UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL, HUMAN AND MATHEMATICAL SCIENCES

Politics and International Relations

Social Statistics and Demography

Europeans' Commitment to Protecting the Environment:

A Cross-Country Longitudinal Analysis, 1990-2009

by

Gina Anghelescu

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ABSTRACT

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EUROPEANS' COMMITMENT TO PROTECTING THE ENVIRONMENT: A CROSS-COUNTRY LONGITUDINAL ANALYSIS, 1990-2009

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The aim of this research is to provide individual and country-level explanations of Europeans' commitment to protecting the environment over the years 1990-2009. Cross-country comparisons and longitudinal analyses are undertaken using the corpus of knowledge provided by green thought and democratic theories. The following countries are included in the study: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Iceland, Ireland, Italy, Lithuania, Netherlands, Poland, Portugal, Slovenia, Slovak Republic, Spain, Sweden, West Germany, and the United Kingdom. The analysis is developed gradually, first using individual-level data from a series of repeated cross-country surveys, conducted within the European Values Study (EVS), and then creating a new standalone dataset, by adding country-level measures related to economic development, democratic governance and environmental policies. The focus is not only on identifying the key drivers of people's commitment to environmental protection, but also on putting these characteristics of the individuals in the context of their country of residence. Public commitment to protecting the environment is measured as willingness of people to give part of their income for environmental protection using an ordinal scale. Thus, a series of ordinal and multinomial multiple regression models are constructed by accounting for individual-level determinants of Europeans' commitment to making financial sacrifices for environmental protection, in the first phase of the analysis. These individual-level models are developed considering a number of proxy variables related to the theory of ecological citizenship, developed by Andrew Dobson (2000, 2003, 2006, 2007). The second phase of the analysis additionally controls for country-level contextual variables related to the income of a country, quality of democracy and CO2 emissions. The findings show that regardless of the income of a country, the quality of democracy, and level of CO2 emissions, across all 22 European countries included in the study people sharing the features of an ecological citizen have been more likely to give part of their income for environmental protection than people who do not share these characteristics. The research therefore contributes to bridging the gap between the green political thought and cross-country longitudinal research on the environment, by empirically demonstrating that the approach of ecological citizenship represent a fertile terrain to better understand people's commitment to environmental protection It also highlights the importance of considering country-level measures related to the economic and political context where the ecological citizens live and the environmental policy adopted by a country. Although clusters or typologies of countries appear to exist, formed based on their quality of democracy, country income status and the level of CO2 emissions, *within* most of them there are no statistically significant differences between countries with regard to ecological citizens' willingness to give part of their income for the environment. There is only one exception: within the cluster comprising of certain former communist countries there are statistically significant differences between countries with regard to ecological citizens' commitment to protecting the environment. Therefore, the research adds knowledge to the field of environmental comparative politics by providing empirical evidence on the connections between democratic governance, environmental policy and the Europeans' commitment to protecting the environment.

Outline of Chapters

The introduction provides the arguments of the research, emphasising the importance of understanding the variation over time of people's environmental commitment in the context of their country of residence. Two key-issues in environmental governance have increased the importance of adopting this research aim*. Firstly, the existing disparities between the behaviour of various countries regarding environmental issues may cause a serious delay in getting the consensus in international agreements on environmental matters. Secondly, the discrepancies between European countries with regard to citizens' environmental commitment and the desirable common European Union strategy on environmental matters is very likely to slow down the processes related to its implementation. Therefore, by accounting for individual- and country-level predictors of Europeans' commitment to protecting the environment, the research contributes towards bridging the gap between these, sometimes parallel, worlds.*

Chapters 2 and 3 introduce the theoretical background of the research. Chapter 2 is mainly focused on presenting the knowledge related to the topic, which has been already achieved in environmental psychology, environmental sociology, and environmental politics. It starts by focusing on why and how the relationship between humans and environment has been studied. It discusses the overlaps and conceptual delimitations between various theoretical and empirical constructs, such as 'general environmental attitudes', 'environmental concern', and 'willingness to pay for the environment'. Various measures of environmental attitudes are presented and also some limitations that have characterised the research undertaken so far in environmental psychology and sociology. In light of these theoretical and methodological aspects, it is clarified environmental commitment is measured in this thesis using a measure of 'willingness to pay for the environment'. Previous findings regarding various determinants of environmental commitment and the hypotheses behind are discussed. The contribution of environmental politics to advancing new understandings regarding environmental commitment is highlighted and also the global contexts in which they have emerged. With this occasion, I specify the gap that my research aims to bridge, namely the importance of accounting for the interconnections between the citizens and how their state is governed in order to get new understandings regarding public environmental commitment. Finally, I suggest that ecological citizenship is an analytical framework capable of offering new ways of explaining people's willingness to pay for the environment and I detail the research hypotheses.

Chapter 3 details the features of ecological citizenship. It contrasts the dimensions of ecological citizenship with the seven principles of deep ecology, by delineating their similarities and the differences between them. Each dimension is compared with their equivalent counterpart related to other forms of citizenship. The chapter is designed to show the value of ecological citizenship in expressing the new trends in the contemporary human condition and thus to respond to the challenges to democracy, nation-state, and citizenship. I promote the idea that this new form of citizenship has a huge potential to explain public commitment to protecting the environment, by its capacity to bridge the normative principles of green thought with the practicalities of a globalized but fragmented world.

Chapter 4 introduces the empirical part of the research. The first section screens the empirical data available on people's commitment to protecting the environment that would allow adopting a longitudinal cross-country approach. It introduces three sets of data, namely the European Values Study Longitudinal Dataset, the data provided by the International Social Survey Programme, and the data collected within the European Commission's programme on public opinion, known as Eurobarometers. It discusses the advantages and disadvantages of each data set. This brief analysis gets to the conclusion that the European Values Study Longitudinal Data Set is the best choice for analysing Europeans' commitment to protecting the environment, in the first instance.

The second section proposes the analytical framework of the research. It details the distribution of the outcome variable, that is, the Europeans' willingness to give part of their income for environmental protection. It briefly presents the explicative variables, namely the EVS variables chosen as proxy of the dimensions of ecological citizenship. The aim is to highlight the correspondence between the two sides, the theoretical and the empirical one. I conclude the chapter by reiterating the novelty as well as the value of such an analytical framework based on ecological citizenship.

Chapter 5 presents the descriptive statistical analysis of empirical data. It starts by specifying the population under study and the sampling procedures. The idea of change is introduced by looking at the variation over time in Europeans' commitment to give part of their income for environmental protection. The descriptive analysis also investigates whether there is a cross-country variability of Europeans' environmental commitment. The preliminary results support the arguments behind the research and already answer the first research question. Furthermore, the outcome of this descriptive analysis prefigures that the differences between countries and over time in people's willingness to protect the environment might be explained by the distinction between new democracies and established democracies.

From Chapter 6 onwards, more advanced statistical analyses are employed. Chapter 6 presents the explicative models of Europeans' disposition to make financial sacrifices for the environment when accounting for whether or not their personal profile is close to the features of ecological citizenship. Considering 22 European countries over three survey waves, seven categories of people are compared, including those of green citizens. It is given evidence that people sharing the features of an ecological citizen are more likely to express willingness to give part of their income for environmental protection than people who do not share these attributes. This observation is valid for all 22 European countries included into the analysis, over the years 1990-2009. It is also studied if the difference between green and non-green citizens willingness regarding their willingness to give part of the income for environmental protection holds in the context of a low household income.

Chapter 7 presents various analyses that control for the effect of the wealth of a country, its quality of democracy and national environmental policy on public commitment to protecting the environment, in addition to keeping into the explicative models the individual-level predictors, namely the dimensions of ecological citizenship and income). Such an integrative analysis aims to provide an in-depth explanation of Europeans' commitment to protecting the environment. The chapter advances knowledge related to the connections between individual- and country-related features in explaining public environmental commitment. Specifically, it discusses some of the macro-level contexts, such as country wealth, democratic governance, and environmental policy, in which green and non-green citizens express their willingness to protecting the environment.

Chapter 8 interprets the research results and concludes the thesis. The main research findings are highlighted, the limitations of the study are defended, and the contribution of the research to the field of environmental politics is formulated. The thesis firstly demonstrates the value of the theory of ecological citizenship in offering an individual-level explicative framework of public environmental commitment. The thesis also emphasizes the importance of accounting simultaneously for the characteristics of individuals and the profile their country of residence in explaining individuals' commitment to protecting the environment.

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Definitions and Abbreviations

IPCC – Intergovernmental Panel on Climate Change: http://www.ipcc.ch

UNEP- United Nation Environment Programme

WMO – World Meteorological Organization

IPCC WG 1 – IPCC Working Group 1 assesses the physical scientific aspects of the climate system and climate change: http://www.ipcc.ch/working_groups/working_groups.shtml

IPCC WG 2 – IPCC Working Group 2 assesses the vulnerability of socio economic and natural systems to climate change, negative and positive consequences of climate change, and options for adapting it: http://www.ipcc.ch/working_groups/working_groups.shtml

IPCC WG 3 – IPCC Working Group 3 assesses options for mitigating climate change through limiting or preventing greenhouse gas emissions and enhancing activities that remove them from the atmosphere: http://www.ipcc.ch/working_groups/working_groups.shtml

IPCC-AR – the IPCC Assessments Report – a synthesis of the three Working Groups Assessment Reports: http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml

UNFCCC – United Nations Framework Convention on Climate Change

BEPA – Bureau of European Policy Advisers

EU – European Union

EC – European Commission

GDP – Gross Domestic Product

HDI – Human Development Index

QD – Quality of Democracy Index

A3CI – Adjusted Climate Change Cooperation Index

CO_2A – CO_2 Emissions Index Adjusted

DECLARATION OF AUTHORSHIP

I, GINA ANGHELESCU

declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

EUROPEANS' COMMITMENT TO PROTECTING THE ENVIRONMENT: A CROSS-COUNTRY

LONGITUDINAL ANALYSIS, 1990-2009

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signed:

Date: 23 JANUARY 2018,

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Chapter 1. Introduction

The aim of this research is to explain the trends in Europeans' commitment to protecting the environment over the years 1990-2009. This commitment is studied using a proxy variable, which is measured within the European Values Study and refers to 'willingness to give part of the income to prevent environmental pollution'[1]. This definition will be further discussed later in the thesis. The research is designed to provide knowledge regarding whether or not European citizens have shown willingness to protect the environment over time. It considers the specific characteristics of individuals in the macro-societal and political context of their country of residence. Further, it addresses the differences of Europeans' commitment to environmental protection by accounting for the variation over time both within and between countries.

In the field of environmental politics a number of key actors might be seen as having a potential impact on protecting or not protecting the environment: national and local governments, mass media, profit and non-profit organizations, academia, and the public. This is a very broad picture, thus substantial variability would be expected to exist of connexions between these worlds and within them. This research considers the interrelationships between citizens and democratic governance on the issue of the environment, focusing on identifying not only individual-level, but also country-level predictors of people's commitment to protecting the environment.

1.1 Argument

The year 1990 marked the beginning of a considerable reconfiguration of the way the environment is seen and valued due to the scientific warnings related to global warming and climate change. The First Scientific Assessment of Climate Change was released in 1990 under the umbrella of the Intergovernmental Panel on Climate Change (IPCC), the international body

[1] The exact formulation is as follows: "I would give part of the income if I were certain that the money will be used to prevent environmental pollution." This statement is measured using a 4-point scale, from Strongly agree, Agree, Disagree, to Strongly Disagree.

established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO). Although significant signals were given many years before, for example in 1972 when the Club of Rome released the Limits to Growth Report, the launching of the 1990 IPCC Report marked an important shift within the international arena of environmental governance. Many attempted alliances, agreements, and treaties have been negotiated since then, efforts that have not always been a real success for the environment.

After two decades of efforts for consensus in environmental international agreements, a huge variation between countries can still be found with regard to signing and ratifying the IPCC agreements on environmental protection. Yet, some countries have behaved inconsistently over time. The US signed the United Nations Framework Convention on Climate Change (UNFCCC) in 1998; however, it is still on the list of the countries that have not ratified the Convention (UNFCCC, 2014). Canada initially showed a great interest in the implementation of the Kyoto protocol, the international agreement linked to the UNFCCC, but in 2012 it withdrew from the Kyoto Accord. Both parties gave reasons related to the potential effects of the CO2 reductions measures on the economic wealth of the country. The lack of consistency on international environmental politics caused a significant delay in framing domestic environmental strategies that are long-term sustainable. Besides, the environmental governance at the national level has had an insular character (Christoff & Eckersley, 2011: 431; Steinberg & VanDeveer, 2012: 13). These differences between countries are likely to influence the general public and therefore it requires further research into whether the economic development and the political context of a country drive people's commitment to environmental protection [2].

Moreover, despite the fact that the European Commission has promoted an integrated European environmental strategy, the results of the Eurobarometer 69.2, 71.1, and 72.1 (surveys year 2008, 2009) reveal a fragmented societal response to environmental matters. Firstly, large changes in

[2] This research was designed in 2012 and refers to the tine frame 1990-2009. Therefore most of the arguments are given with regard to international negotiations existent up to that time. Although there is no reference to the most recent agreements, such as The Paris Agreement (which has been initiated in 2015, but it is still an ongoing issue), the author is aware of it.

responses across these three survey waves can be observed for many of the same topics. This indicates variation over time with regard to certain environmental issues. Secondly, for several countries (namely, Latvia, Ireland, Lithuania and Hungary) there is some incongruence between decreasing tendencies for considering climate change the most important problem facing the world and increasing tendencies for trust in EU measures for combating climate change. Thirdly, there is strong variation among the national profiles related to environmental issues, which indicates variation between countries. The research undertaken here aims to provide a better understanding of such variations by adopting a cross-country longitudinal approach in the analysis of Europeans' commitment to protecting the environment.

For instance, across European countries there have been different legally binding national targets of CO2 emission reductions, under the Kyoto Protocol (cf. EC website). This means that not only different national environmental strategies should be expected, but also varying degrees of citizens' commitment to protecting the environment. The establishment of the European Union (EU) and the enlargement process have created the ground for convergent environmental policies, but at the domestic level there are differences in start-up levels, resources and infrastructures, so various policy results have occurred. In addition, given that a number of European countries are not members of the EU, further variation is likely to occur across Europe regarding national environmental governance and people's commitment to protecting the environment.

The research aims to contribute to knowledge within the field of environmental politics by explaining people's willingness to protect the environment not only through the cultural variations between individuals but also by accounting for the political context in which they are located. While there are some studies that consider the variation of public environmental concern over time and across countries (Inglehart, 1995; Franzen, 2003; Gelissen, 2007; Franzen & Meyer,

2010), a multilevel and longitudinal analysis of public commitment to protecting the environment, focusing not only on the individuals but also on the various degrees of economic development, democratic governance, and national environmental policy, offers a novel contribution to the field of environmental comparative politics.

Hence, this study is motivated by two research questions:

1) "*Is there variation in people's commitment to protecting the environment across European countries and over time?*"

   In other words, what changes occurred over time in Europeans' willingness to protect the environment since the first Scientific Assessment of Climate Change was released in 1990? It is expected that the international agreements related to environment and the subsequent domestic environmental measures, have led not only to a decrease in CO2 emissions, but also to an increase in public environmental commitment.

1) "*What explains Europeans' commitment to protecting the environment when their individual characteristics are contextualized by the way their country is governed in terms of economic development, democratic features and environmental policy?*"

   The individual explicative level has been selected in order to provide information regarding the concrete life situations that may predict a person's willingness to take the environment seriously. Subsequently, the national explicative level has been chosen for its reference to the background offered by various European states for people's commitment to protecting the environment to emerge and grow.

1.2 The theoretical and empirical background of the research

Three significant macro-social processes emerged in the last four decades in many countries: a rapid path of *modernization*, the third and, recently, the fourth wave of *democratization*, together with the prevalence of *self-expression values*. These processes have been given the name of the "human development sequence", seen as a major phenomenon which promotes human

awakening, emancipation, choice, and autonomy (Sen, 1999; Welzel, Inglehart & Klingemann, 2003; Inglehart & Welzel, 2005).

Such an approach should be a fertile terrain for considering democracy to be at the core of environmental protection. While some studies argue in favour of this idea (Payne, 1995; Neumayer, 2002; Li & Reuveny, 2007; Bernauer & Koubi, 2009), some others tend to promote the need to reconsider how *effective* democracy is as a political system to mitigate environmental issues (Midlarsky, 1998; Walker, 1999; Gleditsch & Sverdrup, 2003). Still, recent reports published under the umbrella of United Nations and European Environmental Agency warn about the responsibility of rich countries in causing problems related to the environment (UN, 2008; EEA, 2009 & 2012). Since many of the rich countries are also democratic, one can also ask 'what is the valid ratio between human development and environmental protection?'

At the theoretical level, the debate on the linkage between democracy and the environment has been of importance for green thinkers since 1970, when a radical discourse was prioritized (Heilbroner, 1974; Ophuls, 1977), followed by a reconsideration of the positions of the greens, in 1990s (Dobson, 1990; Goodin, 1992). Yet, green thought has been developed in times when the idea of nation state is undermined by global social processes (Held et al. 1999; Perraton, 2003) and the classic forms of citizenship are redefined (Miller, 2000; Nyers, 2004; Ong, 2006). Normative projects such as the *ecological citizenship theory* (Dobson, 2000, 2003, 2006, 2007) and *deliberative democracy* are seen as concrete solutions to the need to reconsider the nature-society relationship (Smith, 2003; Stevenson & Dryzek, 2012).

At the empirical level, two alternative approaches on individuals' willingness to protect the environment have been developed over the last four decades. The first is Dunlap's New Environmental Paradigm, which contends that we are assisting a significant rise in people's concern with the environment all around the globe, concern which is not consistently associated

with national affluence (Dunlap and van Liere, 1978, 1984, 1992/2000). The second is the post-materialistic perspective, which advocates that environmental concern might be found amongst those people adopting post-materialistic values rather than in those holding materialistic values (Ester, Halman & Seuren, 1993; Inglehart, 1995); under this perspective, national affluence is seen as a significant predictor of pro-environmental attitudes (Gellisen, 2007; Franzen & Meyer, 2010).

1.3 The analytical framework of the research

My thesis draws on the knowledge achieved within green theory, which emerged as a critical scrutiny to democratic theories, but also considers the availability of cross-country survey data to assess whether or not the principles of environmentalism provide a fruitful ground for understanding people's commitment to protecting the environment. The thesis implicitly assumes the idea that these green principles can be found in the deep cultural and political tradition of Europe.

The first reason for adopting such an idea is that democracy emerged in Europe, being reinforced by the general principle of the nation state, since the Peace of Westphalia and by the idea of enlightening and empowering people, since the French Revolution. Green theory has been formulated within this cultural and political space, critically interrogating the way democracy is understood and how the idea of citizenship is practiced in everyday life (Mills, 1996; Dobson, 1996; Smith, 2004). The second reason is that the European Union has had an important role to play in international environmental agreements, with the UK and Germany being at the forefront of environmental policy negotiation and implementation (Boehmer-Christiansen, 1995; Dryzek et al., 2003).

In addition to the variety of hypotheses that have been formulated regarding the predictors of environmental commitment, I propose a novel framework, built upon the theory of ecological citizenship (Dobson, 2000, 2003, 2006, 2007). A number of dimensions embody this form of

citizenship, which is seen as a key-answer to the actual challenges to democracy and citizenship: *a non-contractualism*, emphasizing *non-territoriality* and *horizontal relationships*, blurring the borders between the public arena and the *private sphere,* under the umbrella of *social justice, care and compassion* (Dobson, 2000: 41-61).

Under this analytical framework, the medium-level hypotheses are as follows:

1. People's commitment to protecting the environment is explained by the features of citizenship, regardless of the variations between countries and over time.
2. The commitment of individuals to protecting the environment is better explained by the features of ecological citizenship than any wealth-related characteristics.
3. A considerable variation between countries it is expected to exist. As part of the variation between countries it is expected that the probability of expressing a high commitment to protecting the environment is higher in:
    - 3.1. Countries that have a high level of economic development, comparing to those countries that have a medium-upper or medium-lower economic development.
    - 3.2. Countries that have a high degree of democratization, comparing to countries with medium or low level of democratization;
    - 3.3. Countries that report positive outcomes of national environmental policy, comparing to those with medium or low outcomes. A positive outcome of environmental policy is likely to refer to reductions in CO2 emission. This will be detailed later in the thesis, particularly in Chapters 2 and 7.

The research method used to test these hypotheses is survey data analysis. In the first phase of the research data is analysed from the European Values Study. *Willingness to give part of the income for environmental protection is modelled* as the dependent variable. A multilevel and longitudinal ordinal approach is adopted, due to the character of the measurement of the response variable and the data structure. Initially, only individual-level explicative variables are

introduced into the models, selected as proxies of the principles of Ecological Citizenship Theory. This analysis accounts for the variability that might exist over time and across countries, without considering the specific sources of variation given by democratic governance or environmental policy. Country-level measures that can be related to the Framework of Human Development are examined as potential explanatory variables. GDP per capita, GDP growth rate, the Effective Democracy Index (Alexander & Welzel, 2008, 2011), the Comparative Political Dataset (Armingeon et al., 2012), the Environmental Sustainability Index (Esty et. al., 2005), and the Climate Change Cooperation Index (Bernauer & Bohmelt, 2013) are considered for inclusion in the analysis. To distinguish between these two phases of analysis, the first is named "individual-level analysis" and the second is titled "integrated analysis".

1.4 Research Contributions

This research provides insights into variation in people's commitment to protecting the environment across European countries and their determinants. Further, its longitudinal approach offers a better understanding whether Europeans' commitment to protecting the environment has varied over time. Its focus on both individual and country-level explanatory variables bridges the worlds of citizens and governance, offering a new perspective on the contemporary challenges to democracy. With reference to the integrated analysis this is one of the few attempts to *bridge* the field of green thought with that of human development sequence. While the first promotes an in-depth reconsideration of democracy, the latter unifies apparently separate macro-social phenomena under the approach of social progress, emphasising the huge impact of these large-scale social changes on *empowering people*. This study advocates the idea of convergence between democratic governance, economic progress and people empowerment.

Chapter 2. Approaches to public commitment to protecting the environment

This chapter aims to clarify how environmental commitment will be defined and explained in this research and the hypotheses that drive the study. It discusses the various contributions to the current understanding of environmental commitment developed within environmental psychology, environmental sociology and environmental politics. It also highlights the importance to put such understandings into the actual global context and to account for how the interplay between citizens and state may impact public environmental commitment. The chapter presents how environmental attitudes have been defined, measured, and explained. It discusses the hypotheses related to what explains environmental attitudes, environmental concern or willingness to pay for the environment. These three expressions have been seen as denoting the same thing by certain scholars, but have also been considered as referring to aspects that are different. The discussion will follow such overlaps and delimitations, signalizing the similarities and differences.

In Chapters 2, 3, and 4 I will disentangle the general aim of the thesis, which is to provide individual and country-level explanations of Europeans' commitment to protecting the environment over the years 1990-2009. I will discuss how this commitment can be defined and explained and why a cross-country longitudinal approach can help in deepening the understanding of the current relationship between people and the environment. The research is designed to contribute to the field of quantitative comparative environmental politics, and therefore I will give priority to theoretical frameworks developed within this scientific field. In order to enhance the theoretical view adopted, I will start however by referring to lines of thoughts well-established within other disciplines of the social sciences. Then, I will progressively focus on the theory of Ecological Citizenship developed by Andrew Dobson (2000, 2003, 2006, 2007). I will argue that, at the individual level, this theory is the best framework for explaining environmental commitment, comparing to other models developed within the field of environmental politics, such as the principles of Deep Ecology (Naess, 1983), or imported from other disciplines, such as the New Environmental Paradigm (Dunlap and Van Liere, 1978; Dunlap et al, 2000) and the post-materialism approach (Inglehart, 1995). Also, this research has a strong empirical character and relies on secondary data. For this reason, I would expect it is unlikely to identify a ready-to-use dataset that offers the possibility to empirically test all the competing theoretical perspectives that have been formulated in the social sciences for explaining people's commitment to protecting the environment to which I will refer in this thesis. Instead, I will

screen the available empirical data, select and combine data in order to create a stand-alone data set that can allow myself to answer the research questions. Similarly, although highly advanced statistical methods have been developed in the last decades in the social sciences, I will select that method of analysis that suits the overall aim of the research and fits best the structure of the data.

2.1 The relationship between humans and nature: attitudes and behaviours

The way humans relate to the environment has been studied either from the perspective of attitudes or from the one of behaviours and mostly under the assumption that only humans have an active role in this relationship[3]. The initial approach was that environmental behaviours are driven by environmental attitudes (Meneses & Palacio, 2005; Best, 2009, 2010; Sidique et al, 2010) and environmental attitudes are determined by values (Schwartz, 1992; Stern & Diez, 1994; Stern et al, 1995, 1999; Schultz et al, 2005). Theories of general attitudes (Ajzen, 1985, 1991) distinguish between 'attitudes', 'intentions' and 'behaviour'. Behaviours are caused likely by the intention strength. Intentions are determined likely by attitudes, but also by subjective norms and the perceived control of pursuing the behaviour. However, new developments have shown that attitudes can interact with values and behaviours, and therefore they can be seen both as a result and as a determinant of values and behaviours (Fabrigar, MacDonald & Wegener, 2005). Such interconnection has been found also with regard to environmental attitudes (Milfont & Duckitt, 2010).

Most of the research that has been undertaken regarding environmental attitudes belongs to the fields of environmental psychology, social psychology, cross-cultural social psychology (Maloney & Ward, 1973; Maloney, Ward & Braucht, 1978; Weigel & Weigel, 1978; Stern, 1992, Stern et al, 1986, 1995, 1999; Schultz 2000, 2001; Schultz et al, 2004, 2005; Fransson & Garling, 1999; Milfont

[3] However, this relationship appears to be a double-sided relationship: not only does society define the environment according to its understandings, but also the environment 'forces' human beings to reconsider their rationalities when environmental issues occur. Most of the international negotiations and agreements on this matter have had behind urgent or stringent environmental issues.

& Duckitt, 2004, 2010), and environmental sociology (Dunlap & Van Liere, 1978; Dunlap et al, 2000; Dunlap & Jones, 2002; Dunlap & York, 2008; Xiao & Dunlap, 2007; Franzen & Mayer, 2010; Franzen & Vogl, 2013a, 2013b). Researchers in the field of environmental politics have partly considered such perspectives (i.e. values determine attitudes & attitudes shape behaviours) and focused on something more appropriate to green political thought, where the concept of citizenship stands deeply (Fisher, 2000; Dobson, 2000, 2003, 2006; Dobson & Bell, 2006; Dobson & Saiz, 2006; Smith & Pangsapa, 2008; Stoker et al, 2011). Such conceptual framework appears to be as a more 'comprehensive' construct than a salient set of values, incorporating and comprising of not only values and attitudes, but also behaviours. Later in the thesis I will argue that adopting the citizenship perspective could better explain people's commitment to protecting the environment. For the moment, I will detail the knowledge achieved through theoretical and empirical research on environmental attitudes and behaviours and their determinants.

The preoccupation with pro-environmental behaviours is part of the widely accepted idea that the business-as-usual socio-economic and political model contains a high probability of weakening and depleting the Earth, its balance related to natural resources and climate as well as the lives of Earth's inhabitants (humans and non-humans). This idea has been promoted since the Limits to Growth Report (Meadows et al, 1972), and The First Scientific Assessment of Climate Change, in 1990. A few examples of such environmental risks are the increase in global temperature, associated with extreme weather hazards, ice sheets melting, and the risk of extinction of about 20% to 30% of species (IPCC-AR4, 2007:29 IPCC-WG1, 1990: 292; IPCC-WG2, 2014: 4)[4]. Despite of such warning related to human *behaviours*, the focus of research related to the relationship between humans and the environment has been on identifying *the attitudes behind* pro- (or anti-) environmental behaviors ((Olli et al, 2001; Kortenkamp & Moore, 2006)). This has led to the study of environmental attitudes formation and their predictors (Stern & Dietz, 1994; Schultz & Zelezny,

[4] The IPCC Assessment Report states the following: "There is medium confidence that approximately 20 to 30% of plant and animal species assessed so far are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5 to 2.5°Celsius over 1980-1999 levels."

1999). If this has happened because environmental attitudes can signalize a variety of environmental behaviours is arguably, as some studies found that it is crucial to distinguish between general and specific environmental attitudes (Stern & Dietz, 1994; Milfiont & Duckitt, 2010). Nevertheless, verbal commitment appears to be the most important predictor of pro-environmental behaviour, more important than socio-demographic characteristics or cognitive knowledge, as a meta-analysis of 128 studies on this topic suggests (Hines et al., 1986).

2.2. Conceptual overlaps and delimitations between 'environmental attitudes', 'environmental concern', and 'willingness to pay for the environment'

The environmental attitudes have been defined as "a collection of beliefs, affects, and behavioural intentions a person holds regarding environmentally related activities or issues" (Schultz et al. 2004: 31) or as "a psychological tendency expressed by evaluating the natural environment with some degree in favour or disfavour" (Milfont, 2007 quoted by Milfiont & Duckitt, 2010). Some researchers have distinguished between four elements of environmental attitudes: verbal commitment, actual commitment, affect, and knowledge (Maloney & Ward, 1973; Maloney et al, 1975). Other researchers have used the expression "environmental concern" interchangeably when referring to environmental attitudes (Weigel, 1983; Fransson & Garling, 1999; Van Liere & Dunlap, 1981; Schultz & Zelezny, 1999; Dunlap & Jones, 2002, 2003; Franzen & Vogl, 2013a). Within this line of research environmental concern has been seen as "an attitude towards facts, one's own behaviour or others' behaviour with consequences for the environment" (Fransson & Garling, 1999). In addition, certain authors have distinguished between two components of environmental concern: cognitive and conative (Franzen & Meyer, 2010; Franzen & Vogl, 2013a, 2013b). The conative dimension of environmental concern within this line of research mainly refers to 'willingness to pay for environment' or to financial aspects. Such way of defining and measuring environmental concern has been used in certain cross-country surveys and I will refer to it later in this chapter. In contrast, Dunlap's New Environmental Paradigm Scale (Dunlap & Van Liere, 1978; Dunlap et al., 2000), which has also been associated with

environmental concern, does not include any item related to 'willingness to pay' or other financial aspects. Stern (1992) has captured the variety of ways the environmental concern has been defined in the literature by grouping them in four conceptions. Firstly, environmental concern is 'a new way of thinking', which is delineated by Dunlap's New Environmental Paradigm. Secondly, environmental concern is related to a kind of anthropocentric altruism, which includes worries regarding the effects of environmental issues on one's life and other humans. Thirdly, environmental concern is purely egoistic and includes worries related only to the impact of environmental problems on someone's life. Fourthly, environmental concern is related to a 'deeper cause', which can denote some 'terminal values' (in line with Rockeach, 1973), religious beliefs (referring to White, 1967; and Eckberg & Blocker, 1989) or a shift from materialistic to postmaterialistic cultural values (citing Inglehart, 1990). A number of scholars have criticized such conceptual overlaps between environmental attitudes and environmental concern (Bamberg, 2003; Schultz et al., 2005). Some of them clearly defined the latter as "the affect associated with environmental problems" (Schultz et al. 2005: 458). Either implicitly or explicitly, the three elements – beliefs, affects, and behavioural intentions – have been constitutive of Stern's Value Belief Norm Model of Environmentalism (Stern et al., 1999), and Dunlap's New Environmental Paradigm (Dunlap & Van Liere, 1978; Dunlap et al., 2000). This differentiation is fairly similar to the one distinguishing between the cognitive, affective, and conative element. Such conceptual delimitations have shaped the way environmental attitudes have been measured. The following paragraphs will briefly present some of these measurements of environmental attitudes, making the transition towards the idea of commitment for protecting the environment, which is the focus of this thesis.

2.3. Empirical measures of environmental attitudes and limitations related to the study of environmental attitudes

Reporting "several hundred varying conceptual definitions" of environmental attitudes, Dunlap & Jones (2002) have created a typology of such measures based on two axes (topic & instrument), each varying by level of complexity (single or multiple). The result is a four-fold typology, which may refer to 1) single topic and multiple instruments; 2) multiple topics and multiple instruments;

3) multiple topics and single instruments; and 4) single topics and single instruments. However, as Dunlap and Jones have noted, only a few of these measures have had their reliability and validity tested (Dunlap & Jones, 2003). It is about Maloney & Ward's Ecological Attitude Scale (1973, 1975), Weigel & Weigel's Environmental Concern Scale (1978), and Dunlap and his collaborators' New Environmental Paradigm Scale (1978, 2000). All these three measures are self-reported and multiple topics-multiple instruments scales. I will detail only two of these scales and then I will focus on one the most recent developments within this field of research.

The shorter version of the Ecological Attitude Scale (Maloney & Ward, 1975) consists of four main dimensions. Three of them are internally consistent and positively correlated: Verbal Commitment, Actual Commitment, and Affect. Verbal Commitment refers to what a person states that would be willing to do to protect the environment, while Actual Commitment captures what a person actually does in this regard. The third dimension, Affect, shows the emotions related to environmental issues. The fourth dimension refers to Knowledge regarding environmental problems and it stands separated by the three dimensions mentioned above. Researchers have used this scale in various combinations: Verbal and Actual Commitment only; Verbal and Actual Commitment plus Affect; or all four dimensions taken together (Borden & Francis, 1978; Schahn & Holzer, 1990). As I have mentioned previously, Verbal Commitment appears to be related to ecological behaviour more than socio-demographic characteristics or knowledge related to environmental issues in many other studies, regardless of the way it has been measured (Hines et al., 1986).

