reported Environmental Behaviour (Exp(B))*

	Recycle	Cut back on Driving
NEP	2.23**	1.62*
Post-Materialists	0.90	0.82
Grid-Dimension	0.63*	0.96
Group-Dimension	1.14	0.98
Female	1.15	1.03
Age	1.02	1.01
Education	1.20	0.87
Urban	1.39	1.80*
Religious Attendance	1.35	0.86
Social Class	1.00	0.93
Income	0.91	0.89
Public Sector	1.61	1.66*
Constant	0.22	0.10
Cox and Snell R <sup>2</sup>	0.07	0.06
Nagelkerke R <sup>2</sup>	0.12	0.08
-2 Log Likelihood	374.89	508.01
Chi-Square	34.74**	25.04*
N	471	418

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

It is evident from the results presented in Table 6.4 that the NEP scale has a significant effect on whether or not the respondents at least 'sometimes' sort household waste for recycling or cut back on driving for environmental reasons. Those who view nature as fragile, limited and in need of our care and attention are more likely than their counterparts to at least 'sometimes' recycle and cut back on driving. The Grid scale also has a significant impact on the likelihood of people sorting household

waste for recycling. Those who are more willing to be critical of authority and to rely on their own decision-making resources are more likely than their counterparts to recycle at least 'sometimes'. With regard to cutting back on car use for environmental reasons, although the effect of the NEP scale is significant, it does not have the strongest impact on differences in the likelihood of people cutting back on driving. The factor that has the strongest impact on this behaviour is whether or not the respondent lives in an urban area. Not surprisingly, given the greater access to public transport, those living in urban areas are more likely than those living in rural areas to cut back on car use. The other variable that has a significant effect, which is also greater than the impact of the NEP scale, is whether or not the respondent works in the public sector. Those who work in the public sector are more likely than those who work in the private sector to at least 'sometimes' cut back on driving. One might suspect that this is because public sector workers live in urban areas; however there is a very low correlation between whether or not respondents live in urban areas and whether or not they work in the public sector.

### *6.3.2 Promoting the environment as an issue*

Finally, we consider behaviour by the respondents that is targeted at policy makers. There is a variety of activities considered, from indirect action such as petition signing and giving money to environmental groups, to more direct forms of action such as joining a group whose main aim is to preserve or protect the environment, and participating in protests or demonstrations. It is quite clear from the evidence present in Chapter 2 that Irish people are not actively involved in the more direct methods of targeting policy makers, as only a tiny percentage of respondents report that they are members of an environmental group. A similarly small percentage of respondents claim to have protested about an environmental issue. There appears, however, to be a greater willingness among at least a fifth of Irish people to provide support to those who are involved in these more direct forms of action. A quarter of respondents have signed a petition while one in five have given money to an environmental group. Of those who reported either giving money to an environmental group or signing a petition, just over 40 percent reported doing both. So, while there appears to be a reluctance to take an active part, a notable minority of people are willing to provide support, at least at arm's-length.

*Table 6.5 Understanding Promotion of the Environment as a Social and Political Issue (Exp(B))*

	Member	Money	Protest	Petition
NEP	2.80	2.87**	4.85**	2.66**
Post-Materialists	3.72	1.96	1.00	2.15*
Grid-Dimension	1.28	0.71	1.10	0.77
Group-Dimension	0.71	0.84	1.23	1.22
Female	1.03	1.21	0.93	1.08
Age	0.99	1.00	0.99	0.99
Education	1.46	1.05	1.34	1.26
Urban	0.51	0.85	0.70	1.30
Religious Attendance	1.43	0.91	1.61	0.92
Social Class	0.84	1.05	1.21	1.09
Income	0.60	1.03	0.81	1.10
Public Sector	0.48	0.89	0.68	1.22
Constant	0.004	0.02**	0.00**	0.01**
Cox and Snell R <sup>2</sup>	0.03	0.08	0.04	0.11
Nagelkerke R <sup>2</sup>	0.11	0.11	0.11	0.16
-2 Log Likelihood	121.76	513.11	222.32	568.53
Chi-Square	13.17	39.61**	21.53	59.86**
N	503	503	505	504

Note: \* Statistically significant at  $p < 0.05$  and \*\* Statistically significant at  $p < 0.01$ .

With regard to the direct methods of promoting the environment as an issue, none of the theoretical perspectives or socio-demographic factors contributes to our understanding of whether or not a respondent is a member of an environmental group. However, when it comes to taking part in a protest or demonstration over an environmental issue, the results in Table 6.5 imply that those who view nature as fragile, limited and in need of our care and attention are more likely than their counterparts to take part in such a protest.

When it comes to the more indirect methods of promoting the environment as a social and political issue, there are positive relationships between the NEP scale and whether or not respondents give money to an environmental group or sign a petition. Those who regard nature as fragile are more likely than their counterparts to donate money to an environmental group and sign a petition. While the NEP scale is the only factor that contributes to our understanding of who donates money to environmental groups, whether or not a person has post-materialist values has a significant impact on signing a petition. Those who hold post-materialist values are more likely than those who do not to sign a petition. This is the only instance in which the post-materialist measure contributes to our further understanding of environmental attitudes and behaviours when other factors are controlled for.

## 6.4 Conclusion

Up until this chapter we had examined each theoretical model and the socio-demographic variables that were intended to help us explore and understand differences in people's environmental attitudes and behaviours in isolation from one another. In Chapter 2 we examined the impact that a variety of socio-demographic variables had on such differences and in Chapter 3-5 we examined in turn the impact of our three theoretical perspectives, the New Environmental Paradigm, Post-Materialism and Grid-Group Theory (or Cultural Values Theory). It became evident that the set of socio-demographic factors and the NEP scale that we propose contributed most to our understanding. That said, while post-materialism appears to have little to contribute, the Grid and Group scales do have something to tell us. In this chapter all of these sets of factors were included together in the analysis.

It is quite clear from the above that the NEP scale is the most important factor as it has a significant impact in eleven of our sixteen sets of environmental attitudes and behaviours. In only two cases does the NEP scale not have a significant impact when other factors do (i.e. trust in government departments and attitudes towards the development of new landfill sites). The other theoretical perspectives are not quite as helpful. However, the Grid scale has a significant impact in three instances, while the Group scale has a significant impact in one. That said, both Grid and Group scales combined have a significant impact on people's perceptions of the dangers posed to the environment by a variety of threats. The combination of both high-grid and high-group in relation to perceptions of environmental dangers suggests that those who adhere to a 'hierarchical' cultural bias perceive greater dangers than those who adhere to any of the other cultural biases. Post-materialism, as we have already seen, is not particularly helpful, and only has a significant impact on whether or not a person signs a petition. The variables that we include in the multivariate analysis do not have statistically significant impacts on trust in business and industry, attitudes to the responsibilities of manufacturers to recycling the goods they produce, or whether or not a respondent is a member of an environmental group.



## **Chapter 7**

### **Environmental Values, Attitudes and Behaviours in Ireland: Some Conclusions**

#### **7.1 Introduction**

So what have we learnt about Irish people's environmental attitudes and behaviours and the cultural sources of support on which they draw? In order to address this question we firstly review what we know about respondents' environmental attitudes and behaviours. Then we consider the three theoretical perspectives and the degree to which they contribute to our understanding of differences in people's attitudes and behaviours. Drawing on these findings we then identify and examine those broader cultural values on which environmentalism draws. Finally, we suggest some possible policy implications.

#### **7.2 Differing Attitudes and Behaviours**

In this research project we consider a wide variety of environmental attitudes and behaviours. We began by considering how dangerous Irish people perceived a variety of threats to be for the environment. The evidence suggests that Irish respondents are deeply concerned about such threats. In particular, they are convinced about the dangers posed to the environment by nuclear power stations, water pollution, air pollution caused both by cars and industry, the 'greenhouse effect' and the use of pesticides and chemicals in farming. In the case of each of these, less than ten percent of respondents believe that they are 'not very dangerous' or 'not dangerous at all' for the environment. Regarding attitudes to protecting the environment, there is a greater willingness to pay higher prices (53 percent) than pay higher taxes (34 percent). On the question of environmental efficacy, there is an almost even divide between those who are optimistic about the effect of their own actions to protect the environment and those who are more pessimistic. With regard to how much trust people have in a number of institutions to provide them with correct information about the causes of pollution, of the three groups considered in detail in this report, the most trusted source of information is environmental groups (though it should be remembered that university research centres are trusted by the largest percentage of people). When it comes to government departments, a similar percentage of people have a strong sense of trust as have a weak sense of trust. Industry and business stand out as the least trusted source of information as less than 10 percent of respondents feel a strong sense of trust in business and industry.