The New Environmental Paradigm Scale (Dunlap & Van Liere, 1978; Dunlap et al., 2000) has been widely used not only by researchers within environmental psychology or environmental sociology (Hawcroft & Milfont, 2010). Some scholars within environmental politics have also use it in their research (Jaeger & Matti, 2010). The scale has been seen as a construct consisting of one dimension that ranges from Anthropocentrism to Ecocentrism. At one end it is the idea that

humans are superior to other beings in nature and independent from nature (Anthropocentrism); at the other end, humans are seen only as one of the myriads of beings existent on Earth (Ecocentrism). However, it has been constructed to capture three dimensions of the relationship between humans and nature: 'limits to growth', 'balance of nature', and 'rejection of anthropocentrism' (Dunlap and Van Liere, 1978) and then another two dimensions: 'likelihood of eco-catastrophes' and 'human exemption from the constraints of nature' (Dunlap et al., 2000). The New Environmental Paradigm is seen as the counter part of the Dominant Social Paradigm. They both reflect Schwartz's dichotomy regarding the relationship between humans and nature (Schwartz, 1999), which contrasts 'mastery values' to 'harmony values': the first set of values presumes that humans exploit and master the world as they wish; the latter refers to a harmonious integration of humans and their ways of living into the nature. The New Environmental Paradigm Scale incorporated either twelve items, in the study published in 1978, or fifteen, in the one published in 2000. In both versions the scale was positively correlated with pro-environmental behaviour and support for environmental regulations (Dunlap & Van Liere, 1978; Dunlap et al., 2000). In addition, other researchers have confirmed the connections between this scale and pro-environmental behaviours (Olli et al, 2001; Kortenkamp & Moore, 2006). With regard to its dimensionality, Thapa (2001) questioned the existence of only one dimension. However, most of the researchers who have used this scale have included it in their analyses as a single index (Bechtel et al., 1999, 2006; Dunlap et al., 2000; Hunter & Rinner, 2004; Bostrol et al., 2006).

It is worth adding that other scholars have considered environmental attitudes as a construct comprising of multiple dimensions (Maloney & Ward, 1973; Stern & Dietz, 1994; Schultz, 2001). A recent contribution to such approach is the one of Milfont & Duckitt (2010), who proposed the Environmental Attitudes Inventory as a measure that accounts for the horizontal and vertical structure of environmental attitudes. The horizontal structure comprises of twelve dimensions (each constructed by ten items, five of them in reverse order than the other five). They refer to

Enjoyment of nature, Utilization of nature, Altering nature, Dominance over nature, Conservation motivated by anthropocentric concern, Conservation motivated by Ecocentric concern, Environmental treat, Personal conservation behaviour, Personal support for environmental movement activism, Support for interventionist conservation policies, Support for population growth policies, Confidence in science and technology. The vertical structure is formed by two correlated factors (Preservation and Utilization) that together contribute to a single higher factor. As this approach is fairly new, one would not expect a high number of studies that have made use of it. However, there are more than 100 citations of this paper on Web of Science Core Collection, and shorter versions of this scale have been empirically validated in two studies (Sutton & Gyuris, 2015; Moussaoui et al, 2016).

Limitations related to the study of environmental attitudes

To conclude this section, a few thoughts regarding the definition and measurement of environmental attitudes can be drawn. Firstly, the same topic has been studied by various disciplines often in various ways. Such variation has encouraged the emergence of many small studies undertaken on small populations or in small geographical areas (Maloney & Ward, 1973, Maloney et al, 1975; Weigel & Weigel, 1978; Dunlap & Van Liere, 1978, Schultz & Zelezny, 1999; Dunlap et al., 2000; Milfont & Duckitt, 2010). Even when such studies are cross-country, they are often done on population of students. More than this, there has been the tendency to shorten such measures, not only when they are used in large-scale empirical studies such as International Social Survey Programme, World / European Values Survey; Health of the Planet Survey, but also in small-scale studies (Borden & Francis, 1978; Sutton & Gyuris, 2015; Moussaoui et al, 2016). Secondly, only few authors clearly distinguished between environmental attitudes and environmental concern and this interchangeability is commonly accepted and rarely acknowledged. The New Environmental Paradigm Scale, which is a widely used measure of environmental attitudes, is seen as measuring general environmental concern (Schultz & Zelezny, 1999). Thirdly, in some studies on this topic, environmental attitudes are studied for their own

importance, with no reference to their effects or their potential determinants, and under the assumption that their presence already signalizes that the environment (the object of the attitude) is protected. Some approached have highlighted that the link between environmental attitudes and environmental behaviours may not be strictly linear (Fransson & Garling, 1999; Milfont & Duckitt, 2010). This has complemented Hines et al. meta-analysis on this topic, which has shown that environmental behaviours are mostly predicted by verbal commitment (Hines et al., 1986).

2.4. The outcome variable: the empirical measure of environmental commitment

Taking into consideration all these ideas, the research presented in this thesis analyzes people's commitment to protecting the environment using one proxy variable, which is 'willingness to give part of the income for preventing environmental pollution'. The exact formulation of this statement in the EVS questionnaire contains the certainty that the money will be used for this purpose only. In this way, it links verbal commitment with a certain degree of control regarding the realization of such intention. Therefore, the dependent variable shows *willingness to do something to protect the environment*, which is indicative of environmental commitment. The following section will present the determinants of environmental concern and of the willingness to pay for environmental protection, as these two constructs appear to be the closest to the variable that it is to be explained in this research. For clarity, I will use interchangeably the terms 'environmental commitment' and 'willingness to pay (for the environment)'. I will refer to 'environmental concern' when the author(s) cited used this expression in their papers and I will acknowledge when the meaning is not related to 'willingness to pay for the environment'. Any other variations in the way I formulate a sentence will be only to avoid repetition in a paragraph. As a general rule, the work of Dunlap and his collaborator has referred to environmental concern *without* including 'willingness to pay', when they have used The New Environmental Paradimg; while the work of Inglehart, Gelissen, Franzen & Meyer, Franzen & Vogl has been developed around the idea that environmental concern includes a measure of 'willingness to pay'.

The use of a proxy variable that equally refers to 'giving income' and 'environmental protection' may raise the issue of the validity of measurement. Neumayer has already highlighted that the validity (and reliability) of data collected within cross-country environmental surveys has not been fully taken into account (Newmayer, 2002). A partial solution to this issue will be presented in Chapter 6, when the empirical analysis is performed and interpreted.

2.5. Predictors of environmental concern and/or of the willingness to pay for the environment previously tested in environmental psychology and sociology

Individual-level determinants: values

A very specific line of research related to values as determinants of environmental concern has emerged at the same time with Scwhartz's theory of universal values (Schwartz & Bilsky 1987, 1994; Schwartz, 1992) and has been influenced by this theory to some extent. Reviewing the literature of that time[5], Schwartz & Bilsky identified five elements constitutive to the definition of values: they are "(a) concepts or beliefs (b) about desirable end states or behaviours, (c) that transcend specific situations, (d) guide selection or evaluation of behaviour and events, and (e) are ordered by relative importance." (Schwartz & Bilsky, 1987: 551). The definition does not refer to whether values 'guide' attitudes. However, as I have previously mentioned, Stern presented environmental concern as denoting the shift from materialist to postmaterialist values, in his review regarding the conceptions of environmental concern (Stern, 1992). From this, he and his collaborators later developed the Value Basis of Environmental Concern (Stern & Dietz, 1994; Stern et al., 1993, 1995, 1999). They distinguished between social-altruistic orientations, egoistic value orientations, and biospheric value orientations (Stern & Dietz, 1994). This typology was used to predict people's willingness to behave pro-environmentally, using a selection of items from Schwartz's human values scale (Schwartz, 1992). Stern et al. found that people sharing biospheric values will tend to declare willingness to adopt pro-environmental behaviours (Stern et al, 1995).

[5] They referred to Morris, 1956; Pepper, 1958); Maslow, 1959; Allport, 1961; Smith, 1963; Levy & Guttman, 1974, and Rockeach, 1973.

In a cross-cultural study on college students from fourteen countries, Schultz & Zelezny analysed whether environmental attitudes are predicted by values. They used the New Environmental Paradigm Scale (Dunlap et al, 1992) and another measure of environmental attitudes (Thompson & Bartons, 1994) as outcome variables and a shorter version of Schwartz's human values scale (Schwartz, 1992, 1994) as explanatory variables[6]. They found that Ecocentrism (i.e. high scores of New Environmental Paradigm Scale) is predicted positively by Universalism and negatively by Power and Tradition.

The impact of values on environmental concern has been analyzed also within the post-materialism approach. Inglehart (1995) empirically tested whether post-materialistic values predict environmental concern using country survey data pooled from various sources: the second wave of World Values Survey, the first wave of European Values Survey and a number of Eurobarometers. These data sources were used selectively, in accordance with the various aims of Inglehart's study, which had multiple goals. The environmental concern was not defined using the New Environmental Paradigm Scale. Instead, Inglehart derived an index from the answers to four questions, two of them related to 'willingness to pay for the environment', one generally related to financial aspects and another one regarding the perceived magnitude of environmental problems. He found that environmental concern is positively predicted by Post-Materialistic values, especially in advanced industrialized countries. This hypothesis has been known as 'the subjective values hypothesis' in the literature, since then. Various authors have tested this hypothesis in various methodological ways, some of them contesting it (Dunlap & York, 2008), some other confirming it (Franzen & Meyer, 2010; Franzen & Vogl, 2013a)[7]. Although this hypothesis has been at the core of a long debate, it doesn't constitute a key-question for my research, and therefore it won't be empirically tested.

[6] They used 37 of 56 items, but maintained the 10 sub-dimensions grouped in four dimensions: Self-transcendence (Universalism & Benevolence), Self-Enhancement (Power & Achievement); Openness (Self-Direction), Stimulation, Hedonism); and Tradition (Tradition, Conformity, and Security).

[7] Franzen and Mayer refer to post-materialistic *attitudes* in their 2010 paper.

Individual-level determinants: political preferences

Some studies have attempted to demonstrate the impact that political preferences could have on environmental concern. Dunlap (1975) and Van Liere & Dunlap (1981) found in their studies that the magnitude of environmental concern is higher amongst liberals comparing to conservatives, in the U.S. Neumayer (2004) employed an analysis based on World Values Study pooled data and shown that, at the aggregate level (all 45 countries included into analysis), the odds to adopt a pro-environmental position increase by an increase in or move towards the left-wing on the political ideology scale. Franzen & Vogl (2013a) also accounted for the effect of political affiliation on environmental concern, using data collected within the International Social Survey Programme (ISSP) and a measure of environmental concern that includes 'willingness to pay' for the environment, and got similar findings. Although such an aspect could be of interest to some degree, it won't be analyzed in my research. The reason is not only related to the potential limitations of the measurement, which may not fully capture the huge variation of the political spectrum across European countries and over time. As I will show later in the thesis, the complexity of the statistical method chosen to explain Europeans' commitment to protecting the environment requires a careful selection of the variables that are to be included into the explicative models.

Individual-level determinants: age, education, and income

Whether environmental concern can be predicted by age, income and education has been also investigated in several studies. For instance, some researchers have found that environmental concern (measured using the New Environmental Paradigm Scale) is predicted negatively by age and positively by education (Dunlap & Van Liere, 1980; Jones & Dunlap, 1992; Arcury & Christianson, 1990; Dunlap et al, 2000). There are fewer studies accounting for individual-level income within this line of research that defines environmental concern trough the New Environmental Paradigm Scale (Arcury & Christianson, 1990). The hypothesis is that people belonging to middle and upper classes will be more likely to share environmental concern,

because their basic needs have been already met. It is worth adding that the preoccupation regarding whether wealth predicts environmental concern follows Maslow's hierarchy of needs theory (Maslow, 1943, 1954), which assumes that humans' motivations are hierarchically distributed in six stages, from physiological (the basic) to self transcendent (the highest) needs and that they can be fulfilled only trough sequential stages, where stage 'B' can be reached only after stage 'A' was completed. However, the need to breathe (clean, unpolluted) air was considered to be a basic physiological need by Maslow. This aspect has not been taken into account by those scholars who considered that people are concerned about the environment only *after* their basic *money-related needs* have been met. However, in light of the debate related to the costs involved in environmental protection and climate change mitigation and adaptation, the focus on understanding the connections between wealth and environmental commitment remains a priority. This being said, the hypothesis that individual wealth positively predicts willingness to pay for the environment will be tested as part of my research.

The impact of age, education or income on environmental concern has been studied also from the perspective of post-materialism (Inglehart, 1977, Gelissen, 2007; Franzen & Meyer, 2010; Franzen & Vogl, 2013a, 2013b), using survey data that measures environmental concern as referring to 'willingness to pay', in addition to other components. The studies related to this approach will be further discussed in the next paragraphs, given their specificity. It is, however, important to mention that education has been measured in all these studies either as 'the number of years spent in education', or as ' the maximum level of degree gained, but it does not account for whether an individual is still undertaking an educational programme. This could drastically alter the results of any of these studies, as, for example, young people who are undertaking undergraduate studies appear in such datasets as holding a medium educational level. Actually, none of the well-known cross-country surveys, ISSP, WVS, EVS or the European Social Survey (ESS), gives the possibility to fully control for the level of education. In addition to other methodological reasons, such as the availability of data for the entire period of time studied or the complexity of the explicative model, my option is to not test in this research whether level of education predicts environmental commitment.

Country-level determinants: the affluence hypothesis and the objective issues hypothesis

Using comparative survey data coming from European Values Survey and World Values Survey, which measure environmental concern as being related to 'willingness to pay for the environment', Ester, Halman and Seuren (1993) developed what is now known in the literature as "the affluence hypothesis". They made the assumption that "generally high levels of environmental concern are expected with differentiations according to modernization stage" (1993: 165). Their empirical analysis could not provide evidence in this regard (Ester et al, 1993). Inglehart also tested this hypothesis and introduced two new hypotheses: the "objective environmental issues" hypothesis and, as I have already shown, the "subjective values" hypothesis (Inglehart, 1995). He sought to demonstrate that "mass support for environmental protection tends to be greatest in countries that have relatively severe objective [environmental] problems" (1995: 57). His empirical analysis allowed him to make the statements that this hypothesis might not always hold.

Dunlap & York (2008) have replicated part of the above-mentioned analyses, in addition to their own predictive models. They claimed that neither the affluence hypothesis, nor the subjective values one could empirically be validated. It has been argued that not only the individual concern with the environment is negatively related to national affluence but also "the green/ecology movement is not significantly related to national affluence" (Dunlap & York, 2008: 547-549). Moreover, it has been advanced the idea of 'the globalization of citizens' concern for the environment' with a strong emphasis that post-materialist values are not adequate for explaining "the global spread of environmental activism and concern' (ibid, p.551). These new findings have taken the name of 'globalization hypothesis'. Other researchers have also tested the two hypotheses, using either the ISSP data or the WVS and EVS data, or comparatively all together. The affluence hypothesis has been confirmed by several authors (Gellissen, 2007; Franzen & Meyer, 2010; Franzen & Vogl, 2013a, 2013b), but the objective issues hypothesis could not be empirically supported (Franzen & Vogl, 2013a, 2013b). As in the case of individual-level income,

given the debate regarding the effect of wealth on environmental concern (measured as 'willingness to pay'), the affluence hypothesis will also be tested in my research.

Individual- and country-level determinants: multilevel analyses

A number of authors have recently started to take simultaneously into account the characteristics of the individuals and of their country of residence when analysing the determinants of environmental concern (regardless if this includes or not a measure of 'willingness to pay'). This has happened in the last decade only and it has reflected the new developments in the social sciences: the proliferation of new methods in social statistics, such as multilevel modelling; and the growing availability of large-scale cross-country empirical data. None of these, for instance, existed in '70s, when Maloney & Ward (1973) or Weigel & Weigel (1978) developed their measurements of environmental attitudes. They were also in a very incipient state in '90s, when Ester (1993), Inglehart (1995) or Dunlap (1995) undertook their studies regarding environmental concern. Such developments give the opportunity to avoid some of the limitations that currently exist in the study of environmental concern, to which I will refer later in this chapter.

Employing multilevel analyses on data collected from 50 countries, Gelissen (2007) showed that "Income, postmaterialism, educational attainment, environmental involvement and age are related directly to support for environmental protection". This was one of the very first studies that drew attention to the importance of taking into account both individual and contextual determinants of environmental concern. Franzen & Meyer (2010) confirmed that income positively predicts environmental concern, at the within-country level, and that the wealth of a nation has a significant effect on environmental concern at the between-country level. It was also the first time when it was clear how much of the variance of the environmental concern is explained by the individual-level predictors (such as age, gender, education, income, post-materialistic values), when country-level predictors are added: the maximum of the variance

explained at the individual level was 0.190 and the minimum was 0.156. Also, some predictors, such as post-materialism, are no longer statistically significant, at least in the models tested in this research. Franzen has deepened his analyses in two recent studies (Franzen & Vogl, 2013a, 2013b). Their analyses confirmed that only 10% of the variance of environmental concern is explained by individual-level determinants such as post-materialistic values, political affiliation, age, education, income, gender, and trust. They confirmed once more that the wealth of a country (measured as GDP per capita) positively predicts environmental concern, and it explains 64% of the variation between countries. In addition, they showed that this prediction remains valid even when environmental concern does not include a measure related to 'willingness to pay' (Franzen & Vogl, 2013b). The huge advantage of these multilevel models that account both for individual and country level determinants is the possibility to disentangle the effect of each predictor and how much of the variance is explained at each explicative level. Subsequently, this encourages the emergence of new hypotheses that would try to explain what has remained unexplained. In light of the knowledge achieved not only within environmental psychology or sociology, but also within environmental politics, my research will test several novel hypotheses. They will be formulated after a brief discussion regarding the specific view of the environmental politics on environmental commitment and the global contemporary context in which this view has been developed. Before this, a few ideas related to the already demonstrated determinants of environmental commitment will be highlighted.

Time and country as determinants of environmental commitment

The hypotheses that environmental concern could vary between countries and over time have been implicitly contained in any cross-country study I have mentioned so far. There have been some opposite views regarding such variations between countries or over time. Some authors have claimed that the environmental concern has increased all over the globe (Dunlap, 1995; Dunlap & York, 2008). This implies no variation between countries with regard to the *existence* of this preoccupation, but still variation with regard to the magnitude of the phenomenon; it also

assumes variation over time, but a positive relationship: that is, the environmental concern increases by time. Other scholars have not necessary considered that the environmental concern does not exist all over the globe, but they have mainly been highlighted that this phenomena is conditional to the affluence of a country, which, in turn, constitutes the ground for the existence of postmaterialistic values and, this being achieved, the environmental concern emerges. (Ester et al, 1993; Inglehart, 1995) Also within this way of approaching environmental concern, the variation is related to the magnitude of the phenomena, but here as a function of the interplay between the wealth of a country and the position of the individuals within that given country (Gelissen, 2007; Franzen & Meyer, 2010; Franzen & Vogle 2013a, 2013b). The variation over time could be tested only after a number of repeated cross-country surveys have been implemented and data have been made available to the entire scientific community, and for this reason some scholars avoided to clearly affirm that environmental concern would decrease or increase by time. However, Franzen & Vogl (2013a) found that environmental concern decreased by time, but they could not identify any source of such variability in their explicative models. As I have mentioned, the aim of my research is to explain Europeans' commitment to protecting the environment over the years 1990-2009 by considering the characteristics of the individuals in the context of their country of residence. This aim contains the hypotheses that environmental commitment varies over time and between countries. The expectation is that environmental commitment will increase by time, in the context of the ongoing international negotiations that have been initiated within the United Nations Framework Convention on Climate Change, after the first IPCC report regarding climate change was launched (1990). There is also the expectation that environmental commitment varies between countries. Firstly, the above-mentioned Convention on Climate Change set up a number of goals and each country that has decided to take part in this agreement would eventually implement measures related to this agreement. One of these goals and expected measures is about reducing the level of CO2 emissions. At the European level, the EU has an overall target, but also each country member of the EU set up her specific target. Thus, the hypothesis is that environmental commitment varies between countries as a function of environmental policy. Whether CO2 emission have decreased or decreased will be taken into

account as a source of variation of environmental commitment. Secondly, the hypothesis is that environmental commitment varies between countries, as a result of economic development. This is in line with previous findings (Franzen & Meyer, 2010; Franzen & Vogl, 2013a, 2013b), but the key-contribution of testing again this hypothesis is that the effect of country wealth on environmental commitment is analysed in a totally different methodological context than anything that has been done before. This methodological context will be clarified later in this Chapter and also in Chapter 3 and 4. Thirdly, the expectation is that environmental commitment varies between countries due to the varying degrees of democracy. This hypothesis is not only in line with various theories of democratization affirming that democracy empowers people (Welzel et al, 2003; Welzel & Inglehart, 2005; Alexander and Welzel, 2008, 2011, 2012), and, subsequently, the environmental commitment. This hypothesis is also related to the idea that accounting for how democracy is practised within a given country captures the underlying connections between the state and its citizens. As I will show in the following paragraphs, the constant preoccupation within environmental politics has been exactly to capture the inter-connections between the state and its citizens in order to better understand environmental commitment. The key-contribution of my research is that it analyses the variations between countries with regard to environmental commitment by concomitantly accounting for environmental policy, economic development, and the degree of democracy. Further aspects related to these explicative models will also be discussed in Chapter 7. For now, the focus is to present how environmental commitment has been studied within environmental politics and the contexts in which such understandings have been developed.

2.6. The contribution of environmental politics to explaining people's environmental commitment

In addition to the lines of thought developed within environmental psychology and environmental sociology with regard to the study of environmental commitment, scholars within the field of environmental politics have taken a different approach. For instance, there are some specific features of environmental issues that challenge the classical approaches of political sciences. The

boundaries of time and space can be very much blurred in the case of any Earth-related or geo-physical issue. Thus, the cause or the effect of an environmental hazard can be found outside the state border and/or traversing many generations (Dobson, 2000; Dryzek, 2005). Such characteristics of environmental issues are at odds with classical forms of governance, which are based on territory and the nation state, and turn the attention on humans' capability to anticipate the effects of their own actions. Certain projects developed within the green theory aimed at responding exactly to these challenges, such as ecological citizenship or democratic deliberation regarding environmental issues (Dobson, 2000, Smith, 2003). In addition, a redefinition of national environmental policies and a re-configuration of the international arena on environmental matters have taken place since these environmental matters have arisen (Boehmer-Christiansen, 1995; Steinberg & VanDeveer, 2012).

Complementary to the theories of environmental attitudes, their determinants and their effects, scholars within environmental politics have drawn attention that it is crucial to clearly define the relationship between society and environment. Some green thinkers promoted a view adopting the man-in-environment principle (Naess, 1973). In addition, other scholars criticized those views that promote a distinction between the society and environment and an exclusive right of humans to make use of the environmental resources (O'Riordan, 1981; Eckersley, 1993, 2004). The view of green thinkers presents the Earth as a fundamental aspect of human beings' lives, while most of the studies within post-materialism focus on humans' financial and material concerns as a precondition for environmental protection to proliferate. These contrasts between the two approaches constitute a useful occasion to reflect not only on how the environment is seen, but also on *how humans define their selves*. While the 'man-in-environment' principle enlarges the horizons of humankind by integrating its existence into the broader life of the planet (Naess, 1973; Dryzek, 2005), the materialistic view reduces the humanity to its economic needs (Eckersley, 1995) as they are met through the primacy of economic order. To note that if different principles and interests are advanced by different actors, when it is about the same thing, the

environment, then a substantive fragmentation and inconsistency in how a given society manages its environmental issues will be expected.

In addition to the variety of ways of defining and researching the relationship between humans and the environment, there are a number of phenomena that should be taken into consideration, as they have happened during the same epoch and potentially could have an impact on how the understanding of this relationship has been constructed over time. It is important to consider here the issues related to the effects introduced by various processes of globalization into the contemporary understanding of nation-state, as most of the measures related to environmental protection are to be formulated and implemented at the state level. Sharing a tradition of more than three hundred years, the nation-state idea relied on two pillars: authority and territoriality (Philpott, 2010). The first has been the condition for developing the relationships between states, while the second has regulated the within-state relationships. Yet, the first principle configured international politics, where the sovereignty is exercised under different alliances for trading, for making war or making peace (Philpott, 2010). The second principle set up the political community, giving voice to a great diversity of *politeia* within the same geographical and cultural area. Despite of the global spread of this form of governance, which Philpott considered to be "the only form of polity ever to cover the entire land surface of the globe" (Philpott, 2010), there are forces able to break the state sovereignty, forces that are global. Globalization is mainly defined as a set of phenomena that implies interconnectedness (Waters, 1995; Held, 1999; Croucer, 2004; Scheuerman, 2010). This interconnectedness has been determined by various processes of change that exist at economic, technological, political, and cultural level (Croucer, 2004), but, in turn, it has also enhanced them (Held, 1999). The processes of formation of globalisation are not necessary linear, or circular, but rather organic and in some aspects still fragmented (Sur, 1997). For instance, some scholars have claimed that globalisation has determined inequality (Milanovic, 2005; Crame & Diamond, 2009). It is worth mentioning that, at the same time, globalisation has allowed for revealing the injustice that exists all around the globe, either through the new developments of technology and inter-networks communications, or through the emergence of

global democratic justice (Dallmayr, 2002), or through the work of supra-national institutions (i.e. The United Nations) and transnational advocacy networks, which contributed to the development of global civil society (Ylmaz, 2009). Nevertheless, any state-related intervention has been reconfigured by the interconnectedness of the modern world (Croucer, 2004). How exactly the state has responded to globalisation has been a topic of many debates related to national politics, national economy, and national citizenship. Perraton (2003) speaks about three approaches to globalisation: hyper-globalist, skeptical, and transformationalist. Only one of these three approaches considers that the state is capable of maintaining unchanged its classical forms of authority and territoriality despite of the challenges that globalisation can bring. To the other extreme, the hyper-globalist approach posits that globalisation represents 'the end of the nation-state' (Held, 1999: 10). Within this approach, Castle & Davidson (2000) affirm that globalisation undermines the autonomy and power of the state, diminishes the cultural homogeneity that is specific to a given state, and encourages trans-national and inter-national migration. These three aspects impact the classical forms of national citizenship (Castle & Davidson, 2000: 8), which refer to how the individuals are actively involved in public affairs, and, implicitly, how they will express environmental commitment. In addition to the two opposite views, the transformationalist approach speaks about the restructuration of state power and world politics (Held, 1999). As par of such transformations, the significance of citizenship is also reconsidered, especially due to the changes in the role of the state, but also because of the rising of the variety of religious and ethnic identities (which implies the recognition of their social and political rights to exist) and the increase of trans-national forces (Falk, 2000:7). Once more, such potential changes can shape the way individuals will take part in state affairs and how they will express their commitment to protect the environment.

Therefore, it might be said that the global social processes may affect each and every state, but the variability between and within these forms of polity is given by how politics is exercised. As part of this variability, the role of the individuals has also changed and become capable of changing the direction of public affairs, not only through voting or social movements, but also through their everyday living. As I have mentioned in the introductory part, the contemporary

processes of modernisation, democratization and empowerment of citizens have all converged towards the idea of human development sequence (Welzel et al, 2003; Inglehart & Welzel, 2005). In addition, the processes of globalization have challenged the state and how citizenship is exercised. As such, we are assisting at two concomitant social processes, having opposite directions: an individualization of *persona* and a reconfiguration of the nation-state.

Deep Ecology principles

Green theorists have questioned the relationship between humans and the environment since the emergence of this literature. Their discourse has changed over time, not only by considering the effects that certain environmental issues might have upon our everyday living (Dryzek, 2005) or by promoting and demonstrating the virtue of some new forms of communitarianism (Doherty & de Geus, 1996), but also by incorporating into the green thought the global changes that have occurred over the last four decades (Dobson, 2000; Speth, 2003). We, thus, have a significant dynamic interrelationship between environmental hazards, the macro-social changes, and the various projects of greening the society.

By challenging individuals' self-interest, social hierarchies and inequalities or by interrogating the weaknesses of bureaucracy (Doherty & de Geus, 1996) green ideas have been progressively incorporated into the debate on "*how to live together*" or, in other words, how the polis is governed. They are not the only political projects that urge for reconsidering how humans understand to build their community, to share their lives with other fellows. But they might be considered the few aiming to integrate the environment into the meaning of being a human. The principles of deep ecology formulated by Arne Naes express very well the change in perspective. They have been expressed by various theories within the green arena at different degrees and this will show the variability of positions within the field. For the moment, it might be worth having a quick look at what exactly is introduced when adopting the principles of deep ecology.

The man-*in*-environment principle has been already mentioned. This is the key idea of deep ecology, as a counterpart of the man-*and*-environment perspective. It is about the opposition of eco-centrism *to* anthropo-centrism and critics of deep ecology emphasize the impossibility of conceiving the environment at the core of humans' concerns (Jacob, 1994; Barry, 1995). While much of the debate is focused on whether the environment is placed at the centre or at the periphery of humans' attention, little is discussed regarding what exactly the condition of humankind can receive by considering such a principle. Naess speaks about "the total-field image" by which the true character of human beings is revealed. I would add here the importance of sharing a very special kind of self-awareness, which allows practising freedom of choice and social justice. This consciousness only can be the ground for defining ourselves as being one of the myriads of forms of life on Earth, as being part of an *alive* environment. Moreover, for this self-awareness to exist, a particular type of governance is required. The dispute is not only between autocracy and democracy (Payne, 1995), but also between the various forms of democracy (Midlarsky, 1998; Smith, 2003; Wissenburg & Levy, 2004). Thus, we have the first frame of reference for re-defining the environment, the *polis* and, *politeia* as well.

The second principle emphasizes that the master-slave relationship between the humans and environment leads to "the alienation of man from himself" (Naess, 1973: 344). It is called "the principle of biospherical egalitarianism" and advocate honouring each and every form of life. The principle of diversity and symbiosis reinforces the risk of altering the true nature of humans when it is adopted an attitude encouraging any ability or action that would lead to killing, exploiting or suppressing other forms of life. It rather focuses on humans' potential "to coexist and cooperate in complex relationships" (ibid). The fourth principle promotes an anti-class posture, extending the wisdom of the first three ideas to any group conflicts, including those between the nations. Then, it is the principle of local autonomy, encouraging the reduction of "the hierarchical chains of decision" and decentralization, in order to reduce the dependence of any kind and, subsequently, to strengthen self-autonomy and self-sufficiency.

While the first five principles challenge the classical way of *establishing relationships* with others, the next two invite to carefully consider *the effects of our actions*. One of them is named by Naess "the principle of complexity, not complication" and warns about "the profound human ignorance of bio-spherical relationships and therefore of the effects of disturbances". The latest, the principle of fighting pollution and resource depletion mainly refers to *how* we do this, what kind of measures are taken and what are the effects of such decisions. The example that Naess gives is related to the need to balance between the costs of installing any device for preventing or ameliorating pollution and the costs of living.

All these seven principles are integrated by Naess in what he considers to be the *ecosophy*, a wisdom that goes beyond scientific description and prediction, looking for ecological harmony and inviting for reflection on our values and norms as they can be found at the level of environmental policy and governance. Adopting or promoting such wisdom has not been a simple step to take. Due to the variability within the field of green thought, a certain principle has been prioritized by a theory, while other has better expressed the specific of a different theoretical framework (Dobson, 1993, 1995). Then, the tension between the eco-philosophy and eco- or green politics is another issue, which determines strong argumentations (Barry, 1995, 1999). My intention in this discussion has therefore been to provide an insight of the key ideas that the green thought introduces into the debate on the nature-society relationship.

2.7. Limitations of the empirical studies related to predictors of environmental commitment

Under all the above-mentioned circumstances, the relationship between humans and the environment has been studied using concepts such as environmental attitudes, environmental concern, willingness to pay for environmental protection. I consider the latter as expressing the commitment to protecting the environment, which is the focus of this thesis. Various disciplines have developed various approaches, but they all have had in their attention, as common denominator, the role of individuals in environmental protection. As I have shown, environmental psychology and environmental sociology have the merit that have developed various theoretical

and empirical frameworks that define, measure, and explain, to some extent, people's environmental concern and their care for the environment. In addition to various socio-demographic characteristics (young, well educated, wealth), biospheric and universalist values are positively correlated with environmental concern. The effects of these characteristics on environmental concern are mostly analysed one-by-one and very rarely these characteristics are introduced all together in the explicative models (Gellissen, 2007; Franzen & Meyer, 2010; Franzen & Vogl, 2013a, 2013b). This reduces the possibility to affirm that young people who are well educated and rich express pro-environmental attitudes. Moreover, these models are not comprehensive enough to allow taking into account the individuals' characteristics that can have an active role in complementing and enhancing contemporary state governance, in general, and environmental governance, in particular. These models do not link environmental values or other potential socio-demographic determinants (age, education, income) with other personal characteristics of individuals that can comprehensively express the (active) position of these individuals in the context given by how their country of residence is governed[8]. Nor they consider how all these individual- or country-level features, taken together, could explain willingness to do something for the environment. In this regard, the environmental politics can offer new ways of understanding people's environmental commitment by the mean of ecological citizenship (Dobson, 2000, 2003, 2006). This is a framework capable of integrating elements that have been studied only separated within environmental psychology and environmental sociology. To date, only a few studies have analysed simultaneously individual- and country-level determinants of environmental concern (Gellisen, 2007, Franzen & Meyer, 2010, Franzen & Vogl, 2013a, 2013b). Still, none of these studies have considered the potential of citizenship concept in providing an explicative framework of people's environmental commitment. My research aims at bridging this gap, by linking the features of ecological citizenship that an individual could share with certain measures that express how a county is governed, in order to better understand people's commitment to protecting the environment.

[8] I am referring here to any outcome of country governance. The outcome can be broadly categorized as political, social or economic.

2.8. Research hypotheses and concluding remarks

The environmental commitment has mostly been studied in small pieces, not only when it is about the various aspects of life, but also with regard to methodological aspects such as the magnitude of the study, the generalizability of the results, the discipline they belong to. Very rare studies have approached environmental commitment in a way that comprehensively accounts for the interconnections between individuals and the features of their country of residence (Gellisen, 2007, Franzen & Meyer, 2010, Franzen & Vogl, 2013). None of these studies have considered the individuals as *citizens* (who are involved in the affairs of their country of residence) and the state as the context of life of these citizens, and how these two together determines the commitment to protecting the environment of these individuals. My research proposes the theory of ecological citizenship as a framework that allows for a better understanding of the interplay between citizens and state in explaining Europeans' commitment to protecting the environment. Therefore, in addition to testing the hypotheses that have previously been formulated, my research also tests the hypothesis that sharing the features of an ecological citizen shapes the willingness to give part of the income for environmental protection. Ecological citizenship is a multidimensional concept that captures seven fundamental aspects of being and acting as a citizen in today's world. Given not only its complexity, but also its novelty within the set of predictors of environmental commitment that have already been tested in the literature, each of the seven dimensions of this conceptual framework will be discussed in Chapter 3.

To sum up, my research tests a number of hypotheses already formulated in the literature. It is expected that environmental commitment varies over time and across European countries. It is also assumed that individual- and country-wealth positively predicts environmental commitment. This is the affluence hypothesis formulated under this name merely at the country level. The research does not fully account for the interaction between individual wealth and country wealth (i.e. poor people in rich countries or rich people in poor countries, etc). In principle, it will be expected that people with low income will behave the same across countries and so will do

people with high income. The research also hypothesizes that positive outcomes of environmental policy, such as a decrease in CO2 emissions, will increase the probability to share a high level of environmental commitment. In addition, the research tests the hypothesis that high levels of democratization will increase the likelihood of sharing a high level of environmental commitment. Further, the research introduce a novel conceptual framework, that it, ecological citizenship, under the assumption that it explains the variance of environmental commitment. Ultimately, the research includes the assumption that ecological citizenship predicts environmental commitment regardless of the variation over time and across countries.

Chapter 3. Ecological Citizenship: seven dimensions of the individual-level explanatory framework of Europeans' willingness to pay for environmental protection

This chapter presents the main features of the theory of ecological citizenship introduced by Andrew Dobson in the year of 2000 and built over the first decade of this century (2000, 2003, 2006, and 2007. I advance the theoretical principles of ecological citizenship as a substantive framework to understand and explain individuals' commitment to protecting the environment. Each dimension of this framework is discussed by contrasting with Deep Ecology principles and, when necessary, similar dimensions existent in other forms of citizenship.

Why ecological citizenship?

The main argument in favour of choosing ecological citizenship as a framework that have the potential to explain the variation of public environmental commitment is strictly related to its place in environmental politics and the aims for which its principles have been articulated. As I have shown in Chapter 2, globalisation has determined a reconfiguration of the state affairs. According to some scholars (Castle & Davidson, 2000; Faulk, 2000), the state is challenged to renegotiate its role in relation to its citizens and the new global forces that have emerged in the last decades (for instance, global companies and global banks, supra-national institutions and trade alliances, global non-governmental organizations). Complementary, certain macro-societal process are taking place regarding democratization and democratic practices, economic development, and citizens empowerment (Sen, 1999; Welzel et al, 2003; Inglehart & Welzel, 2005). Once more, the state is challenged to reconsider its classical forms of governance and to respond, for instance, to an alarming decrease in vote turnout. As Stoker (2011) highlighted, the problem may not be that people are no longer interested in getting involved in the affairs of their state, but rather that citizens do not have proper contexts in which they can express their interests. Ecological citizenship has been articulated as a political project able to reframe the traditional way of understanding the self and to rethink the meaning attributed to polis and politeia. It is not about inventing a new type of citizenry, as it is rather seen as a 'a project already

in place' (Dobson, 2000: 41, 58). It is about revealing how certain citizens may understand to live their lives in times when the connections with governmental bodies are distant. Ecological citizenship signals the changes that occurred in the practices of citizenship with regard to *civic virtues, citizenship territory, membership and sense of belonging,* as well as the Aristotelian distinction between *public-private* and the social contract state-citizens which regulated not only the idea of *rights and responsibilities*, but also *the hierarchical relationships between citizens and state*. Each of these dimensions has been part of a classic form of citizenship or another, but they now have other ways of manifestation. For this reason, Dobson presented it as 'a disruptive challenge to traditional notions of citizenship' (Dobson, 2000: 57). The dimensions of ecological citizenship will be discussed in detail one by one, comparing and highlighting how they depart from the classical views of citizenship. I will look not only at the historical roots of every one of these features, when possible, but also at its future-oriented meaning.

3.1 Self-Awareness: the precondition for saving the environment.

The self-awareness, which the ecological citizenship expresses, is complementary to the man-in-environment principle advanced within deep ecology movement. They both refer to the phenomenon of enlarging the horizons of self and invite us to reconsider the traditional understanding of what is meant to be a human being. The emancipation of individuals has significantly occurred in modern democracies, over the last five decades (Inglehart, 1977, 1990; Welzel & Inglehart, 2010), but it has deep roots in the European history. The idea of enlightening *people* has been of importance since ancient Athenian democracy, when it was a good context for various philosophers to advance questions and develop their theories on *the essence of human beings, of persona*. In this regard, Socrates referred to the immortality of the human's soul, Plato regarded *justice* as the highest quality of the soul, and Aristotle highlighted the value of what we call today consciousness (Hendrik, 2009). Since then, the human condition has been built, rebuilt and again built through the Medieval Age, the Peace of Westphalia, the Enlightenment, the French Revolution, and the post-World War. Throughout more than two thousands of years there were ups and downs in how humans have defined themselves and how they have understood to

relate to other human beings. Today's self-awareness is an attribute expected from any person who lives in a democratic country. This phenomenon has naturally emerged within modern societies due to the socio-economic and political developments that created the ground for individual autonomy to rise (Beck, 1992, Welzel & Inglehart, 2005). Complementarily, it is also advanced by grand supra-national projects such as the European Union, which has adopted various strategies for innovation, youth or women to promote the empowerment of people (EC, 2009; EC, 2010; BEPA, 2010).

It has become so common to consider human emancipation a regular feature of modern democracy that many of the indexes built to measure the degree of democracy in a country include *the right to free conduct of life* in their conceptual framework. In the methodology of the Democracy Barometer, for example, this indicator and the one showing the right to physical integrity are taken into consideration to capture the individual liberties – seen as a function of the quality of democracy (Merkel & Bochsler, 2014: 3, 14). Freedom House also rates the degree of freedom, which exists in a country by including personal autonomy and individual rights in their framework (Freedom House, 2014). Furthermore, the rationale of the Effective Democracy Index, which is built on Freedom House' ratings, is that the emancipation of people is the most important feature of a democracy (Alexander, Welzel & Inglehart, 2012: 42).

The focus on *persona* while debating over the environment which the ecological citizenship framework introduces is very much linked to what is called 'the ontology of the embeddedness'. This approach is seen as a shift from defining the relationship between humans and environment as 'differentiation and dominance' to a view which encourage the discourse of 'embeddedness and codependence' (Dobson, 2003: 107). Here is the area where the idea of self-awareness promoted by ecological citizenship is close to the man-in-environment principle of deep ecology. While the ecological citizenship theory considers the destruction of the environment to be exactly the same as the destruction of the self (Dobson, 2003: 108), the principle of deep ecology

reinforces the 'relational, total-field image' which unveils the true nature of humanity by regarding the human beings as *part* of the environment and not separated from it (Naess, 1973: 95). The difference that Dobson introduces between his theory and deep ecology is related to the old opposition between anthropocentrism and ecocentrism. He describes ecological citizenship as '*a fundamentally anthropocentric notion*' (Dobson, 2005: 600) for the only reason that he values the virtue of justice as 'the principal virtue of ecological citizenship'. Moreover, he speaks about a community of justice which can only be orientated towards humans:

> *"If the community of ecological citizenship is primarily a community of justice, the community must be a human, or human-like, one."* (idem, p. 601)

In contrast, Naess has always referred to the importance to focus on the environment, rather than to humans, considering that the difference between the shallow and the deep ecology resides exactly in protecting the environment for its intrinsic value or for the benefit of humanity (Naess, 1973: 95). While Dobson rhetorically asks "What reasons can there possibly be for not caring for it [the environment]?" (Dobson, 2003: 107), Naess brings to the fore that as long as the protection of the environment is done only to secure the affluence of people, the principle of man-<u>in</u>-environment is not in place, but the one of man-<u>and</u>-environment (Naess, 1973: 95).

Therefore, the theory of ecological citizenship is in between these two approaches, the one of ecocentrism and the one of anthropocentrism, by promoting a reconsideration of the humankind with regard to the environment and the others. I would add here that it has been Dobson's merit to introduce the idea of justice, as equilibrium or moderation in the debate anthropocentrism versus ecocentrism. The novelty of adopting such a position is not only that the bridge between humans and the environment can be built, but also the one that it extends the limits of the self and self-awareness towards the others.

3.2 Justice – the principal virtue of ecological citizenship.

By referring to justice as the key attribute of ecological citizenship, Dobson introduces a third element into the relationship between Anthropos and Environment: The Others. Thus, the anthropocentrism–ecocentrism debate is mediated through this central feature, which is *social justice*. Here Dobson advances the idea of the ecological footprint, highlighting that ecological citizenship calls for being aware of the consequences of an action and for realizing that this action gives rise to the 'relationships with those on whom it impacts'. Thinking in terms of ecological footprint, the space of ecological citizenship is delineated:

> "The 'space' of ecological citizenship is created by the metabolistic relationships between individual human beings (and collection of them) and their non-human natural environment as they go about producing and reproducing their daily lives. This is the ecological footprint" (Dobson 2003: 106; 2005: 604)

Further, the distinction between 'globalising' and 'globalized' individuals is made, in the sense that the actions of 'globalizing' citizens can 'impact at the distance' but the actions of 'globalized' individuals cannot (Dobson, 2005: 601).

The virtue of justice has a key role for ecological citizenship with regard to at least two particular aspects. First, it enhances the awareness of the effects of individual actions; specifically, it is about living in such a way that a person's ecological footprint does not affect others' choices that are important to them. When he refers to 'the others', Dobson makes clear that he equally advocates for people from all over the Earth as well as for present and future generations, given that the environmental issues and their effects have no borders in space and time. Thus, the second facet of the key role of justice in ecological citizenship is exactly related to 'a just distribution of ecological space' (Dobson, 2003: 132).

As mentioned at the beginning of this chapter, the virtue of justice and self-awareness correspond with each other. While the specific nature of the self-awareness is one that enlarges the horizons

of the self and invests it with the quality of mastering private life, the virtue of social justice posits *the others* at the centre of attention, refining the relationships between human beings and redefining the meaning of community. Here is a very important shift in the practices of citizenship from the focus on the persona to the one on the generalized other, stranger or non-stranger, human or non-human. Another change that the virtue of social justice introduces in the practices of citizenship is related to the *community* of justice, which is not defined by a physical territory, but emerges through each and every assumed act of justice orientated not only towards fellows, but mainly for the benefit of the strangers.

By adopting such a perspective, the key virtue of ecological citizenship emphasizes the anti-class principle of deep ecology. While Dobson refers to 'globalizing' and 'globalized' individuals, Naess highlights the distinction between 'exploiters' and 'exploited', sanctioning social differences that are due voluntary or even non-voluntary acts of exploitation and suppression (Naess, 1973: 98). They both draw attention that these differentiations negatively influence self-realization and reduce the chances of those who are exploited or live in an affected environment to fulfil their potential.

One of the criticisms of ecological citizenship is related to the idea of justice introduced as a key element of this contemporary form of citizenship. Hayward argues that 'there is nothing distinctively ecological about' justice or care and compassion (Hayward, 2006: 441). Dobson's reply is that the focus is on 'the source of the demand', not on the character of these virtues. As I showed before, ecological citizenship is about enlarging the horizons of the self so much that it becomes aware of the effects of personal actions, trying to avoid interfering with others' lives and developments. This is why justice is one of the key features of ecological citizenship, because it helps in realizing a community between the self and the others in such a way that 'the others' become the 'I' and the 'I' becomes 'the others'. By focusing on the welfare of the others, the self is also fulfilled not only through an extension of its limits, but also through a redefinition of the

community. Thus, new meanings of persona and of the polis are set forth, as well as a new understanding of politeia, of *how* the polis is governed. Therefore, the virtue of justice accompanies the self-awareness in making ecological citizenship a future-oriented approach to humanity.

3.3 The private sphere as a legitimate realm of ecological citizenship.

I already pointed out that the two pillars of ecological citizenship, the self-awareness and the virtue of justice, are concomitantly directed towards the environment and the site of private life. The ecological space, as well as the ecological footprint would not be substantively articulated with reference only to the environment and no allusion to the *personal* arena. Firstly, this is because ecological citizenship expresses the practice of citizenship not *as one of the many* distinctive aspects of life, but as a total, always ready to manifest form of citizenship. Dobson conveys this particularity by claiming: '*it is all about everyday living*' (Dobson, 2000: 50). Secondly, the private realm is seen as the site when the ecological citizenship can be learnt, both in terms of its virtues and their outcomes. Dobson's discourse is that 'private acts have political consequences' (idem, p: 48).

Under the above circumstances, ecological citizenship breaks the classical Aristotelian view on citizenship which separates private sphere by public arena and, thus, it takes into consideration public acts only for the benefit of the polis. Since antiquity until nowadays the idea of citizenship has relied on the distinction public-private / active-passive. Ecological citizenship disrupts the well-known categorization of Marshall, namely the civil, political or social citizenship (Marshall, 1950: 10) as well as Turners' divide between an active citizenship in the public sphere and, implicitly, a passive citizenship in the private life (Turner, 1990: 189) or Lister's regard on citizenship as status rather than as practice (Lister, 1997: 3). The idea of polis as well as the one of the Westphalian state has been always focused on public sphere and social goods; hence any form of citizenship has been invested with 'public' features only. Moreover, the predominant idea

has been that citizenship has the particularity to give a deep understanding of the macro-social and political trends. The value of ecological citizenship lies in refining the primacy of the public sphere by drawing the attention not only towards the environment, as cosmo-polis, as something larger than any form of polis that has ever existed, but also in the direction of private life, as micro-cosmo-polis. While the former feature becomes possible under the social justice auspices only, the latter can be done throughout self-awareness.

The focus on the private realm along with the fact that it articulates the ecological footprint as the space of ecological citizenship goes closely with the principle of fighting pollution and resource depletion advanced by deep ecology. Dobson relates the ecological footprint to the relationships with 'those of whom it impacts' (Dobson, 2005: 601), whereas Naess warns that environmental protection should be done by trying to avoid the side-effects related to an increase in poverty or social class differences when the environmental measures are taken or innovative anti-pollution devices are installed (Naess, 1973: 97). They both refer to the importance of 'an ethics of responsibility', and of realizing the effects of our actions carried out in private or public arena, at the individual as well as at the societal level.

The sort of criticism that has been launched with regard to considering the private realm the legitimate area of ecological citizenship activity is related to the low impact that an ecological citizen may have on environmental protection as long as their actions are 'singular' (Wolf et al, 2009: 507-508). As shown, Dobson's argument is that '*every* act has public implications' and that the sustainability in society can be accomplished by producing a justice-oriented policy, which considers the others as well as the self (Dobson, 2007: 280-281). Again, such a position is similar to Naess's warning that the environmental protections should be done by considering together all the principles of deep ecology, in all their aspects (Naess, 1973:97).

To conclude, the importance of the private sphere in regarding the ecological citizenship as a call to reconsider the human condition resides not only in blurring the borders between public and private or active and passive citizenship, but mainly in questioning *how* the protection of the environment is made. By their capability to delineate the ecological space as a dynamic practice performed both in private and in public sphere or, put differently, anytime is needed, the self-awareness, the virtue of justice and the site of private realm are constituting the three key features of ecological citizenship. They also form the ground for regarding ecological citizenship as a future-orientated approach to humanity.

3.4 The non-reciprocal responsibility of the ecological citizenship.

Once the distinctions public/private and active/passive are no longer valid, ecological citizenship can be performed merely *anywhere* (Dobson, 2000: 57; 2006: 448). Without the protection of the traditional borders and rules, the demand for self-awareness and justice in embodying the space of ecological citizenship can be better understood. As could be seen, the ecological footprint is about doing justice for the good of those whom an action impacts, therefore it raises the pursuit for non-reciprocity. To the break-up of the Aristotelian view of citizenship, another canon is refined: the contractualism, which has been a regular feature of citizenship, since the system of sovereign states has been established by the Peace of Westphalia. It has been already mentioned that ecological responsibility is orientated towards human and non-human beings with no borders related to time or space. Dobson reiterates that this form of citizenship is 'more about obligations than about rights' (Dobson, 2000: 59). However, ecological citizenship goes beyond the idea of mutual agreement of 'gift exchange', which guarantees the personal benefit, but, instead it focuses on 'non-reciprocal responsibility', expressed as the free will of caring about others. As long as the ecological footprint has asymmetrical effects, in the sense that one's decision might be good for him/her, but it can be translated in injustice for the others, non-reciprocal obligations are required, rather than reciprocity (Dobson, 2003: 127).

This 'non-reciprocated and unilateral' character of the duties of ecological citizenship (Dobson, 2000: 44) has risen the criticism that what Dobson presents as 'ecological citizenship' is mainly about 'the moral obligations of a common humanity' (Hayward, 2006: 438) and, subsequently, it is not clearly differentiated what is *political* and what is *moral* in this project (ibid). Dobson's reply to these remarks is that the ecological footprint *generates* the need for doing justice and thus *produces* political obligations. In the context of 'ecological space scarcity', ecological citizenship implies a non-reciprocal responsibility for acting morally correct, which gives rise to political obligations between those who act and those whom it impacts (Dobson, 2006: 448).

Again, a similarity between the features of ecological citizenship and the principles of deep ecology can be found, this time with reference to the principle of biospherical egalitarianism. The non-reciprocal nature of ecological citizenship is close to the idea advanced by deep ecology of an 'equal right to live and blossom' of any form of life which exists on Earth (Naess, 1973: 96). Dobson clearly states that the ecological citizen awaits nothing in return 'from future generations and other species' for performing their duties towards them (Dobson, 2000: 43), which is in line with the principle of a 'deep respect' showed to all living organisms, introduced by Naess. Moreover, the ecological egalitarianism extended to *all* species that live on Earth helps in going beyond the limits of the master-slave relationship between humans and the environment which characterizes the purely anthropocentric view, a perspective which, in Naess' view, it has caused 'the alienation of man from himself' (Naess, 1973: 96).

By including into the meaning of 'the others' the non-human beings and by focusing on their wellbeing as well as on the personal comfort, under the auspices of non-reciprocity, the ecological citizenship breaks the rule of contractualism. Although this feature is seen by Dobson as the main barrier for ecological citizenship to get recognition, especially in liberal democracies, the non-reciprocated quality of this form of citizenship opens the door for reconsidering the idea of territory and membership and, subsequently, of the polis and politeia. As I will show in the next

sections of this chapter, these two aspects have been criticised by other political thinkers (Hayward, 2006; Mason, 2009). Before detailing this, a quick look at the virtues of care and compassion, as the second virtues of the ecological citizenship, might help in framing the debate related to the space of ecological citizenship and the relationships within it.

3.5 Care and compassion – the secondary virtues of ecological citizenship.

Ecological citizenship is seen by Dobson as 'a polar opposite alternative' to the Aristotelian view of citizenship, which has given a masculinist profile to citizenship since antiquity. According to Pocock, the approach to citizenship of the ancient times has been that '*the citizen must be a male of known genealogy, a patriarch, a warrior, and the master of the labour of others*' (Pocock, 1995: 31 *quoted* by Dobson: 2000: 56). This perspective has influenced the dominant paradigm of citizenship for hundreds of years, mainly in republicanism (van Gunsteren, 1994 *cited* by Dobson, 2000: 54). The paths of modernization and feminist ideologies have challenged such an approach, thus, contemporary modern societies are already permeable to a change in perspective (Welzel & Inglehart, 2005; Lister, 1997).

In line with the demand to reconsider the meaning attributed to citizenship, Dobson refers to a kind of motherhood, which is expressed both in the way of thinking and doing of ecological citizens. The virtues of care and compassion that Dobson denotes to ecological citizenship result naturally from the virtue of justice, but are deeply related to this maternal approach of everyday life. However, ecological citizenship goes beyond gendered meaning, which is constitutive of the activity of caring, and invests it with the quality of 'a citizenly virtue' (Dobson, 2000: 46). This shift is necessary when the activity of caring is extended towards strangers, transgressing the traditional borders of motherhood, which normally is the area of relatives or maybe friends and neighbours. In order to act with fairness for strangers that are distant both in time and space, the virtue of justice needs to be accompanied by care and compassion. In Dobson's view, this helps in

meeting the conditions of citizenship in an 'ecological age', mainly when one's way of living influence 'the vulnerable others' (idem, pp: 46-47).

The similarities between the virtue of justice as the key virtue of ecological citizenship and the principle of Anti-Class Posture advanced by deep ecology are also applicable to the secondary virtues of care and compassion. The same can be asserted with regard to Hayward's criticism to the non-ecological nature of the virtue of justice as well as Dobson's reply to it. In order to conclude this section I would reinforce the crucial role of the virtues of care and compassion in making the scene of everyday life an arena of politeia and of politics. Dobson reiterates that the site of private sphere can be seen as an area in which the virtues of justice, care and compassion can be performed and learnt. However, their key feature resides in the fact that the effects of such dispositions and actions have political consequences. For this reason, the practice of the virtues of justice, care and compassion in private arena for the benefit of the generalized other bring to this personal realm the attribute of being 'a springboard to the international and intergenerational arena' (Dobson, 2000: 60).

3.6 The non-bordered character of ecological citizenship.

As I outlined earlier, this form of citizenship turns the centre of attention from the societal, as a macro-level authority which gives the context to delineate the rules and borders of being and acting as a citizen, to the importance of the 'I', as well as of 'the others'. I reiterated that this new manner of approaching the world requires a profound sense of justice. I also portrayed ecological citizenship as referring to the non-reciprocal responsibility to show care and compassion for distant strangers both in time and space. I showed that, under the auspices of justice, it can be performed both in the public and the private sphere, and so the private realm becomes the catalyst for practising ecological citizenship in such a way that it has *political* consequences both at the local and global level. Therefore, in contrast to the traditional forms of citizenship that rely mainly on the national arena (Marshall, 1950; Turner, 1990; Cohen, 1999), ecological citizenship

has an inclusive character regarding citizenship territory, membership and sense of belonging by considering the local area, along with the global one, as having a significant importance in the everyday practices of citizenship (Dobson, 2000: 51-52).

The novelty of ecological citizenship is that it goes *beyond* the nation-state, but it does not constitute a danger to it, in the sense that it does not *annihilate* the national arena, but it gives new horizons to the idea of citizenship (Dobson, 2000: 51). More specifically, ecological citizenship *extends* its territory from the national state to the global arena. In fact, the ecological citizen *does not need* the social and political constraints of nation-state in order to act environmentally correctly. He or she acts with fairness just because this is 'the right thing to do', with no regard to national territory, which has been the principal constituent of the traditional forms of citizenship so far (Dobson, 2000: 51; 2005: 606). This is what gives to the ecological citizenship the huge potential to 'always already act on others' (Dobson, 2003: 115) and, implicitly, to be performed anywhere (Dobson, 2006: 448).

Furthermore, the lack of importance of nation-state in providing a territory to ecological citizenship besides the double focus on the local and global arena is comparable to the principle of local autonomy of deep ecology. The former introduces the distinction between 'the Earth' and 'the world' citizen, advancing the idea that 'the Earth citizen possesses a sense of local and global place, while world citizen make their deracinated way around an undifferentiated globe' (Dobson, 2000: 52). The latter refers to the need to reduce the hierarchical chains of decisions in order to boost local autonomy (Naess, 1973: 98). They are equivalent due to their aim to reinvigorate the importance of local arena for environmental protection, but they are different with regard to the methods of doing so: ecological citizenship mainly focuses on the role of citizen, while deep ecology considers the role of local-government as well as the role of the individual in protecting the environment.

As mentioned in the previous section, the criticism that the ecological citizenship has received is very much linked with its non-territorial character and, subsequently, its non-reference to the membership of a polity. Hayward's counter-argument is that without denoting a well-bordered form of polis and polity it remains unclear who is an ecological citizen (Hayward, 2006: 436). The response is that depending on *how* someone lives his or her everyday life describes whether he or she is or needs to be an ecological citizen. Dobson strengthens the role of justice in regulating the ecological debts and obligations and reinforces that ecological citizenship is mainly about practice and less about status (Dobson, 2006: 449).

To conclude this section, the non-bordered character of ecological citizenship resides in its focus on the free will of the individual and self-awareness, which is implied. In other words, the persona does no longer need to be directed by an external supra-entity and, implicitly, external frontiers, in order to live his or her life without harming others. The risk associated with the death of the nation-state, which could very easily be seen as a potential anarchy, might have two solutions that are already constitutive to ecological citizenship. The first is related to that self-awareness which extends the limits of the self and turns the attention towards the others, in private or in public sphere, at the local level or at the global one. The second is corresponding to the maternal character of ecological citizenship expressed throughout the virtues of care and compassion.

3.7 The horizontal relationships between citizens: the door to the community of ecological citizenship

Under the framework of ecological citizenship, the hierarchical relationships between citizens and state are not essential. The focus of ecological citizenship is rather on the generalized other, thus it requires giving more attention to the horizontal relationships between citizens themselves instead of emphasizing the primacy of the role of the state in configuring the realm of citizenship. Therefore, the Rousseauian conception of citizenship, which focuses on the social contract between citizens and state, is not valid for the ecological citizenship. Since the national or even supra-national territories and authorities constitute for the ecological citizenship only the *context*

in which it is practiced, the contractual relationships, mainly pyramidal, between the state and citizens are also seen as being secondary. Besides the traditional rights-responsibility balance, which might secure the welfare both of the individual and of the state, the discourse of ecological citizenship is primary orientated towards the others. Thus, it gives rise to the debate whether the community of ecological citizenship is a political community (Hayward, 2006: 436).

I have already highlighted that the community of ecological citizenship is one of justice. The reply from Dobson to Hayward's criticism recalls that the responsibilities that are in place and the relationships that are implied within the ecological space are seen as having a political character (Dobson, 2006: 447). Moreover, Dobson's general conception is that it is no longer necessary to attach citizenship to polities, thus the political community of ecological citizenship does not really need to be related to a polity (Dobson, 2006: 448). The debate is still on due to the very deeply rooted conceptions of citizenship based on national territory and the authority of the state apparatus in envisaging the practice of citizenship (Hayward, 2006b; Mason, 2009).

Still, it is worth mentioning that this feature of ecological citizenship regarding the vertical relationships between citizens themselves is complementary to the principle of diversity and symbiosis advanced by deep ecology. The focus on the vertical relationships with others is close to recognizing the importance of 'the ability to coexist and cooperate in complex relationships' (Naess, 1973: 96). Moreover, embodying these relationships with care and compassion is consonant with the idea of 'live and let live', which replaces the practices of exploiting, killing, and suppressing other species (ibidem). Thus, both principles, the one of ecological citizenship and the other of deep ecology, turn the attention to the quality of the relationships with the others, favouring the richness of various form of life.

3.8 Conclusion.

Ecological citizenship has the quality to provide an integrated approach to the practices of everyday life, in opposition with the traditional forms of citizenship that express fragmentation and separation. At a first sight, it seems that the ecological citizenship theory has been built by contrast and negation, but, in fact, it reunites areas that have been distinct so far, including spheres that have been kept away from the classical citizenship and reinvigorating habits and ways of life that are constituent parts of human condition.

The importance of this theory is that it coheres with the principles of deep ecology; its value resides in the fact that it calls for moderation and wisdom in keeping the traditional sites of citizenship as they are, while enlarging its horizons to what is also part of humans' life: care, compassion, justice, altruism, all performed with self-awareness in the private sphere as well as at the local level and the global one. Moreover, the discourse of ecological citizenship embraces the generalized other, conferring it a specific importance in the contemporary practices of citizenship. It constitutes a substantive framework for explaining individuals' commitment to protecting the environment due to its integrative character, which invites for valuing the human condition in all its aspects. Still, it has the merit to give a concrete response to the actual challenges to democracy and citizenship, by reconsidering the meanings of 'self' and 'polis'. Such a project has also the value of providing the ground for a sustainable society, a concern of many green thinkers in terms of the right balance between democracy and environmental policy (Barry, 1999; Smith, 2003, 2004; Dobson 2003; 2007). This is possible not only by its connections with the principles of deep ecology, as I showed before, but also due to the fact that it reinforces the free will of the individuals, which is usually required to maintain the democratic character of European societies, instead of adopting any authoritarian or compulsory measures for environmental protection.

Chapter 4: The methodology of explaining Europeans' commitment to protecting the environment.

This chapter has two main sections. In the first section I discuss data available for undertaking empirical analyses about public commitment to protecting the environment. I identify data sets that would allow a longitudinal approach to be adopted and I interrogate to what extent a cross-country empirical perspective can be employed, with a special focus on the European level. I show that a cross-country longitudinal analysis could be advanced. In the second section I introduce the analytical framework that I use to explain Europeans' commitment to protecting the environment. The focus is on detailing the outcome variable and its potential predictors. I briefly present the linkage between the seven theoretical dimensions of ecological citizenship and the proxy variables, as they are provided by the empirical data sets. I conclude by highlighting the contribution of this analysis to the field of environmental matters.

4.1. Measures of public commitment to protecting the environment in cross-country longitudinal surveys programmes.

Large-scale studies monitoring individuals' willingness to protect the environment commenced with the work of European Value Systems Study Group (EVSSG), established in 1978. Aiming to research public values and attitudes across the western societies (the member-states of the European Community, the USA and Canada), the project was launched in 1981. After a number of years, this project has been largely extended in many countries around the globe; depending on its European or global coverage, its name is now European Values Survey or World Values Survey. The survey has been conducted every ten years, currently totalling four waves: 1981-1984, 1990-1992, 1999-2001, and 2008-2012. Its longitudinal character has made possible the emergence of a considerable amount of knowledge regarding the changes that have occurred in the last decades in family life, work, politics, religion, national identity, and perceptions of life.

These kinds of cross-country survey programmes have been considerably developed in the last three decades. In addition to the European Values Survey, other projects such as the International Social Survey Programme, European Social Survey Programme, and European Commission Eurobarometers have been conducted. I will refer here only to those survey programmes that provide data on public environmental attitudes and/or behaviour.

European Values Study.

In 1981, the only environmental aspects investigated by the EVSSG were related to the membership of and volunteering in environmental/ecological/animal rights NGOs (EVS, 2011: 61-62). In 1990, these two items were not used; however six new indicators regarding 'environmental concern' and 'offering willingness' were introduced (Ester, Halman & Seuren, 1993). The degree of '**environmental concern**' was measured using a 4-point answer scale ('*strongly agree'*, '*agree'*, '*disagree'*, and '*strongly disagree'*) to the questions:

> "All the talk about pollution makes people too anxious",
> "If we want to combat unemployment in this country, we shall just have to accept environmental problems",
> "Protecting the environment and fighting pollution is less urgent than often suggested".

The **willingness to protecting the environment** was measured using a similar scale for the questions:

> "I would give part of my income if I were certain that the money would be used to prevent environmental pollution",
> "I would agree to an increase in taxes if the extra money is used to prevent environmental pollution",
> "The Government has to reduce environmental pollution but it should not cost me any money".

In 1999, the items regarding 'environmental concern' were not taken into account. Instead of this, other aspects expressing some principles of green theory were investigated, namely the opposition between economic development and environment and the one between human beings and nature:

> A. Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs
> B. Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent
>
> A. Human beings should master nature
> B. Human beings should coexist with nature

As a result, in 1999, the environmental matters were studied by using three dimensions: green values (the above two indicators), environmental attitudes (the individual effort/willingness for protecting the environment) and environmental behaviour (the extent of membership and

volunteering in environmental NGOs). The opportunity for longitudinal analyses was given only with regard to the set of three items measuring the individual efforts for protecting the environment (1990, 1999) and environmental NGOs membership/volunteering (1981, 1999).