Finally, we asked people about four ways of dealing with waste. Two of these items deal with recycling while the other two address the use of incinerators and the development of new landfill sites. Large majorities agree with the idea of paying 'more in order to recycle waste' and believe that the original manufacturer of the product should be responsible for recycling it. Interestingly, despite some very visible campaigns against the building of incinerators in Ireland, the percentage of respondents who agree that 'using incinerators is the best way to dispose of waste' (40 percent) is slightly greater than the percentage that disagree with this idea. The development of new landfills meets with only slightly more approval than incinerators, 43 percent agreeing that 'new landfill sites should be developed to dispose of waste'.

Once we had considered people's attitudes to the environment we asked them about their own behaviour. The first two behavioural items asked about sorting household waste for recycling and how often they cut back on car use for environmental reasons. The evidence suggests that recycling facilities are now more widely available, as less than ten percent of respondents report that no such facilities are available where they live. Where they are available, almost three-quarters of the respondents claim that they at least sometimes sort through glass, tins, plastic and newspapers. However, despite the fact that half of the respondents believe that air pollution caused by cars is dangerous for the environment, few are willing to cut back on their car use for environmental reasons. The majority of those who use a car report that they have never cut back on using it for environmental reasons, with about a third reporting that they have at least sometimes done so.

We also asked respondents about their activities to promote the environment as a social and political issue. Again there is an important difference between 'doing your own bit' and supporting others 'doing their bit'. It is quite clear from the evidence we present that few Irish people are actively involved in the more direct forms of activities intended to promote the environment as a social and political issue. Only a tiny percentage of respondents (4 percent) report that they are members of an environmental group and a similarly small percentage of respondents (5 percent) claim to have protested about an environmental issue. However, there appears to be a willingness among Irish people to provide support to those who are involved in these more direct forms of action. A quarter of respondents have signed a petition, while a fifth have given money to an environmental group. Of those who reported giving money to an environmental group or signing a petition, just over forty per cent reported doing both. So, while there appears to be a reluctance to take an active part, a notable minority of people are willing to provide support, at least at arm's-length.



### **7.3 Socio-Demographic and Cultural Sources of Differing Environmental Attitudes and Behaviours**

In this project we not only identified the differences that exist between people's environmental attitudes and behaviours, but also set out to explore some of the socio-demographic and cultural sources of support for these differences. Of the various socio-demographic variables considered (gender, age, education, residence, religious attendance, social class, income and employment in the public sector), education proved to be the most powerful predictor of pro-environmental attitudes, with high incomes and social class also predictive in this direction.

In Ireland, as in other countries, socio-demographic variables do not explain much of the variance in environmental attitudes and behaviours. It was found that in all but one case, environmental efficacy, less than ten percent of the variance was explained by all of the socio-demographic variables together.

We also explored whether broader sets of cultural values might be identified which could be shown to contribute to environmental concerns and practices. The ISSP Environmental module proposed three theoretical frameworks.

The first, the New Environmental Paradigm (NEP), examines a set of broad cultural values regarding nature, the environment and socio-economic change. It proposes that there has been increasing concern in developed western economies regarding the impact of economic development on what is seen as a fragile environment and a nature that needs care rather than reckless exploitation and domination. We found that in Ireland, as in other countries, the great majority of people are favourably disposed towards this view. Those most strongly supportive are the young and those with higher levels of education. People with strong NEP values are more likely than others to express concern about environmental risks and dangers and to be willing to pay for protecting the environment. They have a sense of environmental efficacy (that their actions on behalf of the environment can be significant), they trust the information on pollution provided by environmental groups, and they are more likely than others to give money and sign petitions to promote environmental issues. They have a strong preference for recycling, and are more likely to recycle and cut back on driving than other groups. They have a strong dislike of landfill and incineration. Certainly the NEP would appear to be a major cultural value system around which pro-environmental sentiment is mobilising.

In contrast, post-materialism as a set of cultural values does not appear to be a potent cultural resource. Only a small percentage (9 percent) hold post-material values, with most respondents holding mixed materialist and post-materialist views. Post-materialists are younger. The watershed for the development of these values in Ireland is the early 1970s rather than the immediate years after the Second World War as Inglehart suggests for other nations. However holding post-materialist values was not found to be significantly correlated with any of the pro-environmental attitudes that we explored. The only pro-environmental behaviours with which it was significantly related were signing a petition or donating money to an environmental group.

The research findings regarding the Cultural Values or Grid-Group paradigm are of considerable interest. The values explored using this perspective are broader socio-political cultural values. The items do not refer to the environmental in the same way as the items used to construct the NEP scale. The initial approach that we took, an attempt to identify the four cultural biases of hierarchy, egalitarianism, individualism and fatalism, using the battery of items provided in the ISSP Environmental module (E27), did not prove to be very reliable. We therefore decided to identify each dimension, Grid and Group, separately. This proved more successful, both in terms of developing scales and in the significant correlations to environmental attitudes and behaviours found. Although the amount of variance explained is relatively small, a consistent pattern emerges, and is in the direction that Cultural Theory would lead us to expect.

A strong sense of egalitarianism, and an approval of collective political action to redistribute income more equitably (Group variable), is related to heightened concerns regarding a range of environmental threats. When there is a strong 'egalitarian cultural bias' there tends to be a high level of trust in the information provided by environmental groups. Some cultural theorists have thus argued that environmentalism can be interpreted as a cultural and symbolic stick whereby egalitarians can criticise and beat a government that they see as supporters of an inequitable and unjust society. Thus Wildavsky and Dake (1990, p.56) argue that, in the USA, nuclear energy became 'a surrogate issue for more fundamental criticism of US institutions'.

A questioning attitude to authority and a strong sense of personal and political efficacy (Grid variable) was also found to contribute to pro-environmental mobilisation. These values are related to an increased willingness to pay for protecting the environment, to practice recycling and cutting back on driving, and to supporting environmental activism by giving money to environmental groups and signing petitions.

Again drawing on Cultural Theory's 'cultural biases', it is those who draw on a 'fatalist bias', which combined a lack of concern about equality with an acceptance of hierarchy and authority, who most favoured using incineration as a method of disposing of waste.

To conclude, this research has identified three sets of broadly based cultural values that contribute to environmentalism in Ireland. One is the NEP in which there is a deep concern for the fragility of nature and for the need to protect it, particularly from possible over-exploitation and destruction due to rapid economic and social change. A second is egalitarianism, which expresses a concern for society's unequal structures and the need for collective political efforts to change this. The third is a set of values around empowerment, including a sense of efficacy in bringing about change, and criticism of authoritarian hierarchical structures.

#### **7.4 What can we do?**

It is perhaps somewhat premature to outline some of the policy implications of this report, given that a further quantitative report comparing Irish and European values remains to be done, and, perhaps even more pertinent, the qualitative research on environmental discourses, based on data from 21 focus group discussions with both the general public and 'accredited' environmental experts also remains to be completed (both are due in February 2004). Nevertheless, some policy indications might be noted on three fronts.

Regarding environmental charges and taxes (waste charges and carbon taxes are both high on the political agenda at present), two factors might be noted. Firstly, there is a greater willingness to pay the cost of environmental protection if it is not imposed on all, such as a tax, but instead there is some element of choice, as in the plastic bag levy. Furthermore, relating environmental charges and taxes to the ability to pay, will draw on that egalitarianism which is supportive of environmentalism and which is also particularly prevalent among those with lower incomes.

Regarding mobilisation of the public to care for the environment, the longer-term role of a critical and liberal education should be noted, as well as the role of empowerment of individuals and communities in order to support and develop a sense of socio-political efficacy. This latter aspect may be strengthened through the continuation, and further development, of partnerships within and between communities, interest groups, environmental groups and decision-makers. Of course, sufficient support

for such partnership must be forthcoming from decision-makers to ensure that efforts (frequently voluntary) are repaid by implementing negotiated partnership decisions.

Finally, the success of pro-environmental information campaigns would be increased by focusing not only on the information being communicated, but by drawing on the core cultural values which are supportive of pro-environmental attitudes and behaviours.





**Appendix 1 - Questionnaire Items from ISPAS Core Module and Self-Completion Module used in this Report**

**ISPAS Core Module**

**A3 I will now read out a series of statements. These cover a range of different areas and topics and I would like you to tell me how strongly you Disagree or Agree with each. For each statement I read please tell me whether or not you Strongly Disagree, Disagree, Slightly Disagree, Neither Agree nor Disagree, Slightly Agree, Agree, or Strongly Agree.** [Int. Show card A3, and Please tick (✓) one box on each line]

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
6. It would be better if more people with strong religious beliefs held public office	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
7. There is nothing wrong with some people being a lot richer than others	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>

**A9 I will now read out some more statements. Please tell me to what extent you Disagree or Agree with each statement?** [Int. Show Card A3 and tick (✓) one box on each line].

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
1. Sometimes politics and government seem so complicated that a person like me cannot really understand what is going on	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
2. The ordinary person has no influence on politics	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>

**A11 I will now read out some statements. Please tell me to what extent you Disagree or Agree with each statement?** [Int. Show Card A3 and tick (✓) one box on each line].