In 2008, the items 'surviving' the selection of time and scientific interest were used in reference to the willingness to give a part of the income for protecting the environment (1990, 1999, 2008) and environmental NGOs membership/volunteering (1981, 1999, 2008). Also added to these items was a short version of what was called 'the new environmental paradigm scale' (Dunlap & van Liere, 1978/2008; Dunlap, 2008; Dunlap, Schmidt & Guerra, 2011):

> "We are approaching the limit of the number of people the earth can support."
> "When humans interfere with nature it often produces disastrous consequences."
> "Human ingenuity will ensure that the earth remains fit to live in."
> "The balance of nature is strong enough to cope with the impacts of modern industrial nations."
> "Humans were meant to rule over the rest of nature."
> "If things continue on their present course, we will soon experience a major ecological catastrophe."

To conclude this section, the research on individuals' willingness to protect the environment, employed using the EVS data, can be related to the willingness to give a part of the income for protecting the environment and/or environmental NGOs membership/volunteering. A cross-country longitudinal analysis of Europeans' commitment to contribute with part of their income to protecting the environment might include the following countries: the UK, Germany, France, Italy, Netherlands, Ireland, Austria, Belgium, Spain, Portugal, then Denmark, Finland, Iceland, Sweden and, coming from the Post-Communist bloc, Hungary, Poland, Bulgaria, Czech Republic, Slovak Republic, Lithuania, Slovenia, and Estonia.

The International Social Survey Programme.

Another data source that might offer an insight into people's commitment to protecting the environment is the one provided by the International Social Survey Programme (ISSP). Within this project, a module related to environment was introduced in 1993, and then repeated in 2000 and

2010. Having good longitudinal coverage (almost 20 years), it also allows for multiple comparisons between countries, both at the European and the global level.

A very strong feature of this survey data is its direct referencing to environmental protection both at the societal and individual level. The environment seems to be almost always put in opposition with people's freedom and economic welfare, requiring efforts or cuts in their standard of living for maintaining the environment in a good state. There are questions related to whether or not the government should regulate ordinary people's daily actions or businesses' ethics in order to protect the environment, and items showing the place that the environment might have in the hierarchy of humans' concerns when it is contrasted with economic wellbeing ["*How willing would you be to pay much higher prices in order to protect the environment*"]. The role of science in helping for finding solutions to environmental issues is considered, together with the questions constituting the post-materialism index. Then, a number of items investigate people's perceptions regarding the risk of pollution or the one of using pesticides and chemicals in farming. People's attitudes and behaviour for protecting the environment are investigated at three levels. Firstly, there are attitudinal statements regarding the power that regular people might have in doing much about the environment. Secondly, two questions related to the frequency of some environmental behaviour: recycling of paper, plastic, tins or glasses and cutting down on driving a car for environmental reasons. Thirdly, environmental activism is investigated by questions regarding environmental NGOs membership, signing a petition about an environmental issue, donating money to an environmental group and taking part in a protest about an environmental problem (Table A.2.1., Appendix 2).

With regard to the countries that participated in all three survey waves, only eight are European, namely Germany, United Kingdom, Norway, Spain, Bulgaria, Czech Republic, Slovenia, and Russia. Six countries from other continents are included into the survey programme: Canada, USA, New Zeeland, Japan, Philippines, and Israel. Hence, the limit of an eventual analysis based on this database is related to the low number of European countries participating into this survey

programme, but the value of it might be given by a prospective comparison between Europeans and people from other continents with regard to environmental commitment.

The European Commission's Eurobarometer Surveys.

The third international survey programme that has been screened is the one conducted under the auspices of European Commission, including all the EU member countries of that time (15 in 1990s, 25 in 2004, and 27 in 2007). There is a huge number of Standard and Flash Eurobarometers carried out over more than three decades, many of them having included questions regarding environment or, more specifically, climate change. The most critical issue here is the inconsistency in time of many of the questions related to environmental attitudes, opinions or behaviour. Such an attribute limits any longitudinal analysis that could be conducted.

Three intervals can be taken into consideration: 1995-1999, 2002-2004, and 2008-2009 (Table A.2.2, Appendix 2). The first interval is given by two Eurobarometer surveys, EB 43.1 and EB 51.1, and mainly relates to environmental concerns. For example, there are questions referring to what extent pollution is an urgent issue or about the magnitude of some environmental problems such as the disappearance of plants, animals, tropical forest; pollution, urban traffic, the destruction of the ozone layer, and global warming; nuclear power stations, radioactive waste processing and the use of genetically modified organisms in food products. Then, the environmental concern is contextualized at local and national level. Another set of questions is related to the effectiveness of public bodies to protect the environment at local, regional, national, European and global level.

The second interval is given by the EB 58.0 and EB 62.1. It is mainly investigated how the "Environment" is seen, what sources of information about environment people have, which public bodies do they trust most concerning the environment, which level might be the most effective for taking decisions regarding environmental protection, and what kind of decisions might work well in solving environmental issues.

The third interval is constituted by the EB 69.2 and EB 71.1. Here the most urgent environmental problem, climate change, is contrasted with other global social issues, such us terrorism, armed conflicts, nuclear weapons, poverty, the spread of infectious diseases, the increasing world population, the global economic downturn. There are also questions about how much various actors (public authorities, corporations, citizens themselves) are doing to fight climate change or what kind of personal actions people have taken in order to help in reducing climate change and global warming. Another question that might be of interest is the one investigating the degree of willingness for paying more for energy produced from clean sources, accompanied by a question about how serious the issue of climate change is seen by the public.

The three databases introduced here might give different angles on how the environment is seen not only by people who were interviewed about, but also by the social scientists involved in these international survey programmes. The results or conclusions that may be achieved by using one or another are also depending on the statistical methods that could be employed. For example, when using the EVS database, the outcome variable is given by the statement "*I would give part of my income if I were certain that the money would be used to prevent environmental pollution*", measured using the ordinal scale "strongly agree", "agree", "disagree", "strongly disagree". Therefore, it will require the corresponding rules for such a distribution. Although the individuals' commitment to protecting the environment is measured only by one item, namely people's willingness to make financial sacrifices for the environment, the advantage of using this dataset in my research is the one that a large number of European countries might be included into the analysis. Moreover the EVS is the only survey programme incorporating variables that can be considered proxies of the principles of ecological citizenship.

The ISSP allows flexibility in choosing the dependent variable and how to work with it – there is a set of three questions referring to the willingness for doing certain sacrifices in order to protect the environment: "*How willing would you be to pay much higher prices in order to protect the environment*"; "*How willing would you be to pay much higher taxes in order to protect the environment*"; and "*How willing would you be to accept cuts in your standard of living in order to*

protect the environment". Such set of questions might be transformed into a singular continuous variable, and this would permit various statistical approaches, from those working with mean (generalized linear models) to those working with median (quantile regression). Both databases have the huge advantage of allowing for longitudinal analyses in a cross-country perspective. It would not leave open the opportunity to get conclusions regarding individual changes over time, as panel data might give, but the results still might be considered highly valuable in terms of getting knowledge regarding people's environmental commitment. In contrast, the Eurobarometers may only give a quick look into some Europeans' environmental concerns as they are expressed at various time intervals. Still, the advantage is the one of having an in-depth cross-country analysis into people's commitment to protecting the environment.

In conclusion, the interest to collect empirical data on public environmental values, attitudes, and behaviours allowing for cross-country comparative and longitudinal analyses has not been of great importance for the teams conducting the three cross-country survey programmes described in this chapter. Given the inconsistencies that I highlighted here, the environment seems to constitute a secondary topic, characterized by peaks and troughs, depending on short-term decisions rather than long-term well-defined research strategies.

To such an irregularity in collecting data on public environmental concern another issue should be considered, namely the design of the questionnaire of each survey, which will give the information related to larger societal context of Europeans' environmental commitment. I refer here to the set of questions included into the questionnaire that might offer potential sources of explaining public environmental commitment not only in terms of demographic characteristics but also that are related to the socio-cultural and political features of the individuals. In this regard, the ISSP module focused on the environment has a good coverage on public environmental attitudes, for the period 1990-2009, but an extremely low reference to the rest of the aspects that are part of people's life. The European Commission's Eurobarometers data might give some information on the context in which the environmental commitment occurs, but it lacks

in delivering longitudinal data consistent in time. Besides, the EVS data has a huge potential for providing a deep insight of the values and attitudes that might be associated with the concern with the environment. Moreover, as will show in the next chapter, the EVS data gives a substantive opportunity for setting up an analytical framework based on the theory of ecological citizenship.

Therefore, to use of EVS appears to the best choice for empirically explaining Europeans' commitment to protecting the environment. This decision has two arguments. Firstly, this is the only data set allowing for building explicative models based on the principles of ecological citizenship theory. Secondly, a large number of countries might be included into the analysis. This can provide in-depth findings related to the value of ecological citizenship in explaining individuals' willingness to protect the environment and also can offer a comprehensive view on the country-level predictors of public environmental commitment. The analytical framework based on ecological citizenship will be presented in the next section, while complex models that include individual- and country-level variables will be developed in Chapters 6 and 7.

4.2. The analytical framework for explaining Europeans' commitment to protecting the environment

As was shown in the previous section, Europeans' willingness to protect the environment has been mainly measured as a disposition of the individuals to make financial sacrifices for the environment, both in the EVS and ISSP. The European Commission's Eurobarometer surveys refer to this topic in a more detailed way, but do not allow for a longitudinal approach. Thus, in order to produce a cross-country longitudinal analysis of Europeans' commitment to protecting the environment, the EVS and ISSP data sets are the most desirable choices. Since the EVS provides a broader picture of the variation between European countries, the decision to make use of this data in the first instance has resulted as the best alternative.

The outcome variable: Europeans' willingness to give part of their income for environmental protection.

Therefore, the commitment to making financial sacrifices to protect the environment will be considered as the outcome variable in the empirical analysis that follows. The variable was measured using an ordinal scale. To the statement "I would give part of my income if I were certain that the money would be used to prevent environmental pollution" the interviewees had four response choices: 1='*strongly agree'*, 2='*agree'*, 3='*disagree'*, and 4='*strongly disagree'*. Such an ordinal approach demands special attention when adopting a statistical method or another. Although an ordinal distribution allows for building explicative models using various forms of logit regression (eg. ordinal or multinomial regression), it might be difficult, but not impossible, to adopt other approaches such as structural equation modelling or event history analysis, if the purpose of the analysis requires the use of these methods. This aspect will be developed in Chapters 6 and 7. The next section will introduce the potential predictors of public commitment to making financial sacrifices for environmental protection.

Proxies of ecological citizenship as individual-level predictors of Europeans' willingness to give part of their income to protect the environment.

As could be seen in Chapter 3, ecological citizenship has a very complex character, able to bridge the new facets of our times, when the idea of nation-state and of citizenship are undermined. Thus, it has the potential to explain individuals' willingness to make financial sacrifices for environmental protection, due to its two-fold distinctive nature: its concomitant focus on environment and citizenship. Such an attribute is essential for the contemporary liberal democracies that are challenged to balance between *imposing* various pro-environmental behaviours through environmental taxation and other legal regulations (Smith, 2004: 140-144) and *promoting* long-term sustainable environmental strategies in which 'environmentally enlightened forms of citizenship' may emerge as solutions to complex environmental issues (Smith, 2003:76). Moreover, this 'environmentally enlightened citizenship' might complement

Naess' idea of *ecosophy*, introduced in Chapter 2, ecosophy that goes beyond the 'limited science' in shaping environmental strategies:

> "A philosophy as a kind of *sofia* wisdom, is openly normative, it contains *both* norms, rules, postulates, value priorities announcements, and hypothesis concerning the state of affairs in our universe. Wisdom is policy wisdom, prescription, not only scientific description and prediction." (Naess, 1973: 99)

The value of ecological citizenship in explaining people's commitment to making financial sacrifices for environmental protection resides firstly in its capability to show the new condition of humanity, which is self-reliant and future-oriented, but in a way that allows for giving special attention to the wellbeing of the others. Secondly, ecological citizenship theory might constitute a good framework for understanding public support for environmental protection because it highlights the new forms of communitarianism, a communitarianism that gives importance to national realms, but goes beyond them, that recognizes the significance of hierarchical relationships between state and citizens, but also focus on the horizontal relationships between citizens. In this regard, ecological citizenship offers a substantive theoretical framework for researching public commitment to protecting the environment, which can be transposed in a set of individual-level predictors of Europeans' commitment to protecting the environment. The next chapters will analyse whether the principles of ecological citizenship explain a significant part of the variation of Europeans' willingness to give part of their income to protect the environment. Before this, a brief description of the proxy variables of the ecological citizenship principles is beneficial. These proxy variables do not specifically refer to the environment, as ecological citizenship does, but their potential to capture the general meaning of the principles of this form of citizenship are still of importance.

The principal virtue of ecological citizenship, justice, has a good correspondent in a question measuring the preference for equality versus freedom. The interviewees are asked to choose

between the following options to the question: “Which of these two statements comes closest to your opinion?”

A. I find that both freedom and equality are important. But if I were to make up my mind for/to choose one or the other, I would consider personal freedom more important, that is, everyone can live in freedom and develop without hindrance.

B. Certainly both freedom and equality are important. But if I were to make up my mind for/to choose one of the two, I would consider equality more important, that is, that nobody is underprivileged and that social class differences are not so strong.

Pro-environmental behaviours carried out in household is not studied in the EVS, which reduces the possibility of analysing the way ecological citizenship is expressed in private sphere. However, two questions in the EVS may give an insight about how the individual relates to his/her entire life. The first measures the individual’s perceived degree of control over their life. The question is formulated as follows:

> Some people feel they have completely free choice and control over their lives, and other people feel that they do has no real effect on what happens to them. Please use the scale to indicate how much freedom of choice and control you feel you have over the way your life turns out? (1=none at all; to 10=a great deal).

The second one refers to the individual’s responsibility for their lives versus the state’s responsibility for providing for people. It is worded as follows:

> On this card you see a number of opposite views on various issues. How would you place your views on this scale?
>
> 1= Individuals should take more responsibility for providing for themselves.
>
> 10= The state should take more responsibility to ensure that everyone is provided for.

The non-reciprocal responsibility that characterizes ecological citizenship has a good proxy in the EVS questions related to volunteering. There are about thirteen items related to volunteering in various kinds of NGOs from those promoting human rights to those acting for people in need. The feature of care and compassion, which is the second most important virtue of ecological citizenship, can be matched by considering people’s attitude towards people in need, as has been measured in the EVS. The interviewees are asked the following question: “Why are there people in this country who live in need? Here are four possible reasons. Which one reason do you consider to be the most important?”, with the response categories 1=because they are unlucky;

2=because of laziness and lack of willpower; 3=because of injustice in our society; 4=it's an inevitable part of modern progress; 5=none of these.

The non-bordered character of ecological citizenship is feature that can be introduces into the analysis due to the existence in EVS of two questions related to the sense of belonging. They measure the spatial identity using the following statement: "Which of these geographical groups would you say you belong to first of all? Second?", with response categories 1=locality or town where you live; 2=region or country where you live; 3=country as a whole; 4=Europe; 5=the world as a whole.

The focus on the horizontal relationships between citizens, which is another specific attribute of ecological citizenship, is very well captured in EVS by the question related to societal trust. In this case, the statement is formulated as follows:

> "Generally speaking, would you say the most people can be trusted or that you can't be too careful in dealing with people?"
>
> 1=most people can be trusted
>
> 2=cannot be trusted

Table 1 summarizes the analytical framework described before. A detailed version of it is given in Table A.1.1., Appendix 1, including the key dimensions of ecological citizenship and the proxy variables for each of them.

Table 1: The analytical framework for explaining the Europeans' willingness to give part of their income for protecting the environment.

The theory of ecological citizenship	*The Available Empirical data in EVS data set*
An implicit Self-awareness	
An active ecological citizenship in private sphere	*Individuals versus State*
No borders Private-Public and Passive-Active	*Control over life*
Justice as the first virtue of ecological citizenship	*Equality versus Freedom*
Care and compassion as secondary virtues, helping in realizing justice	*Attitudes towards people in need*
Non-reciprocal responsibility to act with care and compassion towards distant strangers, human and non-human, both in time and space	*Volunteering*
Horizontal relationships between citizens	*Societal Trust*
The sense of local and global place	*Sense of Belonging*

**This table is based on the following publications: Dobson, 2000; and Naess, 1973.*

** A preliminary version of this framework was formulated in my MSc Dissertation, in 2012*

The value of the analytical framework adopted.

The novelty of this analytical framework is that it engages the theoretical corpus of knowledge advanced by green thought into the empirical enquiry of the environmental commitment of citizens. It contributes to the field of environmental matters due to its advocacy of a unified approach between deep ecology, which is broadly normative, and ecological citizenship, which has a normative character as well, but is deeply oriented towards *praxis*. Furthermore, the opportunity of demonstrating whether these principles are already in place in various European countries might change the way the green thought is seen and valued. I refer here especially to the importance given to the principles of green ideology in environmental governance, for example when the environmental strategies are set up or when certain environmental issues are mitigated. Therefore, including such an analytical framework in a cross-country longitudinal perspective gives a dynamic understanding of Europeans' commitment to protecting the environment. This analytical framework is in line with both Dobson and Naess' normative green principles about how humans should live their lives. When Dobson articulated his theory on ecological citizenship, he not only considered that 'citizenships are not created ex nihilo, [but] they are rooted in particular times, places and experiences" (Dobson, 2000:57), but he also gave a global character to such a form of citizenship, due to its borderless nature. Naess also framed the principles of deep ecology as being desirable for any human that will ever live on Earth. In this regard, a cross-country longitudinal approach may give substantive understanding about Europeans' commitment to protecting the environment. The analyses presented in Chapters 6 and 7 will be based on this analytical framework. In Chapter 5 the relationships between each explicative variable and the outcome variable will be explored.

Chapter 5: Europeans' commitment to protecting the environment - the descriptive analysis

This chapter describes the variation of Europeans' willingness to give part of their income for environmental protection as it has been measured through the European Values Study over the years 1990-2009. It explores whether or not a cross-country and longitudinal approach is appropriate by looking at the differences between and within European countries over the last two decades. It then examines the value of introducing into the analysis the proxy variables related to ecological citizenship theory. The chapter is set to be the base for any complex analyses that will be employed in this research.

5.1. The population under study and sampling procedures.

The sampling design for all EVS waves followed a multi-stage procedure – clustered in the first stage and probabilistic in the second one. The clusters have been related to the structure of population by region and the proportion rural/urban (GESIS, 2011). Details regarding the size of the samples that have been used in each country and each wave are given in Table A.1.2., Appendix 1.

The steps undertaken to determine the population under study have been related to whether or not a country has participated in all three waves, if the sample is robust, and if the variables of interest are available. Firstly, a number of countries joined the programme only in the 2008 wave of the EVS, which makes impossible the intention of including them into analysis; these countries are Albania, Azerbaijan, Armenia, Bosnia-Herzegovina, Northern Cyprus, Georgia, Moldova, Montenegro, Serbia, and Kosovo. Some other countries have also not participated in all the waves: Belarus, Croatia, Greece, Luxembourg, Russia, Turkey and Ukraine (Table A.1.2., Appendix 1). Then, for the issue of very small samples for countries such as Malta, Northern Ireland, and Finland a decision has had to be made, resulting in merging Northern Ireland with the rest of the UK, keeping Finland, in a first instance, and removing Malta from the analysis.

The next step was to screen the EVS dataset for the variables of interest. With regard to the main variables, in the 1990 wave, people's preferences regarding freedom versus equality were not surveyed in Lithuania, while environmental attitudes were not measured in Romania. In the case

of East Germany, there was no question related to sense of belonging in the 1990 wave. Therefore the population under study consists of 66 nationally representative samples of people, which pooled from three EVS survey waves, undertaken in 22 European countries. These countries are: the UK, West Germany, France, Italy, Netherlands, Ireland, Austria, Belgium, Spain, Portugal, Denmark, Finland, Iceland, Bulgaria, Czech Republic, Lithuania, Poland, Slovenia, Estonia, Hungary, Slovak Republic, and Sweden (Tables A.1.3. and A.1.4, Appendix 1).

A few words regarding the weighting factors: the teams coordinating the survey at the national level did not provide weights in all waves for adjusting the samples according with the population of reference, as given by gender, age category, and, in the case of Germany, regions. Those cases missing weights are Czech Republic, Finland, France, Ireland, Poland, and Northern Ireland in 1990; Denmark, Iceland, and Lithuania in 1990 and 2000; Italy, Slovenia, and Spain in 2000.

These irregularities make difficult the decision related to whether or not the weighting factors should be used in the analysis. While the decision to not introduce the weighting factors might increase the effect of sampling errors on any inferences related to the population of reference, the one to use these weights, particularly when the aim is to get conclusions regarding the Europeans as a whole, is quite difficult due to the low number of countries for which the weighting factors are available. In other words, a country-by-country analysis may allow for using these adjustments, when possible, but a cross-country analysis cannot include the weighting factors as long as not *all* countries provided these measures. In the first instance, the weights won't be used. Thus, the following descriptive analysis is done without reference to any re-adjustments given by weights.

5.2. Europeans' commitment to protecting the environment by time and country.

For the period 1990-2009, the proportion of people from various European countries who expressed the disposition to give part of their income to protect the environment is at about 58%. In contrast, 36% would not agree with the idea of making financial sacrifices for environmental

protection, while 6% do not have a clear opinion in this regard (see Table 2). A detailed picture of the trends over time looks a bit different, but still very optimistic for pro-environmentalism. The share of people strongly disagreeing to make individual sacrifices for the environment has increased by time with 6%, as well as of those only disagreeing (with 9%). On the other side, the proportion of people strongly agreeing to contribute with part of their income for the environment has decreased by 11%. Despite this, the percentage of moderate pro-environmentalists has remained unchanged over the last two decades – 49% to 45% (Table 3). Furthermore, the statistical tests show that the change in people's commitment to making financial sacrifices for the environment might be significant – the values of association are 0.14 (Kendall's Tau-c) and 0.16 (Contingency Coefficient).

Table 2. Europeans' willingness to give part of their income to protect the environment, 1990-2009

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
	Strongly agree	*12593*	*14.1*	*15.1*	*15.1*
	Agree	*38904*	*43.7*	*46.7*	*61.8*
	Disagree	*21486*	*24.1*	*25.8*	*87.6*
	Strongly disagree	*10374*	*11.7*	*12.4*	*100.0*
	Total	***83357***	***93.6***	***100.0***	
Missing	*No answer*	*740*	*.8*		
	Don't know	*4945*	*5.6*		
	Total	***5685***	***6.4***		
Total		*89042*	*100.0*		

Note: 22 European countries are included in the analysis.

Table 3. Europeans' willingness to give part of their income to protect the environment by time*.

			Giving part of the income for environmental protection				*Total*
			Strongly agree	*Agree*	*Disagree*	*Strongly disagree*	
EVS Waves	*1990-1993*		*6093*	*13807*	*5829*	*2395*	*28124*
			21.7%	*49.1%*	*20.7%*	*8.5%*	*100.0%*
	1999-2001		*3370*	*12086*	*7269*	*3633*	*26358*
			12.8%	*45.9%*	*27.6%*	*13.8%*	*100.0%*
	2008-2009		*3130*	*13011*	*8388*	*4346*	*28875*
			10.8%	*45.1%*	*29.0%*	*15.1%*	*100.0%*
Total			*12593*	*38904*	*21486*	*10374*	*83357*
			15.1%	*46.7%*	*25.8%*	*12.4%*	*100.0%*

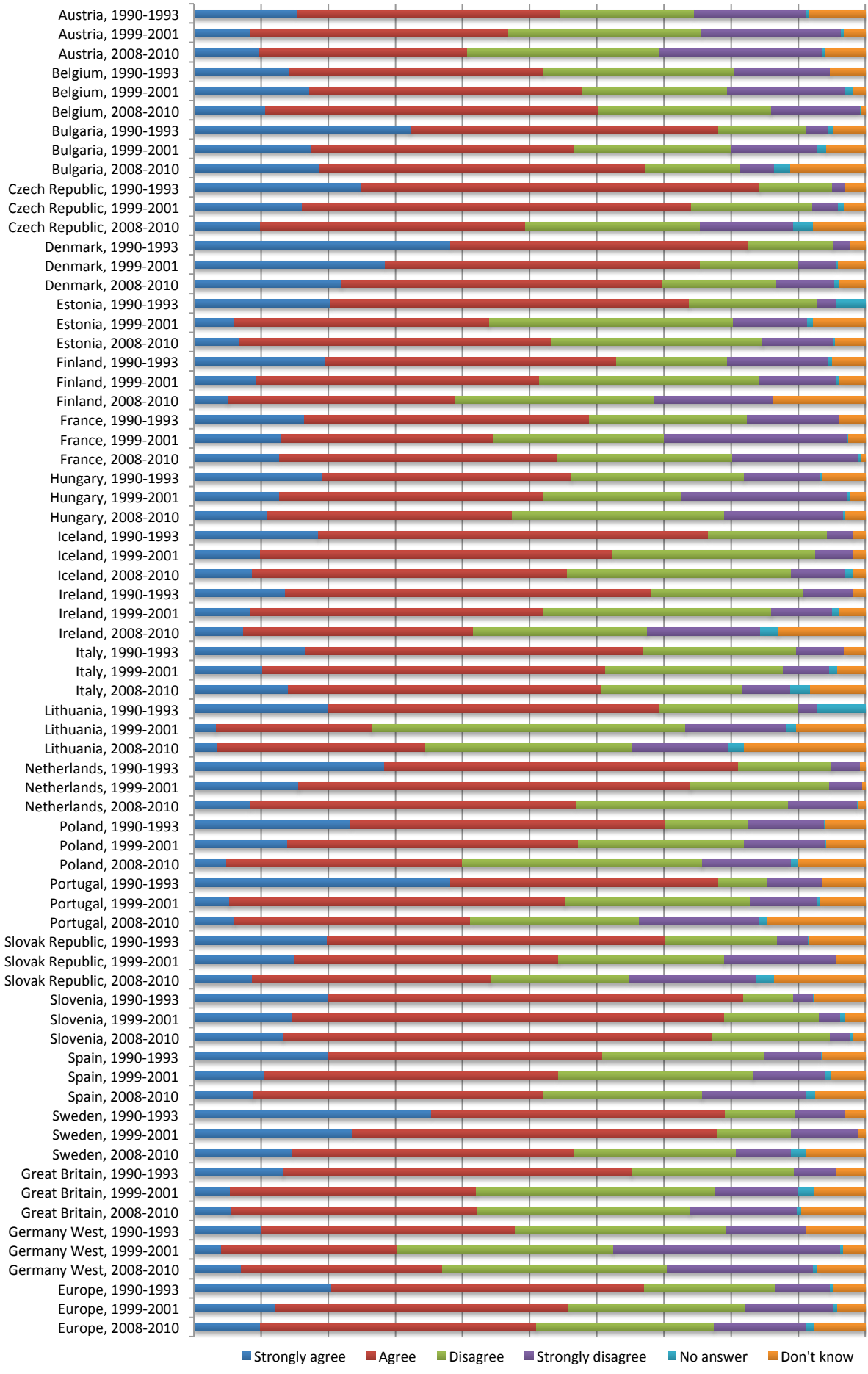
**Kendall's tau-c=0.13 (p=0.000); Contingency Coefficient=0.16 (p=0.000)*

For the years 1990-2009, more than 70% of people from Slovenia, Denmark, Sweden and Czech Republic declared they agree with the idea of giving part of their income for environmental protection. Yet, more than 60% of people from Netherland, Bulgaria, Iceland and Italy expressed their commitment to protecting the environment. In two European countries the proportion of people sharing a strong support for environmental protection was more than 20%: Denmark (29%) and Sweden (24%). The following countries had a majority of moderate supporters for the environmental protection: Slovenia (63%), Czech Republic (53%), Iceland (52%), and Italy (50%). On the other side, one third of people from Austria, France and West Germany showed a strong opposition to this idea. In Lithuania, the UK and West Germany another third were moderate against this idea.

These differences do not seem to have a particular pattern. Not only Nordic countries, known as having a good tradition in environmental protection, have a large majority of people supporting the idea of caring about the environment, but also ex-communist countries, where little is expected from the individuals due to the traces of autocratic regimes. Moreover, the UK and West Germany are countries that take an active role in promoting international consensus in environmental agreements. The fact that their citizens are less willing than people from other European countries to make individual financial sacrifices raises the need to better understand the linkages between environmental governance and public support for environmental policy.

A complete picture of this preliminary country-by-country analysis would require more attention given to the variation over time *within* countries in people's willingness to protect the environment. Figure 1 shows these trends and Table A.3.1, in Appendix 3, details the situation of each country. The general trend is a decrease in the European public's commitment to giving up part of their income for environmental protection. Belgium is the only country in which people are more interested in 2008 than in 1990 in protecting the environment.

Figure 2. Between- and within- country variations in Europeans' commitment to protecting the environment 1990-2009



In a number of countries not only the proportion of people sharing a strong support for environmental protection has decreased by time, but also of those expressing a moderate support: the Czech Republic, Estonia, Lithuania, Poland, Slovak Republic, Finland, Ireland, the UK and West Germany. In Bulgaria, Hungary, Slovenia, Portugal, Spain, Netherlands, Denmark, and Sweden the declining trend could be found only with regard the category of those who declared a strong support for environmental protection, whereas the proportion of people sharing a moderate commitment to protecting the environment has been stable over time. These countries might be seen as having a key role in maintaining the European support for environmental protection at a level higher than 50%. Still, the top countries in which a large majority of people showed a constant willingness to make financial sacrifices for environmental protection are Slovenia, Denmark, Sweden, Netherlands, Iceland, Spain, and Bulgaria. Again, the only pattern that can be noticed is related to the consistency of Nordic countries in caring about the environment. Table 5 gives more detail regarding this.

Table 4. The proportion of people 'strongly agreeing' and 'agreeing' with the idea of giving part of their income for environmental protection – variation over time.

Survey wave 1990-1993		**Survey wave 1999-2001**		**Survey wave 2008-2009**	
Czech Republic	84%	**Slovenia**	79%	**Slovenia**	77%
Denmark	83%	**Sweden**	78%	**Denmark**	70%
Slovenia	82%	**Denmark**	75%	**Bulgaria**	67%
Netherlands	81%	Czech Republic	74%	**Italy**	61%
Sweden	79%	**Netherlands**	74%	Belgium	60%
Bulgaria	78%	**Iceland**	62%	**Netherlands**	57%
Portugal	78%	**Italy**	61%	**Sweden**	57%
Iceland	77%	Belgium	58%	**Iceland**	56%
Estonia	74%	**Bulgaria**	57%	France	54%
Poland	70%	Poland	57%	Estonia	53%
Slovak Republic	70%	Portugal	55%	**Spain**	52%
Lithuania	69%	Slovak Republic	54%	Czech Republic	49%
Ireland	68%	**Spain**	54%	Hungary	47%
Italy	67%	Finland	52%	Slovak Republic	44%
Great Britain	65%	Hungary	52%	Ireland	42%
Finland	63%	Ireland	52%	Great Britain	42%
Spain	61%	Austria	47%	Austria	41%
France	59%	France	45%	Portugal	41%
Hungary	56%	Estonia	44%	Poland	40%
Austria	55%	Great Britain	42%	Finland	39%
Belgium	52%	Germany West	30%	Germany West	37%
Germany West	48%	Lithuania	27%	Lithuania	35%

To conclude this section, the variability that exists both between and within European countries in public commitment to protecting the environment seems to be an aspect requiring detailed

attention. Subsequent analyses will account for this variation given by time and country. The enthusiasm shared in 1990s for making individual sacrifices for environmental protection has decreased during the last two decades. Still, in 11 of 22 countries that have been included in this descriptive analysis, the percentage of those committed to environmental protection is higher than of those expressing lack of commitment on this matter in any of the three waves of the EVS. As has been noted, one of the patterns identified relates to the well-known willingness of people from Nordic countries to protect the environment. Also, in many of ex-communist countries the initial strong commitment of the public to making individual sacrifices for the environment has dropped gradually. Whether this is due the economic transition or to the redefinition of democratic culture is an issue that will be explored at a later stage of this research, when country-level variables related to national wealth, quality of democracy, and environmental governance will be introduced. Another pattern is the incongruence between the low wiilingness of people from the UK and Germany (West) for giving part of their income for environmental protection and the active role of their countries in international and national environmental politics is another matter that requires a particular attention in future analyses. For now, it is worth mentioning that these differences confirm the benefit of adopting a cross-country and longitudinal approach. Furthermore, the fact that the descriptive analysis highlighted three potential clusters of countries – Nordic countries, the new-democracies and the two leaders in international environmental politics, namely the UK and Germany – provide a strong argument for the analytical framework designed for the integrative analysis, as I described it in the introduction. Before then, the next section considers the relationship between the outcome variable and the explicative variables that have been chosen as proxies of the features of ecological citizenship.

5.3. The empirical distribution of each individual-level predictor of Europeans' willingness to give part of their income for environmental protection.

The variable related to people's preferences for equality versus freedom is taken as the proxy for one of the most important features of ecological citizenship, namely the virtue of justice. Its association with the outcome variable has been explored by considering their direct relationship and also by accounting for the variation in time and/or between countries. At the European level,

for the period between 1990 and 2009, only 38% of Europeans considered equality more important than freedom, while 50% valued freedom as more important than equality. 6% opted for the response category 'neither' and another 6% are Don't Know responses (see Table 5).

Table 5. Europeans' preferences for Freedom or Equality, 1990-2009.

	Frequency	*Valid Percent*	*Cumulative Percent*
No answer	*750*	*.8*	*.8*
Don't know	*4933*	*5.5*	*6.4*
Freedom above equality	*44799*	*50.3*	*56.7*
Equality above freedom	*33581*	*37.7*	*94.4*
Neither	*4979*	*5.6*	*100.0*
Total	*89042*	*100.0*	

As it is shown in Table 6, the proportion of people who prioritize Freedom and agree with the idea of giving part of their income for environmental protection is the same as the proportion of people who value equality and agree to make financial sacrifices for the environment. This is also valid when a cross-country comparison is done – only in Austria, Czech Republic, Iceland, Lithuania, Netherlands, and Slovak Republic the differences appear to be significant, the Kendall's tau-c coefficient is significant at the 95 per cent confidence level (p-value < 0.05) –Tables A.3.3 and A.3.4 in Appendix 3. However the variable 'Equality versus Freedom' will be kept for more complex explicative analyses, due to its importance in the analytical framework.

Table 6. The variation of Europeans' willingness to give part of their income for environmental protection given by their preferences for Freedom/Equality, 1990-2009.

	Giving part of the income for environmental protection						*Total*
	No answer	*Don't know*	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*	
No answer	*12.8%*	*10.3%*	*9.6%*	*33.6%*	*21.6%*	*12.1%*	*100%*
Don't know	*1.6%*	*18.3%*	*8.0%*	*30.9%*	*26.3%*	*15.0%*	*100%*
Freedom above equality	*0.7%*	*4.3%*	*14.4%*	*44.6%*	*24.4%*	*11.5%*	*100%*
Equality above freedom	*0.6%*	*4.7%*	*15.0%*	*45.6%*	*23.1%*	*10.9%*	*100%*
Neither	*1.2%*	*9.1%*	*12.2%*	*36.9%*	*26.4%*	*14.3%*	*100%*
Total	*0.8%*	*5.6%*	*14.1%*	*43.7%*	*24.1%*	*11.7%*	*100%*

*****Kendall's tau-c = -0.001, p=0.560

The next two variables of interest are related to the area of private life. As shown in Chapter 4, information about how the individuals relates to their private sphere might be given by the survey measure related to the control people have over life and the opinion regarding whether the individuals has the responsibility for providing for themselves or the state holds the responsibility

for securing a minimum standard of life for everyone. Both variables are measured using a 10-point scale. This enables these to be considered as 'continuous' variables, but also permits recoding of the response categories if necessary. Table 7a and Table 8a show the potential relationship between these proxy variables and the outcome variable.

Table 7a. The variation of Europeans' willingness to give part of their income for environmental protection given by their opinion regarding the role of individuals versus state for a good quality of life, 1990-2009.

	Giving part of the income for environmental protection						*Total*
	No answer	*Don't know*	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*	
No answer	*13.4%*	*12.1%*	*10.9%*	*31.7%*	*21.2%*	*10.8%*	*100%*
Don't know	*1.8%*	*22.0%*	*8.9%*	*29.2%*	*23.8%*	*14.3%*	*100%*
Individual responsibility	*0.6%*	*5.1%*	*17.6%*	*38.9%*	*22.2%*	*15.5%*	*100%*
2	*0.7%*	*4.8%*	*13.8%*	*43.8%*	*24.8%*	*12.1%*	*100%*
3	*0.5%*	*5.2%*	*13.3%*	*45.5%*	*25.2%*	*10.3%*	*100%*
4	*0.5%*	*5.2%*	*12.5%*	*47.0%*	*24.8%*	*10.0%*	*100%*
5	*0.9%*	*5.6%*	*14.3%*	*44.7%*	*24.2%*	*10.4%*	*100%*
6	*1.1%*	*4.6%*	*13.1%*	*47.5%*	*23.9%*	*9.7%*	*100%*
7	*0.7%*	*5.3%*	*12.6%*	*45.8%*	*25.3%*	*10.3%*	*100%*
8	*0.8%*	*5.0%*	*13.9%*	*44.6%*	*24.8%*	*10.9%*	*100%*
9	*0.7%*	*5.3%*	*14.0%*	*43.0%*	*24.0%*	*13.1%*	*100%*
State responsibility	*0.9%*	*5.2%*	*17.3%*	*38.9%*	*22.1%*	*15.7%*	*100%*
Total	*0.8%*	*5.6%*	*14.1%*	*43.7%*	*24.1%*	*11.7%*	*100.0%*

Table 8a. The variation of Europeans' willingness to give part of their income for environmental protection given by their opinion regarding how much control over their life they have, 1990-2009.

	Giving part of the income for environmental protection						*Total*
	No answer	*Don't know*	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*	
No answer	*12.9%*	*12.0%*	*10.3%*	*32.1%*	*19.8%*	*12.9%*	*100%*
Don't know	*2.1%*	*23.7%*	*8.2%*	*27.7%*	*24.2%*	*14.2%*	*100%*
No control over life	*1.8%*	*6.6%*	*16.4%*	*33.2%*	*23.7%*	*18.4%*	*100%*
2	*0.8%*	*6.7%*	*10.8%*	*35.4%*	*27.8%*	*18.6%*	*100%*
3	*1.3%*	*5.7%*	*12.4%*	*39.9%*	*25.9%*	*14.8%*	*100%*
4	*0.6%*	*6.1%*	*12.6%*	*40.8%*	*26.0%*	*13.9%*	*100%*
5	*0.8%*	*5.9%*	*14.2%*	*42.9%*	*23.9%*	*12.3%*	*100%*
6	*0.7%*	*5.5%*	*13.1%*	*44.3%*	*25.6%*	*10.9%*	*100%*
7	*0.7%*	*4.8%*	*13.3%*	*47.0%*	*24.5%*	*9.6%*	*100%*
8	*0.7%*	*4.7%*	*14.1%*	*47.4%*	*23.8%*	*9.2%*	*100%*
9	*0.7%*	*4.8%*	*14.4%*	*45.6%*	*23.2%*	*11.3%*	*100%*
Control over life	*0.7%*	*4.6%*	*18.7%*	*39.7%*	*21.8%*	*14.5%*	*100%*
Total	*0.8%*	*5.6%*	*14.1%*	*43.7%*	*24.1%*	*11.7%*	*100%*

Kendall's tau-c coefficients for the relationships investigated in table 8a and 9a are significant, but extremely low.

Again, it seems that there is no relationship between the proxy and the outcome variable, when a 10-point scale is used. The next step is therefore to explore the alternative of recoding the variables. The solution of dichotomizing the 10-point scale might help in distinguishing much more clearly between the two sides of each proxy variable and also getting a simpler picture of the results, particularly when a cross-country and longitudinal approach is adopted. Therefore, Table 7b and Table 8b reconsider the relationship between the above proxy variables and the outcome variable. While the dichotomy individuals versus state does not introduce any difference in the variation of the outcome variable, the one between having or not control over life seems to indicate there might be a relationship between this one and the outcome variable: Those people who consider they have control over their life tend to agree with the idea of making individual sacrifices for the environment more than those who thing they do not have control at all over their life.

Table 7b. The variation of Europeans' willingness to give part of their income for environmental protection given by their opinion regarding the role of individuals versus state for a good quality of life, 1990-2009.

	Giving part of the income for environmental protection						Total
	NA	DK	Strongly agree	Agree	Disagree	Strongly disagree	
No answer	13.4%	12.1%	10.9%	31.7%	21.2%	10.8%	100%
Don't know	1.8%	22.0%	8.9%	29.2%	23.8%	14.3%	100%
Individuals should take more responsibility for providing for themselves	0.7%	5.2%	14.4%	44.0%	24.2%	11.6%	100%
State should take more responsibility to ensure that everyone is provided for	0.8%	5.1%	14.1%	44.3%	24.1%	11.7%	100%
Total	0.8%	5.6%	14.1%	43.7%	24.1%	11.7%	100%

*Contingency Coefficient = 0.15, p=0.000

Table 8b. The variation of Europeans' willingness to give part of their income for environmental protection given by their opinion regarding how much control over their life they have, 1990-2009.

	Giving part of the income for environmental protection						Total
	No answer	Don't know	Strongly agree	Agree	Disagree	Strongly disagree	
No answer	12.9%	12.0%	10.3%	32.1%	19.8%	12.9%	100%
Don't know	2.1%	23.7%	8.2%	27.7%	24.2%	14.2%	100%
A great control over life	0.7%	4.9%	14.5%	**45.3%**	23.9%	10.7%	100%
Not at all	0.9%	6.0%	13.6%	40.8%	24.8%	**13.8%**	100%
Total	0.8%	5.6%	14.1%	43.7%	24.1%	11.7%	100%

*Contingency Coefficient = 0.15, p=0.000

Regarding the non-reciprocal responsibility that is constitutive to the ecological citizenship, I have already mentioned volunteering as a proxy of it. Here, a binary variable referring to volunteering has been generated using 13 questions about the types of NGOs that people might volunteer for. This distinguishes between those not volunteering at all and those volunteering for a maximum of six NGOs. The relationship between the two variables appears significant – those who volunteer in one or more NGOs tend to agree much more with the idea of giving part of their income to protect the environment, than those who do not volunteer at all.

Table 9. The variation of Europeans' willingness to give part of their income for environmental protection by whether they volunteer in NGOs: 1990-2009.

		Giving part of the income for environmental protection						*Total*
		No answer	*Don't know*	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*	
Not Volunteering	*Count*	*606*	*4153*	*8959*	*28502*	*16972*	*8750*	*67942*
	%	*0.9%*	*6.1%*	*13.2%*	*42.0%*	*25.0%*	*12.9%*	*100.0%*
Volunteering for a maximum of 6 NGOs	*Count*	*130*	*783*	*3586*	*10290*	*4484*	*1610*	*20883*
	%	*0.6%*	*3.7%*	***17.2%***	***49.3%***	*21.5%*	*7.7%*	*100.0%*
Volunteering in more than 6 NGOs	*Count*	*4*	*9*	*48*	*112*	*30*	*14*	*217*
	%	*1.8%*	*4.1%*	*22.1%*	*51.6%*	*13.8%*	*6.5%*	*100.0%*
Total	*Count*	*740*	*4945*	*12593*	*38904*	*21486*	*10374*	*89042*
	%	*0.8%*	*5.6%*	*14.1%*	*43.7%*	*24.1%*	*11.7%*	*100.0%*

*****Contingency Coefficient = 0.10, p=0.000

** I have treated as potential outliers those individuals who declared that they volunteered in more than 6 NGOs. The explicative models tested in Chapters 6 and 7 is a binary variable and includes all cases.

The next proxy variable is related to the feature of sharing care and compassion for those people who are strangers and distant both in time and space. The attitude towards people in need has been chosen as a good proxy of this characteristic of ecological citizenship. The variable has initially had five categories, but based on Dobson's theory, I considered it is more appropriate to transform the variable by distinguishing between societal and individual reasons for poverty. The relationship between the two variables shows that those considering poverty a result of various societal reasons tend to be more willing to give part of their income for environmental protection than those defining poverty as an effect of individual behavior. These differences can be clearly seen if the distribution of the outcome variable is recoded to unify the 'strongly agree' and 'agree' categories. A transformation of the variable that maintains the initial ordinal distribution, but provides a complete picture of people who are willing to protect the environment might be

beneficial in terms of increasing the visibility of the trends identified in this empirical analysis. This alternative will be considered in future analyses presented in this thesis.

Table 10. The variation of Europeans' willingness to give part of their income for environmental protection given by their attitudes towards people in need, 1990-2009.

			Giving part of the income for environmental protection						*Total*
			No answer	*Don't know*	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*	
	No answer	*Count*	*42*	*64*	*90*	*251*	*162*	*63*	*672*
			6.3%	*9.5%*	*13.4%*	*37.4%*	*24.1%*	*9.4%*	*100%*
	Do not know	*Count*	*43*	*407*	*239*	*903*	*550*	*325*	*2467*
			1.7%	*16.5%*	*9.7%*	*36.6%*	*22.3%*	*13.2%*	*100%*
	Individual related reasons	*Count*	*277*	*1993*	*4696*	*15077*	*9148*	*4685*	*35876*
			0.8%	*5.6%*	*13.1%*	*42.0%*	*25.5%*	*13.1%*	*100%*
	Societal related reasons	*Count*	*348*	*2287*	*7093*	*21315*	*10959*	*5000*	*47002*
			0.7%	*4.9%*	***15.1%***	***45.3%***	*23.3%*	*10.6%*	*100%*
	None of these	*Count*	*30*	*194*	*475*	*1358*	*667*	*301*	*3025*
			1.0%	*6.4%*	*15.7%*	*44.9%*	*22.0%*	*10.0%*	*100%*
Total		*Count*	*740*	*4945*	*12593*	*38904*	*21486*	*10374*	*89042*
			0.8%	*5.6%*	*14.1%*	*43.7%*	*24.1%*	*11.7%*	*100%*

*****Contingency Coefficient = 0.11, p=0.000

The variable related to the sense of belonging, which has been seen as an excellent proxy for the non-bordered character of ecological citizenship, requires a number of decisions and transformations. I have already mentioned when I described the population under study that this question was not asked in East Germany in the 1990 wave of the EVS. Moreover, also for the West Germany the response categories were not really identical with those from the rest of European countries. Due to the fact that this proxy variable is very important for the analytical framework of the research and it is also valuable to have information about Germany, seen as one of the leaders in environmental politics, a number of transformations have been made. First, the variables for the West Germany sub-sample have been considered, in order to adjust their particular measurement (six response categories) to the rest of the EVS dataset (five response categories). These variables have been used to create a new variable, more appropriate to the theory of ecological citizenship, distinguishing between four categories: "local & global", "local and regional", "national", and "supra-national" sense of belonging. From this, a new variable has been created, which has two categories only: those who have and those who do not have at all a

national sense of belonging. The following two tables (Table 11a and 11b) show the relationship between these computed variables and the outcome variable.

Table 11a. The variation of Europeans' willingness to give part of their income for environmental protection given by the sense of belonging: 1990-2009.

			Giving part of the income for environmental protection						*Total*
			No answer	*Don't know*	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*	
	Other missing	*Count*	*100*	*382*	*506*	*1275*	*813*	*460*	*3536*
			2.8%	*10.8%*	*14.3%*	*36.1%*	*23.0%*	*13.0%*	*100%*
	Locality/Regional & Europe/Global	*Count*	*52*	*295*	*1469*	*3425*	*1353*	*610*	*7204*
			0.7%	*4.1%*	***20.4%***	***47.5%***	*18.8%*	*8.5%*	*100%*
	Local & Regional	*Count*	*247*	*1390*	*2606*	*9385*	*6470*	*3322*	*23420*
			1.1%	*5.9%*	*11.1%*	*40.1%*	*27.6%*	*14.2%*	*100%*
	Country as a whole	*Count*	*336*	*2836*	*7522*	*23855*	*12487*	*5799*	*52835*
			0.6%	*5.4%*	*14.2%*	*45.1%*	*23.6%*	*11.0%*	*100%*
	Europe & Global	*Count*	*5*	*42*	*490*	*964*	*363*	*183*	*2047*
			0.2%	*2.1%*	***23.9%***	***47.1%***	*17.7%*	*8.9%*	*100%*
Total		*Count*	*740*	*4945*	*12593*	*38904*	*21486*	*10374*	*89042*
			0.8%	*5.6%*	*14.1%*	*43.7%*	*24.1%*	*11.7%*	*100%*

*****Contingency Coefficient = 0.13, p=0.000

The relationship between the variable measuring the sense of belonging and the outcome variable confirms Dobson's views that people sharing a local and a global sense of belonging are concerned with the environment in a way that is slightly different than the traditional forms of belonging and caring about the public good. While 69% of people declaring they belong to the locality/region they live but also to the Europe or the entire Earth express their commitment to giving part of their income for environmental protection, only 59% of those declaring they mainly belong to the country as a whole are also keen to make individual sacrifices to protect the environment.

On the other side, a dichotomist approach in which it is distinguished between those sharing national identity and those transgressing national identity seems to not offer any benefit in understanding the variation in people's willingness to protect the environment. In this latter case, there are no differences between the two categories with regard to environmental commitment.

Table 11b. The variation of Europeans' willingness to give part of their income for environmental protection given by their sense of belonging, 1990-2009.

			Giving part of the income for environmental protection						*Total*
			No answer	*Don't know*	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*	
	Other missing	*Count*	*100*	*382*	*506*	*1275*	*813*	*460*	*3536*
			2.8%	*10.8%*	*14.3%*	*36.1%*	*23.0%*	*13.0%*	*100%*
	Transgressing National Identity	*Count*	*304*	*1727*	*4565*	*13774*	*8186*	*4115*	*32671*
			0.9%	*5.3%*	*14.0%*	*42.2%*	*25.1%*	*12.6%*	*100%*
	Sharing National Identity	*Count*	*336*	*2836*	*7522*	*23855*	*12487*	*5799*	*52835*
			0.6%	*5.4%*	*14.2%*	*45.1%*	*23.6%*	*11.0%*	*100%*
Total		*Count*	*740*	*4945*	*12593*	*38904*	*21486*	*10374*	*89042*
			0.8%	*5.6%*	*14.1%*	*43.7%*	*24.1%*	*11.7%*	*100%*

*Contingency Coefficient = 0.07, p=0.000

The other important proxy variable that shows the horizontal relationships between citizens is the one related to societal trust, which is reported in Table 12. The association between this variable and the outcome variable shows that people who consider that most people can be trusted have a higher willingness to sacrifice part of their income for the environment, than those who consider that people cannot be trusted. This trend confirms Dobson's idea that people who care about the environment are also more likely to value their relationships with others.

Table 12. The variation of Europeans' willingness to give part of their income for environmental protection given by the level of societal trust: 1990-2009.

			Giving part of the income for environmental protection						*Total*
			No answer	*Don't know*	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*	
	Do answer	*Count*	*23*	*48*	*92*	*235*	*136*	*80*	*614*
			3.7%	*7.8%*	*15.0%*	*38.3%*	*22.1%*	*13.0%*	*100%*
	Don't know	*Count*	*32*	*447*	*377*	*1243*	*823*	*363*	*3285*
			1.0%	*13.6%*	*11.5%*	*37.8%*	*25.1%*	*11.1%*	*100%*
	Most people can be trusted	*Count*	*208*	*1372*	*5014*	*14132*	*6360*	*2565*	*29651*
			0.7%	*4.6%*	***16.9%***	***47.7%***	*21.4%*	*8.7%*	*100%*
	Cannot be too careful	*Count*	*477*	*3078*	*7110*	*23294*	*14167*	*7366*	*55492*
			0.9%	*5.5%*	*12.8%*	*42.0%*	*25.5%*	*13.3%*	*100%*
Total		*Count*	*740*	*4945*	*12593*	*38904*	*21486*	*10374*	*89042*
			0.8%	*5.6%*	*14.1%*	*43.7%*	*24.1%*	*11.7%*	*100%*

*Contingency Coefficient = 0.13, p=0.000

5.4. Building the explicative models: the relationships between the potential predictors of Europeans' willingness to give part of their income for environmental protection.

I have shown in Chapter 4, the value of considering a number of aspects as potential predictors of Europeans' commitment to protecting the environment. The descriptive analysis has supported the argument that Europeans' commitment to protecting the environment varies by time and country. Furthermore, the descriptive analysis has drawn attention to variation over time *within* the same country. This observation has been valid for 20 of 22 countries included in the analysis – only in France and Italy the distribution for each response category has followed the same pattern over the two decades, 1990-2009. With regard to the proxy variables related to ecological citizenship theory, the descriptive analysis has not confirmed that Europeans' willingness to protect the environment varies by their choices between freedom and equality or by their views about the individuals' responsibility for providing for themselves versus the role of the state in providing for people. Significant relationships have been identified between the outcome variable and the variables related to 'control over life', 'volunteering', 'attitudes toward poverty', 'sense of belonging', and 'societal trust'. In addition to the findings from the above descriptive analysis, this following section will detail the bivariate relationships between the variables that are included into the explicative framework as potential predictors.

Trends at the European level over the years 1990-2009.

The bivariate analysis shows that there are significant associations between the potential predictors of Europeans' willingness to give part of their income for environmental protection. The next table (Table 13) summarizes these relationships by presenting the coefficients calculated to measure the one-by-one association between them.

Table 13: The relationships between the proxy variables related to the ecological citizenship theory, as shown by the bivariate measures of association*. 22 European countries, 1990-2009.[9]

	Equality versus Freedom	*Individuals versus State*	*Control over Life*	*Volunteering*	*Attitudes towards people in need*	*Sense of Belonging*	*Societal Trust*
Equality vs. Freedom							
Individuals vs. State	***V = 0.17***						
Control over Life	***V = 0.13***	***C = 0.17***					
Volunteering	*V = 0.03*	*C = 0.03*	*C = 0.08*				
Attitudes towards people in need	***C = 0.15***	***V = 0.09***	***V = 0.08***	*V = 0.03*			
Sense of Belonging	*V = 0.06*	*V = 0.07*	*V = 0.06*	*V = 0.04*	*V = 0.06*		
Societal Trust	*V = 0.07*	*V = 0.06*	***V = 0.10***	*V = 0.09*	*V = 0.07*	*V = 0.05*	

* Note: All coefficients are statistically significant, p=0.00

A straightaway observation from Table 13 concerns the common variability of people's preferences for equality or freedom, their views about the role of the state in providing for people in contrast to the individuals' responsibility for providing for themselves, their perceived control over life, and their attitudes towards people in need. It is therefore worth examining the associations between the four variables.

To begin with, Table 14 shows that those who agree with the statement that individuals should take more responsibility for providing for themselves tend to value freedom more than equality, defined here by the expression 'everyone can live in freedom and develop without hindrance' In contrast, those who adopt the idea that the state should take more responsibility to ensure that everyone is provided for would advance equality above freedom, giving preference to the principle that 'nobody is underprivileged and that the social class differences are not so strong' Table 15 presents the associations between these two variables.

[9] According to the literature, Cramer's V coefficient (V) is the most appropriate measure of association in the case of unequal tables (2x3, 3x5, etc.). The contingency coefficient (C) is an adequate measure for tables having an equal number of row and columns (3x3, 4x4, etc.). Both measures are based on Pearson's Chi-squared test, seen as the best measure of association between categorical variables.

Table 14: The variation of Europeans' preferences for Freedom or Equality given by their views regarding the responsibility of individuals for providing for themselves or the responsibility of the state for providing for people. Years 1990-2009.

	Priority given to Equality or Freedom					
	No answer	*Don't know*	*Freedom above equality*	*Equality above freedom*	*Neither*	*Total*
No Answer	*134*	*75*	*182*	*113*	*35*	*539*
	24.9%	*13.9%*	*33.8%*	*21.0%*	*6.5%*	*100%*
Don't Know	*43*	*640*	*529*	*468*	*178*	*1858*
	2.3%	*34.4%*	*28.5%*	*25.2%*	*9.6%*	*100%*
Individuals should take more responsibility for providing for themselves	*340*	*2636*	*29997*	*18383*	*3073*	*54429*
	0.6%	*4.8%*	***55.1%***	*33.8%*	*5.6%*	*100%*
State should take more responsibility to ensure that everyone is provided for	*233*	*1582*	*14091*	*14617*	*1693*	*32216*
	0.7%	*4.9%*	*43.7%*	*45.4%*	*5.3%*	*100%*
Total	*750*	*4933*	*44799*	*33581*	*4979*	*89042*
	0.8%	*5.5%*	*50.3%*	*37.7%*	*5.6%*	*100%*

Cramer's V Coefficient = 0.17; p=0.00

According to Dobson's theory, ecological citizenship promotes the idea of individuals' responsibility (for providing for themselves, in our case), while giving significant importance to justice – equality, in our case. Thus, only 34% of people are included in this intersected category. Here it is important to recall two aspects. Firstly, the distinction between the importance of freedom versus equality can be very debatable, in the sense that it can be very hard to choose between the two in our contemporary times, when not only freedom of choice is so much promoted, but also equal opportunities for everyone. Secondly, justice is a broad concept, which can include equality, indeed, but only when the urging for equality is promoted in a just way. I am referring here to the regrettable events that happened in the communist countries in the name of social equality, such as: collectivization by force, non-recognition of private ownership, and the imprisonment of the intellectual elites in order to control the emergence of any opposition to the communist regime. Therefore, a significant 'anti-equality' attitude is expected to exist at least in the ex-communist countries and should be taken into account in any explicative models that include this variable.

Both of these variables are significantly associated with the measure related to the control over life. At the aggregate level, 70% of Europeans have declared they have a great control over their lives. However, the percentage of those who prioritize freedom above equality and perceive they

have a great control over their lives is 7% higher than of those who value equality above freedom and think they control their lives. Similarly, the share of people who consider it is the responsibility of individuals to look after themselves and perceive they have a great control over their lives is 6% higher than of those who consider it is the responsibility of the state to provide for people and also believe they have a great control over their lives. Tables 15 and 16 summarize these findings.

Table 15: The variation of Europeans' perceived control over their lives given by their views for freedom or equality. Years 1990-2009.

		How much control do you have over your Life				
		NA	*DK*	*A great control over life*	*A low control over life*	*Total*
Priority given to Equality or Freedom	*No answer (NA)*	*60*	*46*	*410*	*234*	*750*
		8.0%	*6.1%*	*54.7%*	*31.2%*	*100%*
	Don't know (DK)	*37*	*509*	*2789*	*1598*	*4933*
		0.8%	*10.3%*	*56.5%*	*32.4%*	*100%*
	Freedom above equality	*134*	*514*	*33119*	*11032*	*44799*
		0.3%	*1.1%*	***73.9%***	*24.6%*	*100%*
	Equality above freedom	*94*	*438*	*22630*	*10419*	*33581*
		0.3%	*1.3%*	*67.4%*	***31.0%***	*100%*
	Neither freedom nor equality	*24*	*146*	*3345*	*1464*	*4979*
		0.5%	*2.9%*	*67.2%*	*29.4%*	*100%*
Total		*349*	*1653*	*62293*	*24747*	*89042*
		0.4%	*1.9%*	*70.0%*	*27.8%*	*100%*

Cramer's V Coefficient = 0.13; p=0.000

Table 16: The variation of Europeans' perceived control over their lives given by their views regarding the responsibility of individuals for providing for themselves or the responsibility of the state for providing for people. Years 1990-2009.

	How much control do you have over your Life				
	NA	*DK*	*A great control over life*	*A low control over life*	*Total*
No answer (NA)	*48*	*30*	*290*	*171*	*539*
	8.9%	*5.6%*	*53.8%*	*31.7%*	*100%*
Don't know (DK)	*16*	*320*	*926*	*596*	*1858*
	0.9%	*17.2%*	*49.8%*	*32.1%*	*100%*
Individuals should take more responsibility for providing for themselves	*165*	*735*	*39467*	*14062*	*54429*
	0.3%	*1.4%*	***72.5%***	*25.8%*	*100%*
State should take more responsibility to ensure that everyone is provided for	*120*	*568*	*21610*	*9918*	*32216*
	0.4%	*1.8%*	*67.1%*	*30.8%*	*100%*
Total	*349*	*1653*	*62293*	*24747*	*89042*
	0.4%	*1.9%*	*70.0%*	*27.8%*	*100%*

Cramer's V Coefficient = 0.17; p=0.000

As mentioned, the way Europeans give priority to freedom or equality is linked not only with their views related to the role of the state in providing for people or the individuals' responsibility for providing for themselves as well as with their perceived control over life, but it is also associated with their attitudes towards people in need. To recall that at the aggregate level 53% of Europeans consider that people live in need due to various societal related reasons, while 40% of

Europeans give more importance to the individual related reasons of poverty. The tendency to give priority to the societal reasons of poverty can be also found when other categorizations are introduced: no matter their preferences for freedom or equality, no matter their views about the role of the state in providing for people or about the individuals' duties for providing for themselves, and no matter the extent they perceive they have control over their lives, the majority of European people thinks that poverty has mainly societal reasons. However, the share of people who value equality and think poverty has societal reasons is 6% higher than the share of people who value freedom and also think poverty is a structural phenomenon. Similarly, the percentage of people who consider the state has the responsibility for providing for people and at the same time see poverty as an effect of societal structure is 8% higher than the percentage of people who think that individuals have the duty to provide for themselves but perceive poverty as having mainly social determinants. Tables 17 and 18 show the common variation of these two variables.

Table 17: The variation of Europeans' attitudes towards people in need given by their views for freedom or equality. Years 1990-2009.

		Why people live in need					
		NA	*DK*	*Individual related reasons*	*Societal related reasons*	*None of these reasons*	*Total*
Priority given to Equality or Freedom	*No answer (NA)*	*54*	*34*	*282*	*348*	*32*	*750*
		7.2%	*4.5%*	*37.6%*	*46.4%*	*4.3%*	*100%*
	Don't know (DK)	*65*	*574*	*2040*	*2041*	*213*	*4933*
		1.3%	*11.6%*	*41.4%*	*41.4%*	*4.3%*	*100%*
	Freedom above equality	*315*	*1001*	*18929*	*22978*	*1576*	*44799*
		0.7%	*2.2%*	*42.3%*	*51.3%*	*3.5%*	*100%*
	Equality above freedom	*203*	*642*	*12627*	*19280*	*829*	*33581*
		0.6%	*1.9%*	*37.6%*	*57.4%*	*2.5%*	*100%*
	Neither	*35*	*216*	*1998*	*2355*	*375*	*4979*
		0.7%	*4.3%*	*40.1%*	*47.3%*	*7.5%*	*100%*
Total		*672*	*2467*	*35876*	*47002*	*3025*	*89042*
		0.8%	*2.8%*	*40.3%*	*52.8%*	*3.4%*	*100%*

Contingency Coefficient = 0.15; p=0.000

Table 18: The variation of Europeans' attitudes towards people in need given by their views regarding the responsibility of individuals for providing for themselves or the responsibility of the state for providing for people. Years 1990-2009.

	Why people live in need					
	NA	*DK*	*Individual related reasons*	*Societal related reasons*	*None of these*	*Total*
No answer (NA)	*50*	*45*	*198*	*221*	*25*	*539*
	9.3%	*8.3%*	*36.7%*	*41.0%*	*4.6%*	*100.0%*
Don't know (DK)	*18*	*271*	*796*	*719*	*54*	*1858*
	1.0%	*14.6%*	*42.8%*	*38.7%*	*2.9%*	*100.0%*
Individuals should take more responsibility for providing for themselves	*395*	*1459*	*23192*	*27289*	*2094*	*54429*
	0.7%	*2.7%*	*42.6%*	*50.1%*	*3.8%*	*100.0%*
State should take more responsibility to ensure that everyone is provided for	*209*	*692*	*11690*	*18773*	*852*	*32216*
	0.6%	*2.1%*	*36.3%*	*58.3%*	*2.6%*	*100.0%*
Total	*672*	*2467*	*35876*	*47002*	*3025*	*89042*
	0.8%	*2.8%*	*40.3%*	*52.8%*	*3.4%*	*100.0%*

Cramer's V Coefficient = 0.09; p=0.000

Referring back to Dobson's theory on ecological citizenship, the relationship between justice and compassion, the two virtues of the ecological citizenship, is expressed by the association of people's preferences for equality above freedom with their compassionate attitude towards people in need. At the empirical level, 57% of people from 22 European countries for the time frame 1990-2009 show such a disposition. Furthermore, Dobson's idea of an active citizenship in the private life could find its empirical support in the common variation of two proxy variables: people's view on individuals' responsibility for providing for themselves and their perceived control over their lives. The empirical analysis reveals that 73% of Europeans adopt such an orientation. While a large majority of people manifest the premises of individualization – a key aspect of Dobson's theory – not so many evince the pursuit for caring about others – another key feature of ecological citizenship. The balance between these two opposite trends – that can be roughly called 'ego-centrism' and 'socio-centrism' – constitutes the particularity of ecological citizenship. More specifically, only 50% of those who express the primacy of individuals' responsibility for providing for themselves are able to accept the idea that poverty has mainly societal reasons and only 34% of them give priority to equality above freedom.

Cross-country differences over the last two decades.

While the bivariate analysis might give an insight about the relationships between the potential predictors of Europeans' willingness to give part of their income for environmental protection, a country-by-country analysis for each of these predictors might help in better understanding the trends revealed by the above relationships. For example, at the aggregate level, 50% of Europeans value freedom more than equality, while 38% give priority to equality above freedom. The country-by-country analysis might give more detail regarding whether or not this trend is valid for each country included into analysis and for each survey wave, namely 1990, 2000, and 2009. Therefore, such an analysis can provide preliminary information related to the between and within country variability of each potential predictor of Europeans' commitment to contributing with their income for environmental protection.

Although at the aggregate level Europeans considered freedom more important than equality, there are three countries where people gave priority to equality in each survey wave, in 1990, 2000, and 2009. These countries are Iceland, Italy, and Portugal. In Hungary people also valued equality more than freedom in the last two waves. In Belgium and France freedom was preferred in the first decade, but equality in the second. Furthermore, in eight countries there has been observed a constant decrease of the percentage of people who gave importance to freedom above equality: Austria, Czech Republic, Estonia, Finland, Lithuania, Sweden, the UK, and West Germany. Two remarks should be made here. Firstly, these trends show it is worth taking seriously the variability between and within countries when the potential predictors included into the analytical framework. Secondly, the reasons behind this variability seem to go beyond the expected explanations related to the former communist regimes. Such heterogeneity invites to look deeper into the economic and political profile of each country. This analysis will be presented in Chapter 7, when certain country-level variables will be introduced into the explicative models. For now, the focus is to identify the general trends related to the potential predictors of Europeans' commitment to making financial sacrifices for environmental protection.