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
1. Ordinary working people get their fair share of the nation's wealth	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
2. Income tax should be increased for people on higher than average incomes	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>



Self-Completion Questionnaire

The Economic and Social Research Institute
4 Burlington Road Dublin 4 Ph. 6671525

IRISH SOCIAL ATTITUDES SURVEY, WINTER 2001/2002

Interviewer's Number [ ] [ ] [ ] [ ]
Area Code [ ] [ ] [ ] Respondent Code [ ] [ ]
Date of Interview: Day [ ] [ ] Month [ ] [ ]

Self-Completion Questionnaire

Thank you for having completed the Irish Social and Political Attitudes Survey, 2001. We would now ask you to please complete this final section of the questionnaire and return it, as soon as possible, in the pre-paid envelope provided to The Economic and Social Research Institute.

Most questions will require you to put a tick (4) in a single box or series of boxes. For example:

Table with 2 rows: Male (checked), Female

Please complete using a blue or black pen and mark your answers as clearly as possible. Only you should fill in the questionnaire, and not anyone else at your address. ALL ANSWERS WILL BE TREATED AS STRICTLY CONFIDENTIAL.

EVERYONE WHO COMPLETES AND RETURNS THIS FINAL SECTION OF THE QUESTIONNAIRE WILL BE ENTERED INTO A LOTTERY, WITH A FIRST PRIZE OF £1,000; A SECOND PRIZE OF £500; FOUR £100 PRIZES; AND FOUR £50 PRIZES. MANY THANKS FOR YOUR HELP!



**Q5 Please indicate whether you disagree or agree with each of the following statements. Please tick (✓) one box on each line.**

	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
1. The natural environment is fragile and needs great care	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
2. In the modern world natural resources are being depleted too rapidly	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
3. The Irish State should do what scientists say about protecting nature	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
4. However much human beings try to alter nature for their own benefit it will follow its own ways	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
5. You can never be sure how nature will react	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
6. Modifying nature for human use seldom causes serious problems	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
7. To protect nature, everybody needs to follow environmental regulation	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
8. My first priority is to provide for myself and my family, even if this means doing things that harm the environment	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
9. It is very important to maintain the variety of living species in the world	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
10. Using incinerators is the best way to dispose of waste	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
11. I would be willing to pay more in order to recycle waste	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
12. New landfill sites should be developed to dispose of waste	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>
13. It should be up to the original manufacturer to recycle consumer products	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>	<input type="checkbox"/> <sub>6</sub>	<input type="checkbox"/> <sub>7</sub>



## Appendix 2 - Additional Tables

*Table A2.1: Perceptions of Danger Scale Items and Principal Component Factor Loadings*

	Loadings
Pesticides and chemicals used in farming for the environment (e9b)	0.76
Air pollution caused by industry for the environment (e9a)	0.74
Pollution of Ireland's rivers, lakes and streams for the environment (e9c)	0.73
Rise in the world's temperature caused by the 'greenhouse effect' (global warming) for the environment (e10a)	0.72
Air pollution caused by cars for the environment (e8a)	0.67
Modifying the genes of certain crops for the environment (e10b)	0.59
Nuclear power stations for the environment (e22)	0.52
Variance Explained	46.57
Cronbach's Alpha	0.80
N	1019

NOTE: in constructing the scale the direction of each item was reversed so that high scores indicate 'dangerous' and low scores indicate 'not dangerous'.

*Table A2.2: Willingness to Take on Extra Costs to Protect the Environment Scale Items and Principal Component Factor Loadings*

	Loadings
Pay much higher taxes in order to protect the environment (e5_2)	0.89
Pay much higher prices in order to protect the environment (e5_1)	0.87
Accept cuts in standard of living in order to protect the environment (e5_3)	0.86
Variance Explained	76.73
Cronbach's Alpha	0.85
N	1161

*Table A2.3: Environmental Efficacy Scale Items and Principal Component Factor Loadings*

	Loadings
It is just too difficult for someone like me to do much about the environment (e6_1)	0.84
There is no point in doing what I can for the environment unless others do the same (e6_4)	0.84
Variance Explained	70.66
Cronbach's Alpha	0.58
N	1211

*Table A3.1: Two Component NEP Scale Items and Principal Component Factor Loadings*