With regard to the Europeans' understanding on the role of the state for providing for people versus the responsibility of the individuals for providing for themselves the following observations can be made, in the first instance: over the last two decades, the general trend in 20 of 22 countries included into the analysis has been to give more importance to the duty of the individuals for providing for themselves than to the role of the state for providing for people. Such a trend questions the idea of the state, in particular that of the welfare state. Still, it is in line with the new practices of citizenship that have occurred in our contemporary times and it supports Dobson's advocacy for self- and active citizenship in the private life. Such prioritization of the individual has decreased in Austria and Sweden in the last decade, although the percentage of people sharing this value is still very high – 81% in 1990 to 72% in 2009, in Austria and 84% in 1990 to 70% in 2009, in Sweden. In Italy, although the majority of people gave priority to the responsibility of the individuals for providing for themselves, in the 1990s, gradually this trend has been replaced by the idea that the state should be the main actor responsible for providing for people. Still, in many of the European countries included into the analysis an increase is observed in the proportion of people giving importance to the role of the individuals for providing for themselves; these countries are not only some of the ex-communist countries, such as Estonia, Lithuania, Slovak Republic, and Slovenia, but also those belonging to the well-established democracies: Great Britain and West Germany. As noticed, the pattern that occurs in the variation of people's view on the role of the state versus the role of the individual between countries and over time seems to go beyond the classical distinction between new-democracies and well-established democracies. Therefore, further investigation is required to identify the potential sources of these variations.

Regarding the perceived control over life, the majority of Europeans, from all 22 countries included in the analysis, consider they have a great control over their lives. This is valid for all the three survey waves, 1990, 2000, and 2009. At the aggregate level, the percent is 68% in 1990, 71% in 2000, and 70% in 2009. One of the remarks that can be made is that in some countries

there has been a very high percent of people declaring they have control over their lives, higher than 75%: Denmark, Finland, Iceland, Ireland, Sweden, the United Kingdom, and West Germany. Another observation is that in some other countries, there has been a decrease in the share of people who perceive such a control over their lives, over the last two decades; still they represent more than 50% of their country's population. These countries are: Austria, Bulgaria, Italy, Netherlands, and Portugal.

In the eyes of the majority of Europeans included into this analysis, the reasons behind poverty seem to be related to the societal structure rather than any individual choices. Only in the Czech Republic did more than 50% of people consider poverty as having individual-related reasons, across all the three survey waves. The same trend is observed in Portugal, in the last two survey waves (2000 and 2009) and in Netherland in the last one (in 2009). While in Denmark, Estonia, Ireland, Lithuania, and Poland it has been noticed a decrease in the percent of people that consider poverty as having societal-related determinants, in Bulgaria, Iceland and West Germany there has been an increase in the share of people thinking that poverty is a structural phenomenon rather than having individual causes, from 1990 to 2000 and, then, 2009.

5.5. Conclusion.

Referring back to the purpose of this section, the trends presented here draw attention about the variability that exists both between and within countries regarding the potential predictors of Europeans' willingness to give part of their income for environmental protection. On the other side, at the aggregate level, the majority of Europeans give priority to freedom rather than to equality, declare they have a great control over their lives, and advance the role of the individuals in providing for themselves rather than expecting from the state to be responsible for providing for people. Still, they attribute societal-related determinants to poverty, instead of considering that people live in need because of individual-related reasons. Therefore, the premises for ecological citizenship to be in place, as Dobson reiterates (Dobson, 2000: 41, 58), are already prefigured by the prevalence of such processes of individualization and by the attitudes of understanding and compassion oriented towards people in need. However, the variation between

and within countries has to be taken into account when the explicative models of Europeans' commitment to protecting the environment will be introduced. The distinction new/old democracies seems to not be enough to explain such a variability and therefore further aspects would need to be considered in order to understand the reasons behind this heterogeneity.

In this chapter, I have shown the importance of adopting a cross-country and longitudinal approach, according to the sources of variability that are given by time and country. The empirical data supports the theoretical arguments that framed the design of this research. Moreover, the preliminary analysis already confirms the importance of accounting for the democratic profile of a country and of national environmental politics.

Then, I examined whether the variables selected as proxies of ecological citizenship theory can explain people's commitment to making individual financial sacrifices for the environment. As could be seen, two of these proxy variables do not have a common variability with the outcome variable. In other words, the Europeans' commitment to making individual financial sacrifices to protect the environment is independent of the variation given by their preferences for equality or freedom and by the one related to their views regarding the individuals' responsibility for providing for themselves versus state's responsibility for providing people for. Still, Europeans' willingness to give part of their income is linked with the perception of having control over life, with the experience of doing voluntary work for any kinds of NGOs, with a responsible view on the contemporary causes of poverty, with a concomitant local and global sense of belonging and with a significant level of societal trust.

From the next chapter onwards, a series of empirical analyses will be completed. In Chapter 6 the first explicative models based on ecological citizenship theory will be built, in order to find the significant predictors of Europeans' disposition to contribute with their income to environmental protection. In Chapter 7, the focus will be on the integrative analysis. The country-level variables related to democratic governance and environmental policy will be introduced into the explicative models.

Chapter 6. Individual-level predictors of Europeans' willingness to give part of their income for environmental protection.

A cross-country longitudinal analysis over the years 1990-2009.

In this chapter, I use data from the European Values Study (EVS, 2011) and the theory of ecological citizenship developed by Andrew Dobson (2000, 2003, 2006, 2007) to research Europeans' commitment to protecting the environment. The chapter has three parts. Firstly, I analyse the variation between countries and over time regarding public willingness to give part of their income for the environment. In the second part I include in the explicative models a number of proxy variables relative to the features of ecological citizenship, in order to deepen the explanation of public commitment to protecting the environment. I bring evidence regarding the existence of green citizens in Europe over the last two decades and I also discuss whether the income level of citizens increase or decrease their commitment to environmental protection. In the third part, I discuss the results. I draw attention to some limitations of the research and indicate new potential directions of study. I conclude by highlighting the contribution of this research to the field of environmental politics.

This chapter examines how Europeans' willingness to give part of their income for environmental protection can be explained by the features of ecological citizenship and by the income. As I have shown in previous chapters, some scholars have argued in favour of a globally spread environmentalism, not depending on financial wealth (Dunlap and van Liere, 1978, 1984, 1992/2000 Dunlap, van Liere, Mertig & Jones, 2000; Dunlap & York, 2008), but others have advanced the idea that public environmental concern is subsequent to individual and/or country financial welfare (Ester, Halman & Seuren, 1993; Inglehart, 1995; Gellisen, 2007; Franzen & Meyer, 2010) and to objective environmental problems (Inglehart, 1995). As a way of bringing moderation to this debate, I propose the idea of ecological citizenship developed by Andrew Dobson (2000, 2003, 2006, 2007). I suggest that this form of citizenship can bridge the opposite views, thanks to its integrative character, which calls for valuing all aspects of contemporary human condition and has the merit to question how polis and the contemporary self are understood and how politics is made. As discussed in Chapter 3, this value of ecological citizenship resides in a constellation of implicit and explicit dimensions, articulated by Andrew Dobson as follows: a non-contractualism, emphasizing non-territoriality and horizontal

relationships, blurring the borders between public arena and private sphere, under the umbrella of social justice, care and compassion (Dobson, 2000: 41-61).

6.1. Empirical research related to ecological citizens

The empirical research regarding ecological citizenship has taken both a qualitative approach (Seyfang, 2005, 2006; Horton, 2005; Wolf et. al, 2009) and a quantitative one (Jagers, 2009; Jagers & Matti, 2010. In line with the approach of this thesis, I will briefly refer here to those quantitative studies that have been undertaken thus far. The very first national-scale study on ecological citizenship was conducted in 2005, based on data collected through self-completed questionnaires send by post to a random sample of 3000 Swedish people aged 15-85 (Jagers, 2009). The response rate was reported as 62%, which is below the generally preferred standard in survey research (70%). Jagers analysed ecological citizenship through an index constructed by using the responses to three questions, two of them directly related to the willingness to pay taxes for environmental purposes and poverty-reduction, respectively, and another one referring to the (classical) opposition of 'green society' versus 'economic growth'. Considering this index as the dependent variable, Jagers analysed the effect of certain individual-related characteristics on the variation of this index. He concluded that the left/right ideology, interest in politics, the perceived environmental threat, and age determine people's willingness to take a pro-environmental position (Jagers, 2009: 32-33). This study offers the first contribution to demonstrate that ecological citizenship can be studied by adopting a quantitative approach[10]. However, it has a number of limitations specific to postal surveys, such as use of a self-completion questionnaire and a low response rate. It also refers to one country only. Another study on ecological citizenship that has been conducted by Jagers and Matti refers also to Swedish people and it consists of a postal survey, with a response rate of 32% (Jagers & Matti, 2010). This time, ecological citizenship has been articulated by considering three key elements of Dobson's view on this form of citizenship, mainly the non-reciprocal character of acting ecologically correctly, the

[10] To note that ecological citizenship is considered to be the *outcome*, in Jagers' study (2005), while in my research I use ecological citizenship as *predictor* of public commitment to protecting the environment.

non-separation between private life and the public arena in adopting a pro-environmental attitude and/or behaviour, and the focus on the relationships between citizens. In order to account for these dimensions, they include in their survey the Schwartz Values Survey scale (Schwartz, 1992, 2006), the New Environmental Paradigm scale (Dunlap and van Liere, 1978), and a series of questions regarding people's willingness to change towards a pro-environmental behaviour and their support for environmental policy (Jagers & Matti, 2010: 1062). Again this study has some methodological limitations associated with a postal survey, such as self-completion of the questionnaire and a very low response rate, it refers to only one country and does not account for all dimensions of the ecological citizenship. However, it pioneers the field of national-scale research on ecological citizenship, providing the very first insights regarding ecological citizens on a large-scale. Together, these studies follow the debate with regard to the drivers of pro-environmental positions, which has taken place in the last decades. The analysis that I present in this chapter also belongs to this debate. However, the key-difference is that I adopt a cross-country and longitudinal approach in studying public environmental commitment.

6.2. Building explicative models of Europeans' willingness to give part of their income for environmental protection.

I showed in the previous chapter that there are statistically significant associations between the potential predictors introduced by the analytical framework and Europeans' commitment to making financial sacrifices for the environment. This has offered a first argument for the value of the analytical framework in itself. It has also signalled that including these potential predictors into further analyses can offer a better understanding regarding Europeans' willingness to give part of their income for environmental protection. I have also shown that there are significant relationships between these predictors in themselves. This might constitute a considerable source of interaction between the effects that each predictor has upon Europeans' commitment to environmental protection. In addition to this, I have shown that significant between- and within-country variability exist regarding not only the Europeans' willingness to give part of their income to protect the environment, but also its potential predictors. Therefore, there are substantial arguments for employing more complex statistical methods, such as ordinal or multinomial

regression modelling, in order to follow the ordinal measurement of the outcome variable. This section will advance a series of explicative models of Europeans' commitment to protecting the environment. These models are built by including as potential predictors firstly the variables related to country and survey wave (time) and secondly the proxy variables of ecological citizenship, in order to capture the contribution of each type of predictor (country-level or individual-level) to the variability of the outcome variable.

The threshold model

I begin by introducing what in social statistics is called "the empty model" or "the baseline model", which reproduces the variation of the outcome variable only: the willingness of people to give part of their income for environmental protection. The explicative models presented in this chapter refer to the following countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Iceland, Ireland, Italy, Lithuania, the Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, the United Kingdom, and Germany West. As was shown in Chapter 4, the outcome variable has four response categories, 'strongly agree', 'agree', 'disagree', and 'strongly disagree', plus the category 'Don't Know' (DK) and 'No Answer' (NA). Thus, the analysis of the outcome variable requires statistical methods that consider a non-normal distribution. Cumulative probability regression models have been developed to capture the effects of a potential predictor on the odds of being at or below a particular response category (O'Connell, 2006). In this analysis, the following will be predicted: 1) the odds of being at or below the category 'strongly agree', 2) the odds of being at or below the category 'agree', and 3) the odds of being at or below the category 'disagree', while keeping 'strongly disagree' as the reference category. The non-responses are also included into the models in order to have the entire picture of how the responses are distributed. Table 19 presents the model:

Table 19: Explaining Europeans' willingness to give part of their income for environmental protection: the baseline model. 22 European countries, 1990-2009.

	Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Don't Know (DK)	-2.685	.014	38376.356	1	.000	-2.712	-2.658
Strongly Agree	-1.354	.008	26617.077	1	.000	-1.370	-1.337
Agree	.585	.007	6999.313	1	.000	.571	.599
Disagree	2.026	.010	37618.367	1	.000	2.005	2.046

Link function: Logit. The reference category is: 'Strongly disagree'. Cases are not weighed. DK cases are included into the model.

For this baseline model only, I will explain the steps in detail. For the models that include the effect of the potential predictors on the outcome variable, I will focus mainly on interpreting the research findings gained by adopting such a statistical method. It is worth saying that in the case of cumulative probability models, the algorithm for estimating the odds for each category is calculated separately. In fact, the number of equations that are employed is the number of response categories minus one. It starts from the general formula:

$$log\left(\frac{Cp_{ij}}{1-Cp_{ij}}\right) = a_j - bx_j$$

where:
j=1,2,...,J-1; J=the number of response categories
Cp_{ij}= cumulative probability of being in category j or lower Cp_{ij};
$1 - Cp_{ij}$= probability of being above category j;
p_j= probability of being in category j.
Then, Cp_{ij} can be calculated, using the correspondent formula for the logarithmic function:

$$Cp_j = \frac{\exp\,(a_j - bx)}{1 + \exp\,(a_j - bx)}$$

Put differently, the cumulative probability of being at or below the categories 'strongly agree', 'agree', and 'disagree' are as follows:

$$Cp_{Don'tKnow} = \frac{\exp\,(a_j - bx)}{1 + \exp\,(a_j - bx)} = \frac{\exp\,(a_{DK} - bx)}{1 + \exp\,(a_{DK} - bx)} = \frac{\exp(-2.68 - b * 0)}{1 + \exp\,(-2.68 - b * 0)} = \frac{.06}{1 + .06} = 0.05$$

$$Cp_{Strongly\ Agree} = \frac{\exp\,(a_j - bx)}{1 + \exp\,(a_j - bx)} = \frac{\exp\,(a_{strongly\ Agree} - bx)}{1 + \exp\,(a_{strongly\ agree} - bx)} = \frac{\exp(-1.35 - b * 0)}{1 + \exp\,(-1.35 - b * 0)} = \frac{.25}{1 + .25} = 0.20$$

$$Cp_{\ Agree} = \frac{\exp\,(a_j - bx)}{1 + \exp\,(a_j - bx)} = \frac{\exp\,(a_{Agree} - bx)}{1 + \exp\,(a_{Agree} - bx)} = \frac{\exp(.58 - b * 0)}{1 + \exp\,(.58 - b * 0)} = \frac{1.78}{1 + 1.78} = 0.64$$

$$Cp_{Disagree} = \frac{\exp(a_j - bx)}{1 + \exp(a_j - bx)} = \frac{\exp(a_{Disagree} - bx)}{1 + \exp(a_{Disagree} - bx)} = \frac{\exp(2.02 - b * 0)}{1 + \exp(2.02 - b * 0)} = \frac{7.53}{1 + 7.53} = 0.88$$

These are the cumulative probabilities or the cumulative logits and, as could be seen, there are different equations employed simultaneously. From this it is possible to calculate the probability of being in a given category, considering the formulas:

$P_1=Cp_1$. Here, it corresponds to the probability of being in the category 'DK' (Don't Know).

$P_j=Cp_j-Cp_{j-1}$;

P_2, the probability of being in the category 'Strongly agree' is $Cp_{Strongly\ Agree}-Cp_{Don't\ Know}$=0.20-0.05=0.15;

P_3, the probability of being in the category 'Agree' is $Cp_{Agree}-Cp_{Strongly\ Agree}$ =0.64-0.20=0.44;

P_4, the probability of being in the category 'Disagree' is $Cp_{Disagree}-Cp_{Agree}$ =0.88-0.64=0.24;

$P_j=1-Cp_{J-1}$, the probability of being in the category 'Strongly Disagree' is $1-Cp_{Disagree}$=1-.88=0.12.

These results are similar with those presented in Table 3, Chapter 5. They show Europeans' commitment to giving part of their income for environmental protection is all 22 European countries over the period from 1990 to 2009. They still do not provide any information regarding the effect of time on Europeans environmental commitment, as discussed at the beginning of this section. The following models will consider such variability.

Europeans' commitment to protecting the environment over time

The results achieved through descriptive analysis have already highlighted the variation of Europeans' commitment to giving part of their income for environmental protection over time. The observation is valid not only at the pooled-country level[11], but also at the country level. While the former invites careful consideration of the idea of change in the European environmentalism, the latter highlights the importance of taking into account the particularities of each country in enabling the emergence of such environmentalism. Table 20 presents the effect of time on the outcome variable, captured by using the ordinal regression method.

Table 20. The effect of time on Europeans' willingness to give part of their income for environmental protection. An explicative model using ordinal regression method and data pooled from 22 European countries, three survey waves – 1990, 1999, 2008/2009.

[11] I refer to the 22 countries included into analysis.

		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Outcome Variable	Don't Know (DK)*	-2.396	.016	22888.321	1	.000	-2.427	-2.365
	Strongly Agree	-1.058	.012	8237.418	1	.000	-1.080	-1.035
	Agree	.908	.011	6262.826	1	.000	.885	.930
	Disagree	2.362	.014	28009.859	1	.000	2.334	2.389
Effect of Time	2008-2009	.465	.015	974.801	1	.000	.435	.494
	1999-2001	.491	.015	1016.958	1	.000	.460	.521
	1990-1993	0[a]	.	.	0	.	.	.

Link function: Logit. The Reference Category for the outcome variable is "Strongly disagree'. The survey wave 1990-1993 is taken as reference category. X^2= 1437.38, p=0.00; Nagelkerke =0.016, p=0.00; Test of parallel lines: X^2 = 1388.74, p=0.000. *'Don't know' and 'No Answer' are put together. Cases are not weighted. Statistical Software: SPSS

It is worth mentioning here one of the assumptions of ordinal regression models, namely that the effect of the explanatory variable is the same for each cumulative logit. A graph representing each equation of these cumulative logits should consist of a number of parallel lines, if the assumption holds. This assumption is always tested when an ordinal model is employed. If the hypothesis does not hold, then a multinomial regression model is required. Such a multinomial model will address this issue, by estimating pairwise contrast between each response category and the one taken as reference. For the model presented here, the test gives a statistically significant Chi-square, which rejects the null hypothesis of parallel lines. Thus, a multinomial regression model would better capture the variation given by time of Europeans' willingness to protect the environment. This model is presented in Table 21.

It is also necessary to give detail regarding why I have opted to use ordinal and multinomial regression and not other methods (mainly binary logistic regression). When the outcome variable is measured using an ordinal scale, there are three main possibilities for estimation of a predictive model. The first is to reduce the number of response categories to two, by cumulating them according to a meaning decided by the researcher, and then run a binary logistic model. In the case of the outcome variable relative to this research, this could be "Strongly Agree" and "Agree" taken together and "Disagree" plus "Strongly Disagree". This option has two limitations; firstly, it does not account for the initial distribution, which will increase the errors given by the measurement and sampling procedures, and secondly, once the "Not Answer" (NA) and "Don't Know" (DK) responses are considered, which is advisable, the resulted variable will remain a

multinomial one, and not a binary one, as preferred. The second possibility is to create a number of n-1 new binary variables, but using the same reference category, and then run a logistic model. In our case, this will be V1 ("Strongly Agree" vs. "Strongly Disagree"), V2 ("Agree" vs. "Strongly Disagree"), V3 ("Disagree vs. "Strongly Disagree"), and V4 ("NA+DK" vs. "Strongly Disagree"). This option has the limitation that it still does not account for the initial distribution of data. The third option is to employ an ordinal regression method, which accounts not only for the initial distribution, by calculating the equations simultaneously, but also allows the use of the "DK" answers. Despite the fact that the results are more difficult to interpret, I have decided to adopt the third option, of ordinal regression modelling, and, because the assumption of parallel lines has not been met, I have considered multinomial regression.

Table 21. The effect of time on Europeans' willingness to give part of their income for environmental protection. An explicative model using multinomial regression method and data pooled from 22 European countries, three survey waves – 1990, 1999, and 2008/2009.

								95% Confidence Interval for Exp(B)	
		B	Std. Error	Wald	df	Sig.	Exp(B)	Lower Bound	Upper Bound
Don't know*	Intercept	-.438	.033	180.006	1	.000			
	2008-2009	-.006	.041	.021	1	.885	.994	.918	1.077
	1999-2001	-.552	.046	146.595	1	.000	.576	.526	.629
	1990-1993	0[a]	.	.	0	.	.	.	.
Strongly agree	Intercept	.934	.024	1498.992	1	.000			
	2008-2009	-1.262	.034	1407.824	1	.000	.283	.265	.302
	1999-2001	-1.009	.034	882.318	1	.000	.365	.341	.390
	1990-1993	0[a]	.	.	0	.	.	.	.
Agree	Intercept	1.752	.022	6263.276	1	.000			
	2008-2009	-.655	.028	538.771	1	.000	.519	.491	.549
	1999-2001	-.550	.029	356.484	1	.000	.577	.545	.611
	1990-1993	0[a]	.	.	0	.	.	.	.
Disagree	Intercept	.889	.024	1342.986	1	.000			
	2008-2009	-.232	.031	57.315	1	.000	.793	.747	.842
	1999-2001	-.196	.032	38.304	1	.000	.822	.773	.875
	1990-1993	0[a]	.	.	0	.	.	.	.

The reference category is: Strongly disagree. X^2= 2736.28, p=0.00; df=8; Nagelkerke =0.03, p=0.00
*'Don't know' and 'No Answer' are treated together. Cases are not weighted. Statistical Software: SPSS.

The first remark related to this model is that all coefficients are statistically significant and also the exponential value of each is within the 95% confidence interval. This means that Europeans' willingness to give part of their income for environmental protection has varied by time during the last two decades. The next question is how exactly this variation is manifested. Firstly, the coefficients related to the effect of time on the outcome variable are all negative, which means that it is less likely in 2008-2009 and 1999-2001 than in 1990-1993 the respondents will adopt the option 'Strongly Agree' versus 'Strongly disagree'. To avoid repetition, I will only add that the

same statement is valid regarding the category 'Agree' versus 'Strongly Disagree' and the category 'Disagree' versus 'Strongly Disagree'. These trends offer empirical support that the environmentalism is not a static phenomenon, but a dynamic one. Thus, the findings provide evidence in favor of adopting a longitudinal approach in analysing people's commitment to protecting the environment.

Therefore, the question is now what kind of aspects might be introduced into the model in order to understand these trends of Europeans' concern with the environment. The following discussion will present some other potential sources of explanation. I will first look at the variation given by country of residence. I will then pay attention to how the features of ecological citizenship can help explain Europeans' commitment to giving part of their income for the environment. Finally I will discuss the effect of income on people's concern with the environment.

Cross-country differences in Europeans' concern with the environment over the last two decades.
I have already shown in the previous chapter that there are differences between countries with regard to people's commitment to giving part of their income for the environment. The descriptive analysis indicates a particular behaviour of Nordic countries and ex-communist countries. Furthermore, contrary to the fact that the UK and Germany are the leading actors in the international environmental agreements, the proportion of people from these countries who express willingness to make financial sacrifices for the environment is lower than for other countries. In order to understand better these trends, further analyses are required. The following regression model controls for the effects of time as well as of the country of residence on Europeans' willingness to contribute part of their income to environmental protection. This gives a more robust test of these trends. The model treats the outcome variable as multinomial and calculates the odds of choosing a given category in contrast with the odds of choosing the category taken as reference. Thus, the model provides information for a given period of time and a specific country regarding the likelihood of strongly agreeing, agreeing or disagreeing to give part of the income for environmental protection rather than strongly disagreeing. Details about

this model are provided in Tables 22 and 23, Model 3. Since these differences between countries need to be understood in detail, additional models also consider as potential explanations individual-related determinants, such as the features of an ecological citizen and income. Further to this, in Chapter 7 models will be considered that incorporate country-level indicators, relating to economic wealth, the degree of democracy, and the environmental policy of a country.

6.3. Ecological citizenship and income as individual-level predictors of Europeans' willingness to give part of their income for environmental protection over the last two decades

The next models add the attributes of the individuals and their income as potential predictors of Europeans' willingness to make financial sacrifices for the environment. The aim is to examine whether the features of ecological citizenship explain the variation of the outcome variable. The within-country variability is taken into account by introducing an interaction term, computed using the variables 'survey wave' (e.g. time) and 'country'. This will control for the variation that may exist in a given country over the years 1990-2009 with regard to Europeans' commitment to protecting the environment. Sampling weights are included, in order to correct sampling errors.

As I showed in the introductory chapter and in Chapter 2, one of the key obstacles in caring about the environment is seen as being related to the national or individual wealth. However, I have tried to draw attention that such an idea starts from our views about the environment in itself, from how we define ourselves as human beings and how we articulate the relationship between us, as humans, and the environment. I suggested that the theory of ecological citizenship, introduced by Dobson, has the potential of bridging the opposition between anthropo-centrism versus eco-centrism as well as the differences between Dunlop's work on New Environmental Paradigm and the theory of Inglehart on post-materialistic values in approaching the public concern with the environment. This potential of ecological citizenship to peacefully connect the opposite approaches of "anthropo-centrism" – "eco-centrism" resides from its integrating the whole aspects of contemporary daily life, blurring the classical distinctions public-private, turning the attention from the hierarchical relationships citizens-state to the horizontal connections

between citizens, from the responsibility for the state to the responsibility for the others. In line with the debate described above, the question is also: "Does income impact the commitment of green citizens to protecting the environment? I will start this inquiry by mentioning that, to the best of my knowledge, Dobson does not use the words "income" or "wealth" or other similar terms in *articulating* the theory of ecological citizenship.

In order to answer this question, I introduce into the models a measure of the income status of the respondents. This measure has been harmonized by the GESIS institute to allow cross-country comparisons. There are missing cases and there is no data for Sweden, in 1990[12]. However, it constitutes the best available measure in the EVS longitudinal dataset and provides a measure of people's financial situation, at the time of the survey. For these reasons I include this measure in the explicative models. Therefore the following models refer to the variation across countries and over time with regard to people's commitment to giving part of their income for the environment, and disentangle the contribution of the features of ecological citizenship and income to this variation. It is worth mentioning that the variables "country", "time" and "country*time" are, in fact, country-level predictors, and therefore they contribute to the variation between countries relative to the outcome. The variables "time" and "country*time" are not random which raises the issue of fulfilling only partially the assumption of independent observations. However, I will keep them into the explicative models, in line with other studies that have been developed under the same approach, in order to have the same 'base' when contrasting the results with their results (Ester, Halman & Seuren, 1993; Inglehart, 1995; Gellisen, 2007; Franzen & Meyer, 2010). As I will detail later, I will control for these issues by calculating the predicted probabilities for various groups of people who reside in a given country and responded at a given survey wave, and using proper statistical tools for comparing these groups.

[12] GESIS –Leibniz Institute for the Social Sciences and Tilburg University are the official data repository coming from the European Values Study. They also process and provide documentation regarding all stand-alone or cumulative datasets of the EVS.

Table 22. Explaining Europeans' commitment to protecting the environment: accounting for individual-level predictors in a multinomial regression model. 22 countries, three survey measurements: 1990, 1999, 2008/2009.

	Model 3 (M3) *Country*Time*	***Model 4 (M4)*** *Country*Time Ecological Citizenship*	***Model 5 (M5)*** *Country*Time Ecological Citizenship Income*
Model Type	*Logit Multinomial*	*Logit Multinomial*	*Logit Multinomial*
Outcome	*environment (5)*	*environment (5)*	*environment (5)*
Predictors	*country (22)*	*country (22)*	*country (22)*
	time (3)	*time (3)*	*time (3)*
	*country*time (66)*	*country*time (66)*	*country*time (66)*
		equality vs freedom (4)	*equality vs freedom (4)*
		individualization (3)	*individualization (3)*
		control over life (3)	*control over life (3)*
		volunteering (2)	*volunteering (2)*
		attitudes towards	*attitudes towards*
		people in need (4)	*people in need (4)*
		trusting people (3)	*trusting people (3)*
		sense of belonging (5)	*sense of belonging (5)*
			*Household Income (3)**

*missing values not included into the analysis. The number of response categories for each variable in brackets.

Table 23. The goodness of fit of the multinomial explicative models of Europeans' commitment to protecting the environment using individual-level predictors.
22 countries, three survey measurements: 1990, 1999, 2008/2009.

	Model3 *Country*Time*	***Model4*** *Country*Time Ecological Citizenship*	***Model5*** *Country*Time Ecological Citizenship Income*
Model Type	*Logit Multinomial*	*Logit Multinomial*	*Logit Multinomial*
Number of cases	*88893*	*88893*	*72401*[13]
Log-Lik Full Model	*-118481.685*	*-115834.237*	*-92920.03*
Cragg & Uhler's R2 (Nagelkerke)	*0.142*	*0.195*	*0.202*

*Note: Cases are weighted. Statistical software: STATA.

If these models are compared using Nagelkerke R2 test, then Model 5 has greater explanatory power than Model 3. While Model 3 demonstrates that *there is* variation across countries and over time with regard to people's concern for the environment, the goodness-of-fit measures relative to Model 4 confirms, together with the p-value corresponding to each parameter, that the proxy variables related to the features of ecological citizenship have an effect on Europeans' commitment to protecting the environment. Model 5 is controls for income and, despite the differences between this and the previous model (missing values and no data for Sweden in 1990 relative to income), a value of 0.20 is reported for the Nagelkerke R2 test. This finding partially

[13] Although in theory it is recommended to compare only models having the same number of cases, in practice it is accepted such a procedure, if the appropriate test is used. In the case of multinomial models McFadden's Adjusted R2 and Negelkerke R2 are considered a good measure for deciding which model best fits data. Other measures related to the goodness of fit are given in, Table A.4.b, Appendix 4.

supports the idea that adding income to the explicative models offers a plausible analytical framework of Europeans' willingness to give part of their income for environmental protection. A full description of Model 5 is presented in Table A.4.1, Appendix 4. I have opted to fully interpret Model 5 by focusing mainly on the predicted probabilities and not on the singular effect of each predictor, considering that this directly addresses my research question The key difference between interpreting the explicative model by accounting for the conjugated effect of the predictors and not by considering the singular effect of an explanatory variable is related to a number of factors. At the theoretical level, the idea of ecological citizenship refers to a constellation of features *taken together*, not about a particular attribute, separated from the rest. At the analytical level, given the complexity of a multinomial regression model, it is generally advisable to make use of conditional probabilities, rather than formulating a statement regarding the effect of a particular explicative variable, which would refer to the entire sample, as a whole – in this case all 22 European countries taken together. In contrast, my aim has been to analyse public commitment to protecting the environment in a given country, but at the same time to put that public in the larger context of its country *and* in the context of other European countries. This is one of the advantages of a cross-country analysis in contrast with a country-by-country analysis. Moreover, contrasting the likelihood of agreeing to contribute part of the income for the environment between several groups can provides evidence regarding the contexts favorable for environmental commitment.

Ecological citizens

In order to clarify to what extent sharing the features of an ecological citizen can make a difference in expressing willingness to give money for the environment, I have calculated the predicted probabilities for each of seven groups or categories of people, across countries and/or over survey waves. Then, I contrasted between the predicted probabilities calculated for a given category using Bonfferoni method, which corrects for multiple comparisons (between countries or across survey waves). The first category, G1, is the one of an ecological citizen, as described by Dobson's theory: a person who gives priority to justice (equality), who is self-reliant (individualization and control over life), who acts for the benefit of the others without expecting

something in return from them (volunteering), who has compassion towards people in need, who pays attention to the horizontal relationships with his/her fellows, rather than to the hierarchical one with the state (societal trust), and shares a local and a global sense of belonging. The other groups created based on various critiques regarding ecological citizenship theory, those related to territoriality and the virtue of ecological citizenship (Mason, 2009; Hayward, 2006). Three groups (G2, G3, G4) are a variation of G1. For instance, the second and the third group (G2 and G3) include people having almost the same attributes as those in the first category, with the exception that they refer either to people sharing a global sense of belonging only (G2) or a national sense of belonging (G3). The fourth group (G4) is also quite similar to the first group, with the main difference being that it includes people who give priority to freedom rather than equality. The fifth, sixth and seventh groups (G5, G6, & G7) are opposite to the one of ecological citizens, varying only by their sense of belonging: local and global in the fifth group, global in the sixth, and national in the seventh. The attributes of these groups are presented in Table 24.

Table 24. The description of ecological and non-ecological citizens

Ecological citizen (G1)	***Pseudo Ecological citizen – Global (G2)***	***Pseudo Ecological citizen – National (G3)***	***Pseudo Ecological citizen – Freedom (G4)***	***Non-Ecological citizen - Local & Global (G5)***	***Non-Ecological citizen - Global (G6)***	***Non-Ecological citizen – National (G7)***
Equality	*Equality*	*Equality*	*Freedom*	*Freedom*	*Freedom*	*Freedom*
Individualization	*Individualization*	*Individualization*	*Individualization*	*Individualization*	*Individualization*	*Individualization*
Control over life	*Control over life*	*Control over life*	*Control over life*	*Control over life*	*Control over life*	*Control over life*
Volunteering	*Volunteering*	*Volunteering*	*Volunteering*	*NO Volunteering*	*NO Volunteering*	*NO Volunteering*
Positive attitudes towards poverty	*Positive attitudes towards poverty*	*Positive attitudes towards poverty*	*Positive attitudes towards poverty*	*Negative attitudes towards poverty*	*Negative attitudes towards poverty*	*Negative attitudes towards poverty*
Trust in people	*Trust in people*	*Trust in people*	*Trust in people*	*NO Trust in people*	*NO Trust in people*	*NO Trust in people*
Local and Global sense of belonging	*Global sense of belonging*	*National sense of belonging*	*Local and Global sense of belonging*	*Local and Global sense of belonging*	*Global sense of belonging*	*National sense of belonging*
Low Income	*Low Income*	*Low Income*	*Low Income*	*Low Income*	*Low Income*	*Low Income*

Note: Green colour highlights the attributes that are common to all seven groups or some of them.

Further, in order to clarify *how* the income shapes green citizens' willingness to give part of their income for the environment, I will consider only people with low income in the interpretation of this individual-level analysis. In other words, I will analyse how likely are green citizens with low income to share their commitment to protecting the environment and whether or not the primacy of green citizens in caring about the environment holds, when comparing with people from other categories, of those not sharing the features of an ecological citizen. Such a

categorisation that includes low income also helps in disentangling the components of outcome variables, which, as I have highlighted in Chapter 2, could be seen as a measure of 'willingness to give money' rather then 'willingness to protect the environment'. In other words, if the differences between ecological citizens and non-ecological citizens hold also in the context of a low income, then, this may confirm once more that the outcome variable refers to 'willingness to give part of the income *for environmental protection*', in addition to other aspect. Before proceeding it is worth mentioning that these estimations are made using the values of the coefficients and they do not directly depend on the number of people within each category. Furthermore, these estimations represent a detailed way of making inferences about the existence of a difference or another at the level of true population, if the confidence intervals are considered. The interpretation of the explicative model is structured as follows: I will briefly present the predicted probabilities calculated for each category of people, in each country, each survey wave, then I will refer to the overall findings. Instead of graphically presenting these estimates, which would require 22 graphs showing the value of the predicted probabilities corresponding to the seven categories of people, in each country over the three survey waves, I have opted for summarising the key findings in the main text of the chapter and summarizing some of them in Table 25 and Table 26. Table 25 presents the confidence intervals of the probability of strongly agreeing to give part of the income for the environment calculated for all seven groups.

Table 25: Confidence Intervals of the predicted probabilities to Strongly Agree to give part of the income for environmental protection. A multinomial regression model using individual-level predictors. Low household income. 22 Countries, 1990, 1999, and 2008/2009.

		Ecological Citizenship G1		EC, Global G2		EC, National G3		EC, Freedom G4		nonEC, Local&Global G5		nonEC, Global G6		nonEC, National G7	
West Germany	1990	.170	.228	.217	.297	.131	.175	.159	.213	.091	.125	.121	.172	.066	.089
	1999	.087	.177	.115	.230	.063	.131	.079	.161	.034	.074	.046	.101	.024	.051
	2008	.109	.183	.144	.241	.080	.136	.100	.168	.048	.085	.064	.117	.033	.059
Belgium*	1990	0.237	0.313	0.292	0.390	.187	0.249	0.222	0.295	0.133	0.182	0.172	0.241	0.098	0.134
	1999	0.245	0.316	0.299	0.391	0.195	0.252	0.230	0.297	0.133	0.179	0.169	0.235	0.098	0.132
	2009	0.147	0.206	0.184	0.263	0.114	0.160	0.137	0.192	0.081	0.116	0.104	0.156	0.059	0.085
Bulgaria	1991	0.435	0.522	0.502	0.604	0.373	0.452	0.420	0.507	0.322	0.399	0.388	0.485	0.262	0.326
	1999	0.269	0.360	0.332	0.444	0.215	0.289	0.254	0.341	0.152	0.214	0.196	0.281	0.112	0.158
	2008	0.293	0.372	0.357	0.458	0.241	0.306	0.281	0.358	0.199	0.259	0.254	0.338	0.156	0.200
Czech R.	1991	0.342	0.412	0.400	0.492	0.291	0.349	0.331	0.398	0.258	0.313	0.311	0.390	0.212	0.254
	1999	0.241	0.311	0.293	0.385	0.198	0.255	0.231	0.298	0.166	0.216	0.208	0.280	0.130	0.168
	2008	0.173	0.240	0.221	0.311	0.134	0.186	0.162	0.226	0.094	0.134	0.125	0.184	0.069	0.097

		Ecological Citizenship G1	EC, Global G2	EC, National G3	EC, Freedom G4	nonEC, Local&Global G5	nonEC, Global G6	nonEC, National G7
Denmark	1990	0.495 0.579	0.559 0.656	0.433 0.510	0.480 0.564	0.379 0.460	0.445 0.545	0.315 0.385
	1999	0.397 0.483	0.462 0.565	0.337 0.413	0.382 0.466	0.279 0.354	0.339 0.435	0.223 0.284
	2008	0.302 0.380	0.362 0.461	0.249 0.313	0.288 0.363	0.193 0.254	0.241 0.325	0.149 0.195
Estonia	1990	0.300 0.384	0.358 0.466	0.247 0.321	0.288 0.369	0.209 0.275	0.259 0.351	0.164 0.218
	1999	0.087 0.154	0.116 0.206	0.065 0.116	0.081 0.143	0.045 0.082	0.061 0.114	0.032 0.058
	2008	0.101 0.155	0.130 0.204	0.077 0.119	0.094 0.145	0.055 0.087	0.073 0.119	0.040 0.062
Finland	1990	0.273 0.374	0.333 0.453	0.220 0.305	0.258 0.355	0.155 0.227	0.197 0.291	0.115 0.170
	2000	0.132 0.201	0.170 0.261	0.101 0.154	0.122 0.187	0.068 0.109	0.091 0.149	0.049 0.078
	2009	0.076 0.135	0.102 0.182	0.055 0.099	0.069 0.124	0.033 0.063	0.046 0.088	0.023 0.043
France	1990	0.258 0.346	0.316 0.423	0.206 0.280	0.243 0.328	0.150 0.211	0.192 0.273	0.112 0.158
	1999	0.226 0.303	0.279 0.377	0.176 0.237	0.209 0.282	0.109 0.155	0.139 0.205	0.079 0.111
	2008	0.199 0.266	0.245 0.334	0.156 0.209	0.185 0.249	0.106 0.148	0.135 0.195	0.078 0.107
Hungary	1991	0.313 0.402	0.378 0.488	0.253 0.329	0.296 0.383	0.189 0.253	0.239 0.328	0.142 0.191
	1999	0.208 0.298	0.256 0.370	0.163 0.237	0.194 0.280	0.107 0.162	0.136 0.213	0.078 0.118
	2008	0.201 0.276	0.251 0.348	0.157 0.216	0.187 0.258	0.107 0.152	0.138 0.203	0.078 0.110
Iceland	1990	0.232 0.331	0.283 0.403	0.190 0.272	0.221 0.316	0.155 0.230	0.195 0.293	0.120 0.180
	1999	0.137 0.206	0.173 0.264	0.106 0.160	0.127 0.193	0.079 0.124	0.104 0.166	0.059 0.091
	2009	0.101 0.170	0.132 0.222	0.077 0.129	0.094 0.158	0.054 0.094	0.072 0.129	0.039 0.067
Ireland	1990	0.205 0.283	0.254 0.353	0.164 0.227	0.194 0.269	0.125 0.179	0.160 0.235	0.094 0.135
	1999	0.127 0.204	0.163 0.263	0.097 0.157	0.118 0.191	0.069 0.116	0.091 0.157	0.050 0.084
	2008	0.159 0.261	0.209 0.338	0.121 0.202	0.149 0.246	0.083 0.144	0.112 0.198	0.059 0.104
Italy*	1990	0.236 0.308	0.289 0.382	0.189 0.249	0.223 0.293	0.148 0.200	0.190 0.262	0.113 0.152
	1999	0.157 0.215	0.197 0.276	0.124 0.170	0.148 0.204	0.096 0.134	0.125 0.180	0.072 0.100
	2009	0.213 0.291	0.265 0.366	0.170 0.234	0.202 0.277	0.134 0.189	0.174 0.250	0.102 0.143
Lithuania	1990	0.294 0.378	0.354 0.463	0.239 0.314	0.281 0.362	0.199 0.264	0.251 0.342	0.154 0.207
	1999	0.049 0.118	0.069 0.164	0.034 0.084	0.044 0.107	0.020 0.052	0.029 0.074	0.014 0.035
	2008	0.060 0.110	0.083 0.154	0.043 0.080	0.055 0.101	0.028 0.052	0.040 0.077	0.019 0.036
Netherlands	1990	0.363 0.454	0.425 0.532	0.308 0.388	0.350 0.438	0.262 0.339	0.317 0.414	0.211 0.274
	1999	0.200 0.278	0.246 0.345	0.162 0.224	0.190 0.264	0.128 0.184	0.163 0.238	0.098 0.140
	2008	0.110 0.167	0.141 0.217	0.084 0.127	0.102 0.155	0.059 0.092	0.078 0.125	0.043 0.066
Poland	1990	0.342 0.431	0.405 0.513	0.286 0.361	0.328 0.415	0.226 0.296	0.279 0.372	0.177 0.231
	1999	0.220 0.307	0.272 0.381	0.176 0.247	0.208 0.291	0.135 0.194	0.173 0.254	0.102 0.146
	2008	0.085 0.144	0.114 0.195	0.063 0.107	0.078 0.134	0.042 0.073	0.058 0.104	0.030 0.051
Portugal	1990	0.515 0.604	0.581 0.679	0.451 0.536	0.500 0.589	0.386 0.470	0.453 0.555	0.319 0.392
	1999	0.059 0.140	0.079 0.185	0.044 0.106	0.055 0.130	0.032 0.078	0.044 0.108	0.023 0.056
	2008	0.092 0.188	0.125 0.252	0.067 0.141	0.085 0.175	0.043 0.094	0.060 0.132	0.030 0.066
Slovak R.	1991	0.312 0.396	0.373 0.479	0.258 0.331	0.299 0.381	0.216 0.281	0.269 0.359	0.169 0.221
	1999	0.240 0.318	0.296 0.395	0.191 0.254	0.226 0.300	0.135 0.185	0.172 0.244	0.100 0.137
	2008	0.165 0.252	0.211 0.325	0.127 0.197	0.155 0.239	0.088 0.142	0.117 0.193	0.064 0.103
Slovenia	1992	0.290 0.375	0.346 0.451	0.245 0.316	0.280 0.363	0.217 0.286	0.266 0.357	0.177 0.232
	1999	0.209 0.300	0.256 0.368	0.172 0.248	0.200 0.288	0.149 0.219	0.187 0.279	0.118 0.174
	2008	0.199 0.279	0.243 0.345	0.163 0.228	0.190 0.267	0.138 0.198	0.173 0.253	0.108 0.155
Spain	1990	0.339 0.410	0.404 0.496	0.279 0.338	0.322 0.392	0.218 0.271	0.272 0.349	0.168 0.207
	1999	0.166 0.249	0.210 0.316	0.130 0.197	0.156 0.235	0.094 0.146	0.123 0.195	0.069 0.108
	2008	0.171 0.250	0.217 0.318	0.134 0.197	0.161 0.236	0.096 0.145	0.126 0.194	0.071 0.107
Sweden*	1999	0.299 0.378	0.355 0.455	0.248 0.314	0.286 0.361	0.190 0.252	0.233 0.318	0.147 0.196
	2009	0.213 0.287	0.267 0.364	0.166 0.226	0.200 0.270	0.119 0.167	0.156 0.226	0.087 0.122
UK*	1990	0.202 0.275	0.250 0.345	0.161 0.220	0.191 0.261	0.127 0.177	0.164 0.233	0.096 0.133
	1999	0.101 0.161	0.134 0.215	0.076 0.121	0.094 0.149	0.052 0.085	0.071 0.119	0.037 0.060
	2009	0.102 0.159	0.135 0.212	0.077 0.119	0.095 0.147	0.051 0.081	0.069 0.114	0.036 0.057
Austria	1990	0.239 0.315	0.296 0.395	0.189 0.251	0.225 0.298	0.132 0.182	0.171 0.242	0.098 0.133
	1999	0.129 0.202	0.166 0.261	0.098 0.155	0.119 0.188	0.063 0.103	0.083 0.139	0.045 0.073
	2008	0.172 0.243	0.219 0.313	0.131 0.185	0.159 0.225	0.082 0.120	0.107 0.164	0.058 0.085

*Mlogit, Nagelkerke R-square=0.20. Reference Category: Strongly Disagree. Cases are weighted. Software: STATA
**Blue colour highlights confidence intervals that overlap with those relative to people sharing the features of Ecological Citizenship.
***Red colour highlights significant differences over time at the level of true population, relative to the category of people sharing the features of ecological citizenship.

Differences between green citizens and non-green citizens.

Firstly, among all seven categories, people sharing the features of ecological citizenship (G1) and those sharing almost the same attributes but expressing a supra-national sense of belonging (G2) have the highest estimated probabilities of strongly agreeing that they are willing to give part of their income for the environment, compared to other categories. This finding applies to all countries included into the analysis, in all survey waves, and already provides evidence in favour of the idea that green citizens exist in Europe. Given the fact that the confidence intervals of these estimates overlap when comparing the categories G1-G2, G1-G3, G1-G4, in each country, each survey wave, it can be said that the differences between these groups might not be found at the level of population. In most of the countries, the same applies when comparing between G1-G6. However, there are still clear differences when contrasting G1-G5 and G1-G7, two of the three opposing categories of citizens to G1. Firstly, such findings support the idea that people sharing the features of ecological citizenship are more committed to pay for environmental protection than those not sharing these attributes. Further, it shows that this willingness of green citizens is expressed regardless their low-income status.

It is important to note the role of supra-national sense of belonging. The predicted probabilities to strongly agree to give part of the income for the environment, calculated for the category of green citizens (category G1) are not statistically different than those calculated for the categories of people sharing a supra-national sense of belonging, namely the categories G2 and G6. However, there are clear differences between green citizens and the other two types of non-green citizens (G5 and G7). The results contributes to the debate regarding the non-territorial character of ecological citizenship (Dobson, 2006, 2007; Mason 2009), by providing empirical evidence that people sharing a national sense of belonging are less likely to express their willingness to give part of their income for the environment *only when* other attributes are added to their individual profile: not trusting in people, not volunteering, considering that poverty has mainly individual-related causes, giving importance to people's freedom rather than to the equality between people. Such results also bring new understandings regarding contemporary

changes in the practices of citizenship, as shown by some political theorists (Nyers, 2004; Ong, 2006, Miller, 2011).

In addition, the results show that the preference given to equality rather than to freedom can increase the chances of individuals being willing to make financial sacrifices for the environment. However, because the predicted probabilities calculated for the categories (G1) and (G4) have confidence intervals that overlap, such statement appears to be valid only when other conditions are met, namely related to trusting people, sharing compassion, and volunteering. The differences between (G1) and (G5) support this statement.

These results provide evidence that the attributes of an ecological citizen are key in explaining public environmental commitment. They demonstrate that the framework of ecological citizenship can help in identifying the nuanced contexts in which environmental commitment can emerge. The results show that it is not only simply about contrasting two aspects that can either increase or decrease the likelihood of expressing environmental commitment, even when this is done in a particular country at a given point in time. Instead, it is important to account for a series of personal attributes taken together, as the theory of ecological citizenship suggest. However, the empirical results put the current critique of ecological citizenship theory in a different perspective and also invite for a reconsideration of Dobson's views regarding particular aspects such as sense of belonging. It appears that a local and global sense of belonging can introduce a difference between those giving priority to equality rather than to freedom only when this is accompanied by altruistic behaviours such as volunteering, compassion and predisposition to trust people.

To summarize, people who give priority to equality rather than to freedom, who perceive they have control over their lives and consider it is the responsibility of the individuals to provide for themselves, who are able to share an understanding for people in need and also volunteer, who trust people and share a local and global sense of belonging – these kind of people are more likely to express commitment to making financial sacrifices for the environment than those who share a personal profile consisting of a series of opposite attributes *taken together*: value freedom more

than equality, who do not volunteer, who do not trust people, but consider people live in need because of their laziness or just unluckiness. These findings are valid when controlling for time, country of residence, and income.

Differences over time.

The general trend has been that in all countries included into the analysis, the share of people strongly agreeing to give part of their income for environmental protection has decreased over time. This could be seen clearly from the descriptive analysis, as well as the explicative analysis, namely in the value of the parameters corresponding to each survey wave (not reported here), in the value of the constant term relative to the category strongly agree, and, subsequently, in the value of the predicted probabilities. This has been valid for all seven categories of people for whom the estimates have been calculated. However, in some countries, there are statistically significant differences between 1990 and 1999, but not between 1990 and 2009. In some others, there are not statistically significant differences between the first two survey waves, but between the last two. In other countries there are significant differences between the three survey waves, and in some other there are not any differences over the last two decades. These trends are presented in Table 26.

Table 26. Trends in the predicted probabilities of green citizens' commitment to protecting the environment, as confirmed by their confidence intervals. Multinomial regression model using individual-level predictors only. 22 Countries, 1990, 1999, and 2008/2009.

Changes over time in Ecological Citizens' commitment to giving part of their income for environmental protection			*No Changes over time in Ecological Citizens' commitment to giving part of their income for environmental protection*
1990≠1999 ≠2008	**1990 ≠ 1999=2008**	**1990=1999 ≠ 2008**	**1990=1999=2008**
Denmark *Netherlands* *Poland* *Czech Republic* *Sweden*[a]*	Austria *Bulgaria* *Estonia* *Finland* *Hungary* *Iceland** *Ireland* *Italy** *Lithuania* *Portugal* *Spain* *United Kingdom**	Belgium* *Slovak Republic* *Slovenia*	France *West Germany*

*In survey wave 2008-2009, data was collected in 2009 for these countries.

(a) No estimations for Sweden in 1990. The trend is relative to 1999 and 2009, for this country.

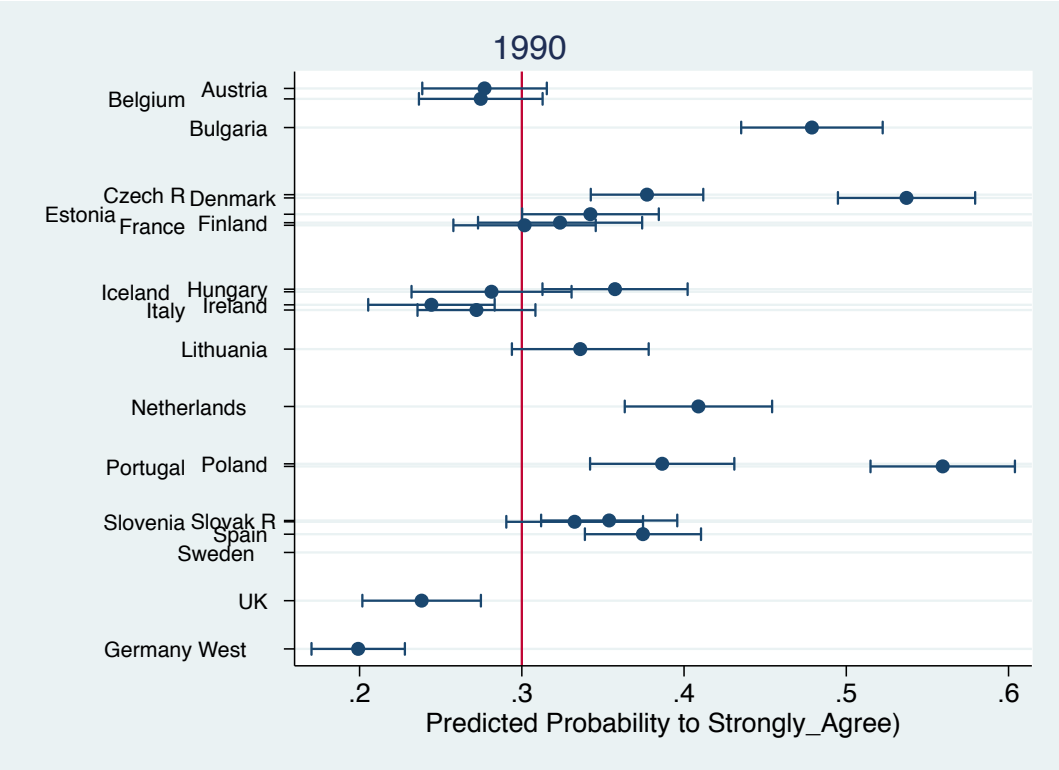
Differences between countries.

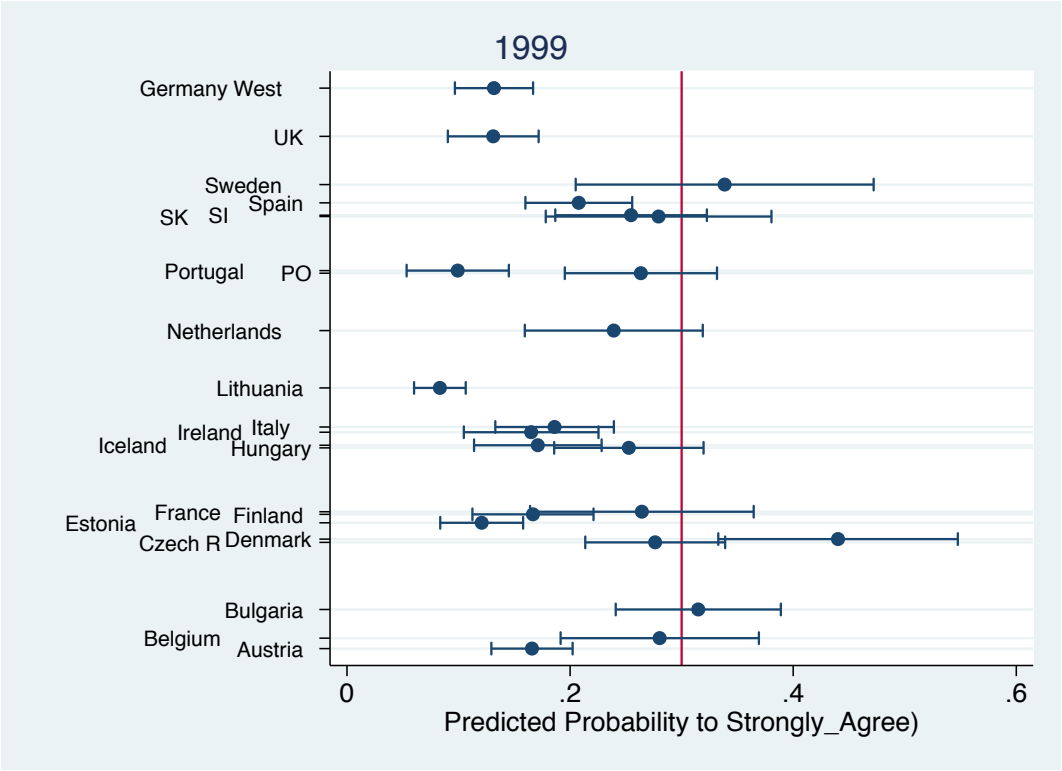
It is worth referring to the differences between European countries included into the analysis with regard to the willingness of green citizens with low household income to give part of their income for environmental protection. Taking into account the confidence intervals presented in Table 26, it can be said that there are some clusters of countries that have predicted probabilities within intervals that overlap each other. In order to report the results in a clearer way, I will refer to countries rather than to individuals who live in these countries, share the features of ecological citizenship, have low household income and strongly agree to give part of their income for environmental protection.

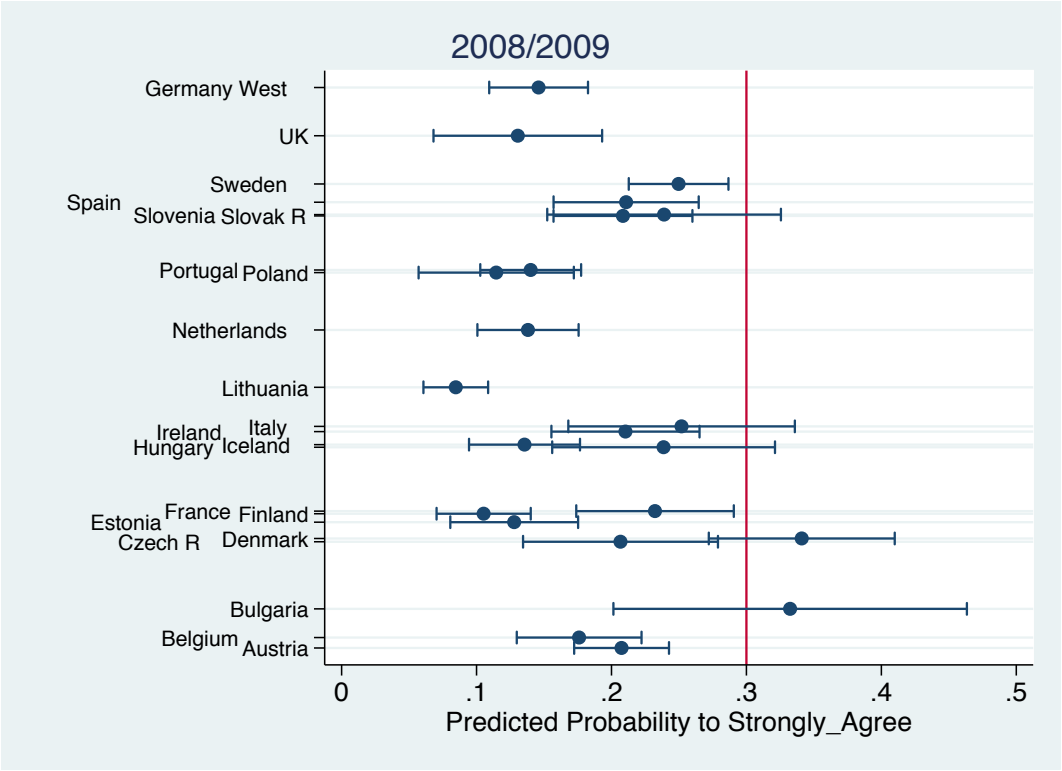
For instance, Figure 2 shows that the differences between Germany, Ireland and the UK do not appear to be statistically significant, in 1990.[14] The same can be said about the differences between Belgium, Italy, Austria, and Iceland. In addition, the differences between some of the countries from the first group, namely Ireland and the UK, and the countries from the second group are not statistically significant. Also, some countries from the second cluster are not significantly different than those from the third cluster, that including the Czech Republic, Estonia, Hungary, Lithuania, Poland, Slovak Republic, Slovenia, Finland France, and Spain. The differences between the Netherland and countries from the third group, but also the one including Bulgaria and Denmark, are not statistically significant.

[14] The order of countries presented in Figures 2-4 does not have any particular meaning. The comparison is made with regard to whether the confidence intervals of the predicted probabilities overlap.

Figure 2-4: The differences between European countries with regard to the predicted probabilities to strongly agree to give part of the income for environmental protection, calculated relative to people sharing the attributes of green citizens and low household income, in 1990, 1999 and 2008/2009.







In 1999, there are two main clusters, quite well defined. Firstly, there is the group of Austria, Finland, France, Germany, Iceland, Ireland, Italy, Lithuania, Poland, the UK, and Spain. In addition to this is the group of Belgium, Bulgaria, Czech Republic, Hungary, the Netherlands, Portugal, Slovak Republic, and Slovenia. Although Italy and Spain are in the first group, they are very

distinctive than the countries from the second group. The same applies to Belgium, Bulgaria, Czech Republic and Slovak Republic with regard to how much their profile might be different than that of Sweden. Although Sweden has a high position in the hierarchy of countries that share a considerable public environmental commitment, the only country with a significantly different profile in this survey year seems to be Denmark.

In 2008/2009, the differences between Bulgaria and Denmark do not appear to be significant. The predicted probabilities of their citizens to strongly agree to give part of the income for the environment are higher than those of citizens from all the other countries. Then, there are two other groups: The first consists of Germany, Belgium, Estonia, France, Ireland, Lithuania, Poland, Portugal, and the UK. The second consists of Austria, the Czech Republic, Finland, Hungary, Iceland, Italy, Slovak Republic, Slovenia, Spain, and Sweden. A number of countries from the first group do not appear to be distinctive from countries in the second group, namely Austria, Czech Republic, Ireland, Slovak Republic, and Spain. This shows that a process of homogenization has taken place over the last two decades with regard to the European citizens' commitment to giving part of their income for the environment.

6.3. Discussion.

The findings achieved through this analysis have multiple facets. First of all, regardless the variation between and within countries, people expressing the features of an ecological citizen are more likely to express willingness to give part of their income for environmental protection than people who do not share this set of attributes. This finding remains valid for green citizens with a low household income. This is a key research finding and empirically supports decades of work of green political theorists. I would only add to this that Andrew Dobson started to articulate the theory of ecological citizenship at the beginning of this century and has developed it during the decade that followed. The analysis undertaken here refers to the macro-social context of 22 European countries over the period 1990-2009, capturing the same social settings in which Dobson has built his theory. The results obtained through this research provide empirical support

for the idea that what Andrew Dobson has seen as an "already in place" normative political project is neither an isolated case of few 'environmentalists' who are visible in public arena from time to time, nor an utopian idea developed separately from the 'real' or 'true' world. The empirical analysis employed here demonstrates that the processes of formation of green citizens are deeply anchored in European culture and that ecological citizenship is a salient phenomenon, which can offer a moderate and humanistic approach to environmental matters.

In all European countries included in the analysis, the variations over time show a declining trend with regard to the commitment of green citizens to giving part of their income for environmental protection. However, such variation *within* countries might not always be significant at the level of 'true' population. This is shown by the confidence intervals of the predicted probabilities to strongly agree to make financial sacrifices for the environment, calculated for the category of ecological citizens. Therefore it appears that some European countries share a distinctive profile compared with the 'general' decreasing trend of public commitment to environmental protection. This can be seen as an argument for taking seriously the idea that in certain European countries green citizens' willingness for protecting the environment has not varied over time and might be a mark of how stable the phenomenon of ecological citizenship is in these countries. Also, the comparisons across countries reveal a slight process of homogenization with regard to the positions of people from various countries in expressing their commitment to environmental protection. From at least four clusters of countries in 1990, to a maximum of three, but mainly two clusters in 2000 and 2009. This is a key finding that requires further attention in order to understand how these concomitant processes, one of differentiation and another one of homogenization can take place and what the reasons behind them are.

Furthermore, the differences *between* countries with regard to a strong commitment of people to contribute part of their income to environmental protection might not always be significant at the level of 'true' population. As could be seen, there are some clusters of countries that are not so much different from one another. Such clustering needs to be better understood. For example,

Germany exhibited a distinctive profile in 1990, but in the later years this differentiation did not appear to be statistically significant. Most of the ex-communist or ex-authoritarian countries included into the analysis grouped together in 1990, but displayed a similar profile with other well-established democracies ten or twenty years later, in 2000 and 2009. Denmark had a distinct profile in 2000, but in general, people from this country have shown the highest probability to strongly agree to give part of their income for environmental protection. Taking into account these results, two or three explanations can be considered regarding why such similarities or differences might occur. Firstly, the distinction between newly- and well-established democracies with regard to public commitment to making financial sacrifices for the environment only holds in the first years of democratization, but not ten or twenty years after a country has become democratic. Therefore it might be worth introducing into explicative models a measure related to the degree of democracy of a country, in order to clarify if and in what sense the political regime can make a difference in people's willingness to give part of their income for environmental protection. Secondly, although the variation within country might not be found at the level of the 'true' population, the fact that Germany had a singular position in 1990 and then, in 2000 and 2009 joined the rest of the European countries invites evaluation of the behaviour of this country over the period with regard to environmental policy. If the a higher level of environmental commitment over the years of Denmark, Bulgaria (in 1990 and 2009), and Sweden (only in 2000), it is taken into account then further information is needed in order to understand why people from these countries have expressed a higher commitment to protecting the environment. A country-level measure related to aspects of environmental governance and infrastructure might help to deepen knowledge regarding the variation between European countries of public concern with the environment. Thirdly, the process of homogenization that has taken place gradually from 1990 to 2009 is another finding that invites reflection. Whether this homogenization of Europeans' willingness to making financial sacrifices for the environment is due to economic context or due to other potential factors is a question that needs to be addressed. Hence, it might be valuable to introduce into the explicative models a measure related to the level of economic development of a country. Altogether, it has become worthful to control for the profile of the

country context in terms of democratic governance and environmental policy as well as the level of economic development in order to better explain Europeans' commitment to protecting the environment.