Items	Aspect of NEP	Loadings 1	Loadings 2
In the modern world natural resources are being depleted too rapidly (q5_2)	Limits of Growth	0.84	0.19
The natural environment is fragile and needs great care (q5_1)	Biocentric	0.84	0.16
It is very important to maintain the variety of living species in the world (q5_9)	Biocentric	0.70	-0.02
Modifying nature for human use seldom causes serious problems (q5_6)	Social Change	-0.29	-0.48
We worry too much about the future of the environment and not enough about prices and jobs today (e3_4)	Economic Growth	0.15	0.76
People worry too much about human progress harming the environment (e3_6)	Social Change	0.09	0.73
In order to protect the environment Ireland needs economic growth (e3_7)	Economic Growth	-0.06	0.66
	% Variance Explained	29.09	26.47
	% Total Variance Explained	55.56	

Extraction Method: Principal Component Analysis; Rotation Method Variamax with Kaiser Normalization; 'Can't choose' were coded as missing data.

*Table A3.2: Distribution of Responses on the NEP Scale Items (%)*

Items	Agree	Disagree	N
In the modern world natural resources are being depleted too rapidly <sup>a</sup> (q5_2)	86.7	4.6	1865
The natural environment is fragile and needs great care <sup>a</sup> (q5_1)	88.7	5.3	1871
It is very important to maintain the variety of living species in the world <sup>a</sup> (q5_9)	91.0	3.3	1862
Modifying nature for human use seldom causes serious problems <sup>b</sup> (q5_6)	23.5	60.0	1852
We worry too much about the future of the environment and not enough about prices and jobs today (e3_4)	28.6	57.0	1204
People worry too much about human progress harming the environment (e3_6)	32.2	52.1	1191
In order to protect the environment Ireland needs economic growth (e3_7)	51.1	30.1	1156

<sup>a</sup> Recoded so that scores run from 1-5 instead of 1-7; <sup>b</sup> Direction of item reversed and recoded so that scores run from 1-5 instead of 1-7.

*Table A5.1: Distribution of Responses on the Grid and Group Scales Items (%)*

	Agree	Neither Agree nor Disagree	Disagree	N
<i>Group Dimension</i>				
People with money should be left to enjoy it (e23_4)	72.0	18.1	9.0	1209
There is nothing wrong with some people being a lot richer than others (a3_7)	70.1	8.2	21.8	2479
It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes (e1_2)	67.9	15.3	16.8	1200
Income tax should be increased for people on higher than average incomes (a11_2)	59.6	7.1	33.3	2484
Government should redistribute income from the better-off to those who are less well-off (e23_1)	54.7	16.3	29.1	1204
Ordinary working people get their fair share of the nation's wealth (a11_1)	25.7	5.4	68.9	2488
<i>Grid Dimension</i>				
Sometimes politics and government seem so complicated that a person like me cannot really understand what is going on (a9_1)	62.4	5.7	31.9	2482
The ordinary person has no influence on politics (a9_2)	57.7	4.0	38.3	2482
One of the problems with people today is that they challenge authority too often (e23_3)	32.6	15.9	51.5	1204
It would be better if more people with strong religious beliefs held public office (a3_6)	26.6	15.2	58.1	2477
There is little that people can do to change the course of their lives (e23_2)	16.6	7.5	75.9	1223



## References

- Abramson, P.A. and R. Inglehart (1992) 'Generational replacement and value change in eight West European societies', *British Journal of Political Science*, Vol.22, pp183-228.
- Albrecht, D., G. Bultena, E. Hoiberg and P. Novak (1982) 'The New Environmental Paradigm Scale', *Journal of Environmental Education*, Vol.13, pp39-43.
- Bagozzi, R.P., Z. Gurhan-Canli and J.R. Priester (2002) *The Social Psychology of Consumer Behaviour*, Buckingham: Open University Press.
- Bryson, C. and J. Curtice (1998) 'The end of materialism?' in R. Jowell et al (eds.), *British – and European – Social Attitudes, the 15<sup>th</sup> BSA Report*, Aldershot: Ashgate.
- Buttel, F. (1979) 'Age and environmental concern: a multivariate analysis', *Youth and Society*, Vol.10, pp237-256.
- Clarke, H.D. and N. Dutt (1991) 'Measuring value change in western industrialised societies', *American Political Science Review*, Vol.85, pp905-920.
- Coughlin, R.M. and C. Lockhart (1998) 'Grid-Group Theory and political ideology: a consideration of their relative strengths and weaknesses for explaining the structure of mass belief systems', *Journal of Theoretical Politics*, Vol.10 (1), pp35-58.
- Dalton, R.J. (1994) *The Green Rainbow: Environmental Interest Groups in Western Europe*, New Haven: Yale University Press.
- Dalton, R.J. (1996) *Citizen Politics*, 2<sup>nd</sup> Edition, Chatham: Chatham House Publications.
- Dalton, R.J. and R. Rohrschneider (1998) 'The Greening of Europe', in R. Jowell et al (eds.), *British – and European – Social Attitudes, the 15<sup>th</sup> BSA Report*, Aldershot: Ashgate.
- Deth, J.W. van and E. Scarbrough (1995) 'The concept of values', in J.W. van Deth and E. Scarbrough (eds.) *The Impact of Values*, Oxford: Oxford University Press.
- Dietz, T., P.C. Stern and G.A. Guagnano (1998) 'Social structural and social psychological bases of environmental concern', *Environment and Behavior*, Vol.30, pp450-471.
- Douglas, M. (1970) *Natural Symbols: Explorations in Cosmology*, London: Barrie and Rockliff.
- Douglas, M. (1982) 'Cultural Bias', in M. Douglas *In The Active Voice*, London: Routledge.
- Douglas, M. and A. Wildavsky (1982) *Risk and Culture. An Essay on the Selection of Technical and Environmental Dangers*, Berkeley: University of California Press.
- Dunlap, R. and K. Van Liere (1978) 'The New Environmental Paradigm', *The Journal of Environmental Education*, Vol.9, pp10-19.
- Dunlap, R.E., K.D. Van Liere, A.G. Mertig and R.E. Jones (2000) 'Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale', *Journal of Social Issues*, Vol.56, pp425-442.
- Edgell, M.C.R. and D.E. Nowell (1989) 'The New Environmental Paradigm Scale: wildlife and environmental beliefs in British Columbia', *Society and Nature Resources*, Vol.2, pp258-296.
- Ellis, R.J. and F. Thompson (1997) 'Culture and the environment in the Pacific Northwest', *American Political Science Review*, Vol.91 (4), pp885-897.

- Ewert, A. and D. Baker (2001) 'Standing for where you sit: an exploratory analysis of the relationship between academic major and environmental beliefs', *Environment and Behavior*, Vol.33 (5), pp687-707.
- Faughnan, P. and B. McCabe (1998) *Irish Citizens and the Environment: a cross national study of environmental attitudes, perceptions and behaviours*, Wexford: EPA.
- Furman, A. (1998) 'A note on environmental concern in a developing country: results from an Istanbul survey', *Environment and Behavior*, Vol.30 (4), pp520-534.
- Geller, J. and P. Lasley (1985) 'The New Environmental Paradigm scale: a re-examination', *Journal of Environmental Education*, Vol.17, pp9-12.
- Grendstad, G. (2000) 'Grid-Group Theory and political orientations: effects of cultural biases in Norway in the 1990s', *Scandinavian Political Studies*, Vol.23 (3), pp217-244.
- Grendstad, G. (2003) 'Comparing political orientations: Grid-Group Theory versus the Left-Right dimension in five Nordic countries', *European Journal of Political Research*, Vol.42, pp1-21.
- Inglehart, R. (1977) *The Silent Revolution: Changing Values and Political Styles*, Princeton: Princeton University Press.
- Inglehart, R. (1981) 'Post-materialism in an environment of insecurity', *American Political Science Review*, Vol.75, pp880-900.
- Inglehart, R. (1984) 'The changing structure of political cleavages in western society', in R.J. Dalton, S.C. Flanagan and P.A. Beck (eds.), *Electoral Change in Advanced Industrial Democracies: Realignment or Dealignment?*, Princeton: Princeton University Press.
- Inglehart, R. (1990) *Cultural Shift in Advanced Industrial Society*, Princeton: Princeton University Press.
- Inglehart, R. (1995) 'Public support for environmental protection: objective problems and subjective values in 43 countries', *PS: Political Science and Politics*, Vol.28 (1), pp57-72.
- Inglehart, R. (1997) *Modernization and Post-Modernization*, Princeton: Princeton University Press.
- Inglehart, R. and P.A. Abramson (1994) 'Economic security and value change', *American Political Science Review*, Vol.88, pp336-354.
- Jarvis, L., A. Park and R. Jowell (1999) *ISSP 2000: Environment module draft questionnaire and commentary*, London: National Centre for Social Research.
- Jones, R.E. and R.E. Dunlap (1992) 'The social bases of environmental concern: have they changed over time', *Rural Sociology*, Vol.57 (1), pp28-47.
- Kim, J.-O. and C.W. Muller (1994a) 'Introduction to factor analysis: what it does and how to do it', in M.S. Lewis-Beck (ed.) *Factor Analysis and Related Techniques, International Handbooks of Quantitative Applications in the Social Sciences*, Vol.5, London: Sage Publications.
- Kim, J.-O. and C.W. Muller (1994b) 'Factor analysis: statistical methods and practical issues', in M.S. Lewis-Beck (ed.) *Factor Analysis and Related Techniques, International Handbooks of Quantitative Applications in the Social Sciences*, Vol.5, London: Sage Publications.
- Kriesi, H.P. (1989) 'New social movements and the new class in the Netherlands', *American Journal of Sociology*, Vol.94, pp1078-1116.
- Lijphart, A. (1981) 'Political parties: ideologies and programs', in D. Butler, H. Penniman and A. Ranney (eds.) *Democracy at the Polls: A Comparative Study of Competitive National Elections*, Washington DC: American Enterprise Institute.



- Mohai, P. and B. Twight (1987) 'Age and environmentalism: an elaboration of the Buttel model using national survey evidence', *Social Science Quarterly*, Vol.68, pp798-815.
- Muller-Rommel, F (1985) 'New social movements and smaller parties: a comparative perspective', *West European Politics*, Vol.5, pp68-74.
- Muller-Rommel, F (1989) 'The German Greens in the 1980s: short-term cyclical protest or indicator of transformation?', *Political Studies*, Vol.37, pp114-122.
- Muller-Rommel, F. (1990) 'New political movements and new politics parties in Western Europe', in R.J. Dalton and M. Kuchler (eds.) *Challenging the Political Order: New Social and Political Movements in Western Democracies*, Oxford: Polity Press.
- Noe, F.P. and R. Snow (1990) 'The New Environmental Paradigm and further scale analysis', *Journal of Environmental Education*, Vol.21, pp20-26.
- Poguntke, T. (1987) 'New politics and party systems: the emergence of a new type of party', *West European Politics*, Vol.10, pp76-88.
- Prescott-Clarke, P. and A. Hedges (1987) *Radioactive Waste Disposal: the Public's View*, London: SCPR.
- Rohrscheider, R. (1990) 'The roots of public opinion towards New Social Movements: an empirical test of competing explanations', *American Journal of Political Science*, Vol.34, pp1-30.
- Scarborough, E. (1995) 'Materialist – Post-Materialist Value Orientations' in J.W. van Deth and E. Scarborough (eds.) *The Impact of Values*, Oxford: Oxford University Press.
- Schultz, P.W., L. Zelezny and N.J. Dalrymple (2000) 'A multinational perspective on the relation between Judeo-Christian religious beliefs and attitudes of environmental concern', *Environment and Behavior*, Vol.32 (4), pp576-591.
- Schwartz, S.H. (1992) 'Universals in the content and structure of values: theoretical advances and empirical tests in 20 countries', in M.P. Zanna (ed.) *Advances in Experimental Social Psychology*, Vol.25, San Diego: Academic Press.
- Steg, L. and I. Sievers (2000) 'Cultural Theory and individual perceptions of environmental risk', *Environment and Behavior*, Vol.32 (2), pp250-269.
- Stern, P.C., T. Dietz and G.A. Guagnano (1995) 'The New Ecological Paradigm in social-psychological context' *Environment and Behavior*, Vol.27, pp723-743.
- Thompson, M., R. Ellis and A. Wildavsky (1990) *Cultural Theory*, Boulder: Westview Press.
- Vaughan, B. (2002) 'Cultured punishments: the promise of Grid-Group Theory', *Theoretical Criminology*, Vol.6 (4), pp411-431.
- Wildavsky, A. (1987) 'Choosing preferences by constructing institutions: a cultural theory of preference formation', *American Political Science Review*, Vol.81 (1), pp3-21.
- Wildavsky, A. and K. Dake (1990) 'Theories of risk perception: who fears what and why', *Daedalus*, Vol.119 (4), pp41-60.
- Witherspoon, S. (1996) 'Democracy, the environment and public opinion in Europe', in W. Lafferty and J. Meadowcroft (eds.), *Democracy and the Environment*, Cheltenham: Edward Elgar
- Young, K. (1990) 'Shades of green' in R. Jowell et al (eds.) *British Social Attitudes: the 8<sup>th</sup> Report*, Aldershot: Dartmouth Publishing.