Although there are arguments in favour of contextualizing the attributes of the individuals into the larger realm of their country of residence, the most important knowledge achieved so far throughout this analysis is that Europeans' commitment to making financial sacrifices for protecting the environment can be explained by the features of ecological citizenship. This confirms the value of the theory of ecological citizenship in bridging the two separated worlds related to approaching environmental problems – the one that separates humans from the environment and the one that considers humanity as part of the environment; the one of anthropo-centrism, which promotes the primacy of economic in dealing with environmental issues and the one of eco-centrism, which advocates for prioritizing the environment first, as constitutive of the good of the humankind. As has been shown, the idea of ecological citizenship relies on justice, compassion, self-awareness, non-reciprocal responsibility towards the others, priority given to the horizontal relationships between fellows as well as on a local and local sense of belonging. These characteristics are far away from the primacy of the economic and, by such humanistic approach the two separated parties (anthropo- and eco-centrism) can be reconciled.

6.4. Conclusion.

This analysis demonstrates that public commitment to protecting the environment can be explained by a humanistic approach, integrating not only the persona, but also the others and the environment. Under this framework the very simple aspects of daily life are convergent: self-awareness and the individualization of persona are not in opposition with valuing equality, trusting people, sharing compassion and disposition to help, having roots in the immediate area of life and enlarging the horizons of the self to the whole world as a unitary place of living. While a high income status would empower such an integrative way of living and caring about the environment, it does not constitute an essential condition: as could be seen, people sharing these

features of ecological citizenship have expressed their commitment to environmental protection regardless of low income status. Consequently, the provide support for considering the theory of ecological citizenship as a third alternative to the two opposed approaches on public environmental commitment that have been developed over the last two decades. The first is Dunlap's New Environmental Paradigm, which contends that we are observing a significant rise in people's concern with the environment all around the globe, concern which is not consistently associated with individual wealth or national affluence (Dunlap and van Liere, 1978, 1984, 1992/2000). The second is the post-materialistic perspective, which advocates that environmental concern might be found amongst those people adopting post-materialistic values rather than in the case of those holding materialistic values (Ester, Halman & Seuren, 1993; Inglehart, 1995); under this perspective, individual wealth as well as national affluence are seen as significant predictors of pro-environmental attitudes (Gellisen, 2007; Franzen & Meyer, 2010).

Additionally, the findings contribute to the field of comparative environmental politics by providing empirical evidence that the idea of ecological citizenship is a well-grounded normative project within green political thought, capable of offering new perspectives on the debate over contemporary practices of citizenship, the challenges to democracy and its role in environmental protection (Heilbroner, 1974; Ophuls, 1977; Dobson, 1990; Goodin, 1992; Held et al. 1999; Perraton, 2003; Miller, 2000; Nyers, 2004; Ong, 2006). Therefore the findings demonstrate that re-considering the self, the others, and the environment opens the door to revitalize the role of the democratic state in environmental protection. The findings also signal the importance of analysing the phenomenon of ecological citizenship in the larger macro-societal, political and economic context of each country. As I have previously advocated, such an approach might *bridge* the field of green thought with that of human development sequence (Sen, 1999; Welzel, Inglehart & Klingemann, 2003).

The research also highlights the lack of interest of social scientists in designing systematic cross-country longitudinal research on public commitment to protecting the environment. As noted

earlier, continued uncertainty rgarding the willingness of the public to protect the environment and keeping the public separated from the processes of making decisions with regard to environmental matters could drastically limit any attempt of articulating *convergent* long-term environmental policies.

Chapter 7. Individual- and country-level predictors of Europeans' commitment to protecting the environment.

A cross-country longitudinal analysis over the years 1990-2009.

This chapter presents an integrative analysis of public commitment to giving part of the income for the environment, which accounts for both individual- and country-level predictors. As previously, at the individual level I make use of the theory of ecological citizenship developed by Andrew Dobson. At the country level I take into account the quality of democracy, the economic context of a country, and the national environmental policy. I mainly rely on using survey data, but I also consider official statistics published by the World Bank and various indices about democratic governance and climate change policy. The analysis is gradually developed, from the individual- to country-level explicative models. A new standalone dataset is created, by adding country-level measures related to democratic governance, economic development, and environmental policies to the European Values Study dataset (EVS). The first part of the chapter briefly introduces the new country-level variables and the rationale behind. The second part presents the models. The third part discusses the results. The chapter completes the empirical analysis and prefigures the conclusions of the thesis.

One of the arguments of my research has been that the international agreements on environmental issues, such as UNFCCC, Kyoto Protocol or the EU strategy on environmental matters are limited by the variation that already exists between countries with regard to their natural resources, their specific way of producing energy, their existent CO_2 emissions levels, their economic development as well as the degree of democracy and national environmental policy. With regard to the natural resources, some scholars argued that it is crucial to distinguish between various types of ownership related to their management – state owners, private owners or mixed – and they demonstrated there is a link between 'liberal market' versus 'coordinated market' and national environmental regulations (Lachapelle & Paterson, 2015). Other scholars have drawn attention to the importance of having an integrated approach or a system operator for various but related activities – for instance, a system operator for water and land use (Helm, 2015). Also, at the forefront of international negotiations on environmental matters is the issue of how much the national economy of a country can be affected by the measures taken for reducing the CO_2 emissions. For instance, the US has always avoided to take clear measures to reduce the CO_2 emissions; Canada formulated this concern with no hesitation in her 2012 withdrawal from

Kyoto Protocol, and the Nordic Countries commissioned various studies related to this concern, such as the 1996 report of the Nordic Group for Environment and Economics. The issues of 'differentiated integration' (Schimmelfenning et al., 2015) and the one of inconsistency of implementation practices regarding the environmental policies (Nilsson et al., 2012) constitute another set of challenges with regard to how the national environmental policies can fit well together and advance a common European environmental strategy. In addition to this, it has been shown that the democratic capital of a country has a significant effect on national climate change policies (Fredriksson & Neumayer, 2013). There are also studies demonstrating the existence of various degrees of democratisation in Europe (Alexander, Welzel & Inglehart 2008, 2011, 2012; Buhlman et al. 2011) and this will potentially maintain differences in national environmental policies and their convergence towards a common European environmental strategy.

As I have already pointed out, two approaches are evident, at the academic level: the first that aims at demonstrating the role of economic wealth as a precondition of public support for environmental protection (Ester, Halman & Seuren, 1993; Inglehart, 1995; Gellisen, 2007; Franzen & Meyer, 2010), and the second that tries to show that public commitment to protecting the environment is not directly related to economic wealth (Dunlap & van Liere, 1984; Dunlap, van Liere, Mertig & Jones, 2000; Dunlap & York, 2008). In order to contribute to this debate, the analytical framework I propose in this chapter accounts not only for the features of an ecological citizen, as individual-related features, but also for country-level indicators regarding the quality of democracy of a country, economic development and environmental policy in explaining Europeans' commitment to environmental protection. In other words, I put the personal attributes of the individuals and their willingness to give part of their income for environmental protection into the larger context of their country of residence with regard to how democracy works, how wealthy the country is, and the effects of the environmental policy of that country.

Country-level measures: why and how?

The process of deciding which country-level measures are to be included in the analysis has been similar to the selection of individual-level indicators used in the analysis presented in Chapter 6. Firstly, I have had to balance between whether or not the indicators provide information related to the aspects of interest and, if yes, their availability for the years 1990-2009. Secondly, I have had to consider how these indicators fit together into the analytical framework of the research in order to create a standalone data set that would allow for an integrative analysis. In order to identify these country-level variables, not only the academic literature has been reviewed (Etsy and al., 2005; Bernauer & Bohmelt 2013; Steves & Teytelboym, 2013), but also official statistics published by the World Bank, OECD, and Eurostat. To include information related to economic development of a country, I have firstly considered two measures that together could provide a convergent view: the Gross Domestic Product (GDP) per capita[15] and the Gross National Income (GNI) per capita[16]. Then I have considered the Human Development Index[17], which includes the GNI, but accounts also for access to education and life expectancy. However, I considered that the same value of any of most of these indices, such as GDP and GNI per capita, could have different meanings over time, and therefore I have searched for a measure that can account for such variation. The World Bank has adopted a historical view of classifying countries by their income (GNI per capita in US dollars), and this approach accounts exactly for the fact that the threshold of including a country in one category or another (say "high income country") has changed over time. For instance, the threshold of considering that a country belongs to the category 'high-income countries', was '>7,620', in 1990. The threshold increased to '>9,265', in 1999, then to '>11, 905' in 2008 and to '>12, 195' in 2009. These values refer to US $. I have decided to include this measure into the final models, due to its quality of providing more meaningful information regarding the level of economic development of a country at different points in time.

[15] GDP is defined by the World Bank as "the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsides not included in the value of the products" divided by midyear population. Source of definition: http://data.worldbank.org/indicator/NY.GDP.PCAP.CD Accessed on 07 September 2016. Such a measure can provide an insight regarding the average income per person in a country in a given year, and it is calculated in US dollars.

[16] The World Bank defines GNI as "the sum of values added by all resident producers plus any products taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad". It is calculate din US dollars. Source of definition: http://data.worldbank.org/indicator/NY.GNP.PCAP.CD Accessed on 07 September 2016.

[17] HDI is constructed by the United Nations. Source: http://hdr.undp.org/en/data. Accessed on 07 September 2016.

With regard to selecting an adequate measure of the quality of democracy, I have considered the Effective Democracy Index (Alexander, Welzel & Inglehart 2008, 2011, 2012) and the Democracy Barometer (Buhlman et al. 2011) from various indices that exist in the literature. I have chosen to use into the explicative models the Democracy Barometer because of its long-term coverage (1990-2012), which overlap with the period of my study (1990-2009), and includes not only a description of the constitutive items, but also a comprehensive measure for each country[18]. Initially this index was used in its original form, as a continuous variable (minimum=45 & maximum=74) for the countries included into the analysis), but the final models include a version of the measure that comprises three equal intervals (45-54; 55-64; and 65-74). Although such a categorisation could raise a certain degree of disapproval, due to the fact that some western countries could be found in the lowest category, which contrasts with their long democratic tradition, I have opted to use the categorical measure in order to simplify the comparisons between countries.

Then, in order to identify a measure related to the environmental policy of a country I have selected the Climate Change Cooperation Index (Bernauer & Bohmelt 2013), not only because of its longitudinal approach, but also because of its detailed assessment of the behaviour of a country in environmental international agreements with regard to signing and ratifying the UNFCCC and Kyoto Protocol, reporting to the UN about the environmental measures that have been taken, and about reducing the CO2 emissions. Retaining its initial structure, I have adjusted this index with the aim of accounting for whether or not a given country produces part of its electricity through nuclear power, and consequently can keep a low level of CO2 emissions. If in the case of the GDP, HDI, and Quality of Democracy Index a high measure would be preferable, in the one of the Adjusted Climate Change Cooperation Index (A3CI), a lower value would express a better care for the environment at the level of national policy.

[18] I have used the dataset "DB_dataset_allcountries_standardizeddata.xlsx", accessed in July 2015, from the website: http://democracybarometer.org/dataset_en.html

Methodological challenges

When applying the selection criteria for these country-level measures, a number of issues have arisen. Firstly, various indicators related to economic development of a country, such as GDP or GNI, are not available for the years 1990, 1991 and 1992 in countries that had a different constitutional status at that time. This is the case of Hungary in 1990, Estonia and Slovenia, for the years 1990-1994, and Lithuania (1990-2003) with regard to GDP per capita. Then, the Quality of Democracy index is not available for Estonia in 1990, or in a year close to 1990, or for the Slovak Republic in either 1990 or 2008. Furthermore, in the case of the Climate Change Cooperation Index I did not have available a measure for the years 1990 to 1993, given that the UNFCCC was opened for signature in June 1992 and the Kyoto Protocol opened in 1998, respectively. Alternatively, in order to be able to undertake longitudinal analysis for the whole period 1990 to 2009, I opted for an approximate measure related to environmental policy, which accounts only for CO_2 emissions (metric tonnes per capita) and it is adjusted for the percentage of electricity produced by a country using nuclear power. For example, France had a level of 6.2 metric tonnes of CO2 emissions per capita in 1999, but 76.4% of the energy was generated by nuclear power, which does not give rise to carbon emissions, but represent an environmental risk; consequently, the final score will be [6.2/(100-76.4)]. The resulting index of national environmental policy, named "the CO_2 Emissions Index Adjusted" (CO_2A) takes values from 4.2 to 26.7. These are recoded into three categories ($\leq$10, 11-20, $\geq$21), in order to maintain the same categorical measurement, as for the other country-level variables. Similar to the A3CI, a low value shows a low level of CO2 emissions.

It is worth mentioning that the information related to the percentage of electricity produced through nuclear power was compiled from the website of the International Atomic Energy Agency (IAEA), but only for the years 1990, 2000 and 2010[19]. Subsequently, I constructed the index based on the statistics for these given years, although the individual-level data has been collected mainly in 1990, 1999, and 2008/2009. However, country-level measures regarding the Quality of

[19] http://www-pub.iaea.org/MTCD/publications/PDF/rds2-35web-85937611.pdf. Document accessed in summer 2015.

Democracy and Country-Income are taken from the same year when the EVS survey data was collected. Only in exceptional circumstances, when a country-level measure was unavailable for a given country, exactly in the year of interest, has the value corresponding to the nearest year been used. As a result of these data limitations, some countries included in the individual-level analysis were excluded from the first set of models that contain GDP and HDI (mainly Estonia, Lithuania, the Slovak Republic and Slovenia), but included when using the World Bank's country-income classification. The only country for which I could not find any solution in order to be included in the integrative analysis is Slovakia. With regard to the possibility of undertaking a longitudinal approach, priority has been given to the analysis regarding the period 1990-2009, which means that the final models include the Estimated Climate Index, as a measure related to national environmental policy. In this chapter, I present only those models that include country-level measures allowing for a cross-country longitudinal approach.

7.1. The integrative analysis.

A series of multinomial regression models have been estimated, comprising of 21 countries for the survey waves 1990, 1999 and 2008/2009. As previously, the outcome variable is the willingness to give part of the income for environmental protection, taking values from "Strongly Agree", "Agree", "Disagree", to "Strongly Disagree", plus the response categories "Don't know" and "No Answer" (combined together). The variables introduced into these models are presented in Table 27. The aim of estimating various models has been to compare the benefit of using one predictor or another. Therefore, I have started from the baseline model (containing only the outcome variable), then, in Model 2 I have controlled for the variation of the outcome given by country, time, and the interaction between these two variables, while in Model 3 I have introduced the individual-level predictors (those related to the proxies of the features of an ecological citizen). Model 4 contains only country-level predictors and Model 5 accounts for both individual- and country-level predictors.

Table 27. Explaining Europeans' commitment to protecting the environment: accounting for individual-level only, country-level only, individual- & country-level predictors in a multinomial regression model. 21 countries, three survey measurements: 1990, 1999, and 2008/2009.

	Baseline *Model 1 (M1)*	***Baseline*** *Model 2 (M2) Country*Time*	***Model 3 (M3)*** *Country*Time Individual-Level Predictors*	***Model 4 (M4)*** *Country*Time Country-Level Predictors*	***Model 5 (M5)*** *Country*Time Individual & Country-Level Predictors*
Model Type	*Logit Multinomial*	*Logit Multinomial*	*Logit Multinomial*	*Logit Multinomial*	*Logit Multinomial*
Outcome	*environment (5)*	*environment (5)*	*environment (5)*	*environment (5)*	*environment (5)*
Predictors		*country (21)* *time (3)* *country*time (63)*	*country (21)* *time (3)* *country*time (63)* *equality / freedom (4)* *individualization (3)* *control over life (3)* *volunteering (2)* *attitudes towards people in need (4)* *trusting people (3)* *sense of belonging (5)*	*country (21)* *time (3)* *country*time (63)* *Democracy (3)* *Country Income (3)* *CO2 emissions (3)*	*country (21)* *time (3)* *country*time (63)* *equality / freedom (4)* *individualization (3)* *control over life (3)* *volunteering (2)* *attitudes towards people in need (4)* *trusting people (3)* *sense of belonging (5)* *Democracy (3)* *Country Income (3)* *CO2 emissions (3)*

Note: the number of response categories that a variable has is indicated in parentheses.

The values that can be taken by the three country-level variables are the following. Quality of Democracy Index: 1 = from value 45 to 54; 2 = from value 55 to 64; 3 = from 65 to 74. Economic Development: 1 = Lower Middle Income; 2 = Upper Middle Income; 3 = High Income. CO_2 emissions Adjusted: 1 = $\leq$10; 2 = from 11 to 20; 3 = $\geq$21.

The goodness of fit of all five models has been compared and some of these measures can be found in Table 28. A full description of the results is reported in Table A.4.3., Appendix 4. The reference model for comparisons is Model 2, not the threshold model, as is the norm. The reason for this is that Model 2 controls for the structure of data, while Model 1 treats data as a single sample of population. Therefore, I considered Model 2 as a threshold model firstly due to data structure *per se* and secondly because it is closer to the research objectives, which have the idea of difference behind, not the one of equivalence.

Table 28. The goodness of fit of various multinomial explicative models of Europeans' commitment to protecting the environment using individual and/or country level predictors. 21 countries, three survey measurements: 1990, 1999, and 2008/2009.

	Baseline Model 1 (M1)	**Baseline** Model 2 (M2) Country*Time	**Model 3 (M3)** Country*Time Individual-Level Predictors	**Model 4 (M4)** Country*Time Country-Level Predictors	**Model 5 (M5)** Country*Time Individual & Country-Level Predictors
Model Type	Logit Multinomial	Logit Multinomial	Logit Multinomial	Logit Multinomial	Logit Multinomial
Number of cases	84917	84917	84917	84917	84917
Log-Lik Full Model	-118966.36	-112815.77	-110292.52	-112815.77	-110292.51
Cragg & Uhler's R2:	0	0.144	0.197	0.144	0.197

According to these statistical tests, mainly the Cragg & Uhler's R^2, the models that fit the data better are Model 3 and Model 5 (R^2=0.197). The R^2 of Model 2 and Model 4 are also similar (R^2= 0.14). This means that accounting for the differences between countries and over time explains 14% of the variation in Europeans' commitment to protecting the environment (Model 2 & Model 4). Adding the individual-level proxies of the features of an ecological citizen increases the amount of variance explained by 5% (Model 3). Introducing country-level measures related to the quality of democracy, economic development, and CO2 emissions does not increase the level of explanation of the variation in European public willingness to give part of the income for environmental protection (Model 5). However, what exactly Model 5 provides is that it controls for the profile of a country, as given by these country-level measures, and any conclusion relative to Europeans' environmental commitment accounts for the various country-profiles that exist at the European level. This is a valuable knowledge, mainly in light of the debate regarding the drivers of public concern with the environment and whether or not economic development has a decisive role in shaping public attitudes related to environmental protection. Considering the importance of the knowledge achieved through Model 5, I have chosen to further analyse the conjugated effect of the predictors included into this model on the outcome variable. The entire explicative model is given in the Table A.4.4., Appendix 4.

As in the previous chapter, I calculated the predicted probabilities to strongly agree to give part of the income for the category of people sharing the features of an ecological citizen and I contrasted them with other six categories of people, of those who share partially or who do not share at all the features of an ecological citizen. These categories were presented in Table 24. The

difference is that now I added the characteristics of the country, as given by the quality of democracy, economic development and CO2 emissions, to these categories. In other words, I put all these seven categories of people into the larger context of the profile of their country of residence. This represents exactly the answer to the second question of this research, as presented in the introductory part.

7.2. The underlying structure of data.

When accounting for the profile of a country, measured according to her quality of democracy, economic development and CO2 emissions, a number of groups of countries or clusters are observed and, in a way, this enables the possibilities of contrasting between- and within-countries with regard to the predicted probabilities of strongly agreeing to give part of the income for environmental protection. Because each country-level variable has three categories, the number of possible combinations is equal to 27. Of course, not all possibilities or table cells are filled, but this represents the range of potential country profiles. There are also countries that have not undergone any changes in their profile over the period 1990-2009, or countries that have had the same profile at each survey wave or measurement. This means that it is possible for a country to have a profile say "2x1x3" at time 1 (1990), to change her profile, say to "2x2x3", in 1995, (which does not represent a year of survey measurement), but to return to the initial profile at the next survey measurement, in 1999. I could not account for such macro-social changes in the explicative models presented in this chapter. However, they represent salient phenomena and one could consider that they can be found in the unexplained part of the variation of the outcome variable, which is the error term[20]. Table 29a shows the cluster of countries, as given by the quality of democracy, economic development and CO2 emissions. Before this, it is worth mentioning that while some countries have had a relatively stable profile, such as Austria, Denmark, West Germany, and France, other countries, mainly those belonging formerly to the communist bloc, but not only, have experienced variations in their profile for all three survey

[20] One can argue that it is advisable to use an interaction term between these variables, in order to control for the structure of data. Considering the fact that introducing such interaction would critically increase the number of parameters, I preferred to not do this, but to keep the interpretation of the model as simple as possible.

measurements (1990, 1999, and 2008) or for two of them (1990 to 1999 or 1999 to 2008). Consequently, this represents another source of variation for which I should account for in the explicative models, when possible.

Table 29a. The variation in the profile of European countries included into the explicative models, as given by the quality of democracy, economic development, and CO2 emissions.

		Quality of Democracy	Economic development	CO2 emissions Adjusted
No variation in survey measurements 1990, 1999, 2008				
Austria		*55-64*	*High*	*<10*
Denmark		*65-74*	*High*	*<10*
Germany West		*55-64*	*High*	*11-20*
France		*45-54*	*High*	*>21*
No variation in survey measurements 1990, 1999				
Italy		*55-64*	*High*	*<10*
Belgium		*55-64*	*High*	*>21*
Estonia		*45-54*	*Upper Middle*	*11-20*
No variation in survey measurements 1999, 2008				
Ireland		*55-64*	*High*	*<10*
Spain		*55-64*	*High*	*<10*
Portugal		*55-64*	*High*	*<10*
Sweden		*65-74*	*High*	*<10*
Netherlands		*65-74*	*High*	*<10*
Iceland		*65-74*	*High*	*<10*
Finland		*65-74*	*High*	*11-20*
Slovenia		*55-64*	*High*	*11-20*
Countries sharing variation over survey waves				
Bulgaria	*1990*	*45-54*	*Lower Middle*	*11-20*
	1999	*45-54*	*Lower Middle*	*<10*
	2008	*45-54*	*Upper Middle*	*<10*
Czech Republic	*1990*	*45-54*	*Lower Middle*	*11-20*
	1999	*45-54*	*Upper Middle*	*11-20*
	2008	*45-54*	*High*	*11-20*
Hungary	*1990*	*55-64*	*Upper Middle*	*11-20*
	1999	*55-64*	*Upper Middle*	*<10*
	2008	*55-64*	*High*	*<10*
Lithuania	*1990*	*45-54*	*Upper Middle*	*>21*
	1999	*45-54*	*Lower Middle*	*11-20*
	2008	*45-54*	*Upper Middle*	*<10**
Poland	*1990*	*45-54*	*Lower Middle*	*<10*
	1999	*55-64*	*Upper Middle*	*<10*
	2008	*45-54*	*Upper Middle*	*<10*
UK	*1990*	*45-54*	*High*	*11-20*
	1999	*55-64*	*High*	*11-20*
	2008	*55-64*	*High*	*<10*

*Lithuania closed its nuclear reactors at the end of 2009, due to EU pressures related to the fact that it is too old and therefore it requires a replacement. A new nuclear plant is due to be built. Because I could not anticipate how much of their energy will be produced by the new nuclear plant, I have had to accept a value of 0% for the year 2009. However, this radical drop has to be interpreted with caution.

While such categorization can offer an insight regarding the potential sources of variation of the outcome variable, it does not allow for a complete view related to how these countries differ from one another or how similar they are. For this reason, I rearranged them in Table 29b

according to how they group together. The table also shows those countries that share a distinct profile from the others, but with no variation over time of the three country-level indicators.

Table 29b. Clusters formed by the European countries included in the analysis, as given by the quality of democracy, economic development, and CO2 emissions.

	Quality of Democracy	*Economic development*	*CO2 emissions Adjusted*
Countries sharing a similar profile with the others, but with no variation over time			
No variation in survey measurements 1999, 2008	*65-74*	*High*	*<10*
Denmark *Sweden* *Netherlands* *Iceland*			
No variation in survey measurements 1999, 2008	*55-64*	*High*	*<10*
Austria *Ireland* *Spain* *Portugal*			
No variation in survey measurements 1999, 2008	*55-64*	*High*	*11-20*
Slovenia			
Germany West			
Countries sharing a distinct profile from the others, but with no variation over time			
No variation in survey measurements 1999, 2008	*65-74*	*High*	*11-20*
Finland			
No variation in survey measurements 1999, 2008	*45-54*	*Upper Middle*	*11-20*
Estonia			
No variation in survey measurements 1990, 1999	*55-64*	*High*	*>21*
Belgium			
No variation in survey measurements 1990, 1999	*55-64*	*High*	*<10*
Italy			
No variation in survey measurements 1990, 1999, 2008	*45-54*	*High*	*>21*
France			

These two tables have been presented with the aim of highlighting what exactly can be compared and under which circumstances. For instance, it is possible to compare the predicted probabilities of strongly agreeing to give part of the income for the environment between people from Austria and those from Bulgaria, but it is important to give attention to the fact that the profile of Austria has not changed over time and for the years 1999 and 2008 shared a similar profile with Ireland, Spain, and Portugal, while the profile of Bulgaria has drastically changed over time.

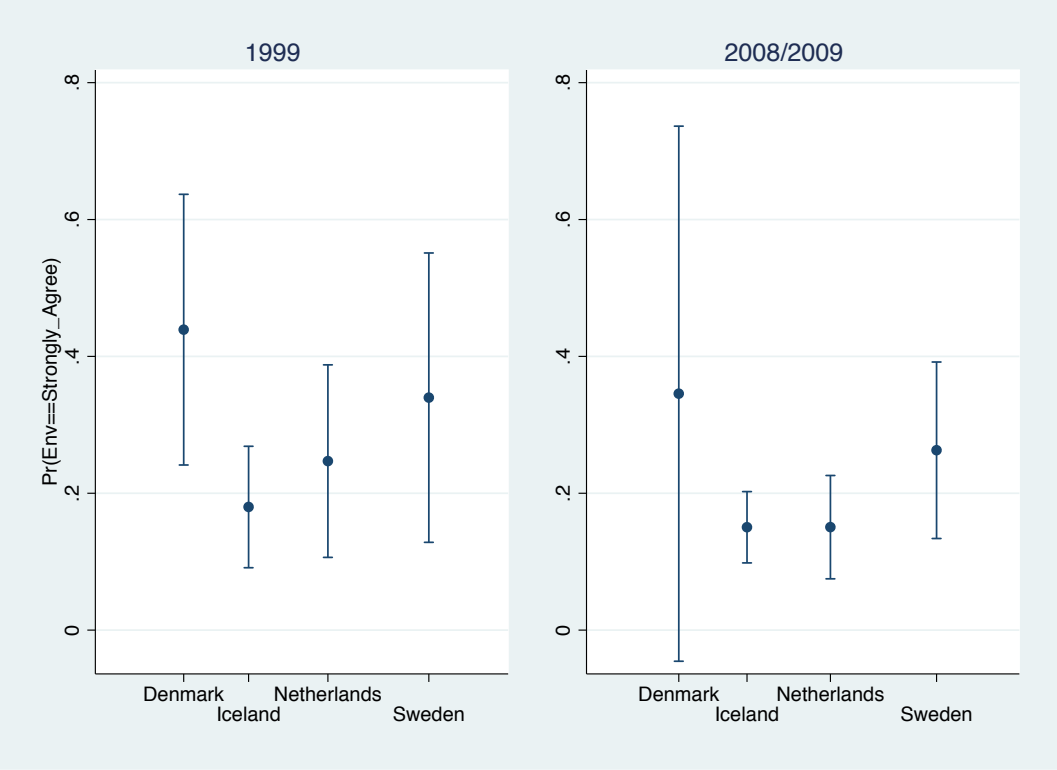
As previously, I will discuss the confidence intervals of these predicted probabilities, rather than the values of these probabilities, considering that if these intervals overlap, the differences between the conditional probabilities might not be found at the level of true population. I opted again for the Bonferroni method to contrast between these intervals, as it is the most appropriate method for comparing a small number of groups. Full details regarding the confidence intervals of the predicted probabilities calculated for all 21 countries, all 3 survey-waves, and all 7 categories

of people, are given in the Table A.4.5., Appendix 4, Here, the results are presented and interpreted as follows. Firstly, attention is given to the between-country variability, namely the differences or similarities between people from countries that belong to a cluster, with regard to the predicted probability of strongly agreeing to give part of the income for the environment. This can provide the opportunity of identifying a country that can be considered as an exemplar of that cluster of countries, if the predicted probabilities are similar at the level of true-population, according to their confidence intervals. Once an exemplar of that group of countries is identified, this allows for a concomitant focus on the within-country variability, namely the differences between people sharing the characteristics of an ecological citizen and those not sharing such features.

7.3. The between-country variability.

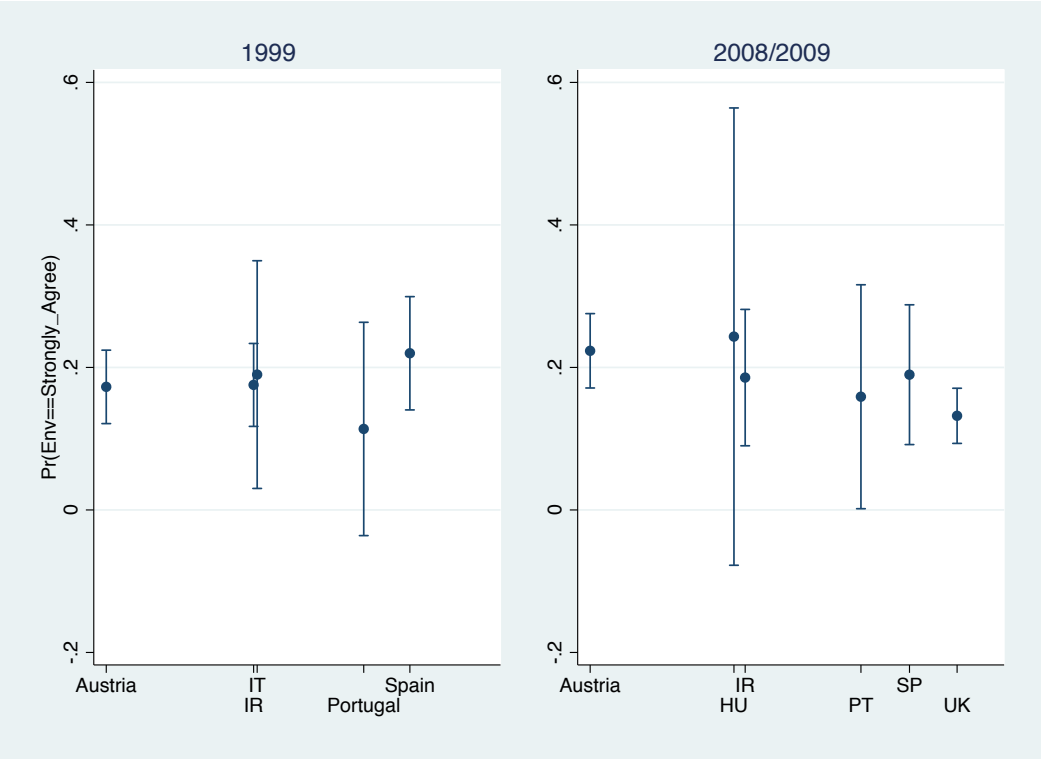
As discussed above, the first cluster of countries is the one comprising of Denmark, Iceland, the Netherlands, and Sweden. Denmark has not changed her profile over the years and people resident in this country have also shared one of the highest levels of commitment to giving part of their income for environmental protection in all survey waves, as shown in Chapter 6. While the status related to the CO2 emissions Index has changed both in Sweden and the Netherlands (sharing lower CO2 emissions), the one related to the quality of democracy has improved in Iceland. Denmark appears to be the exemplar of this cluster of countries, due to the stability of her profile. The following graphs confirms the first cluster of countries and draw attention to the fact that the differences between Denmark, Iceland, the Netherlands and Sweden with regard to the predicted probabilities of strongly agreeing to give part of the income for the environment, calculated for the category of people who share the features of an ecological citizen, are not statistically significant. The same applies when considering the differences over the two survey waves, which opposes the general trend, of a decrease of public willingness to give support for environmental protection.

Figure 5. The probability of strongly agreeing to give part of the income for the environment calculated for people sharing the features of an ecological citizen, residents in countries with a high quality of democracy, a high country-income and low level of CO2 emissions. The years 1999 and 2008.



The second cluster of countries refers to Austria, Ireland, Italy, Portugal and Spain, in the first instance. Austria is the representative country of this cluster, due to the stability of her profile over the three survey measurements. The rest of the countries shared this profile only for the years 1999 and 2008/2009. Two other countries joined the cluster in the survey wave 2008/2009, namely the UK and Hungary, although previously the UK was closer to the Germany profile and Hungary shared a distinctive profile, namely a medium-level quality of democracy, upper middle country-income, and low CO_2 emissions. Figure 6 confirms not only the similarities between these countries, but also the fact that the decrease over time in the predicted probability to strongly agree to give part of the income for the environment might not be found at the level of true population, because the confidence intervals calculated for these predicted probabilities in survey wave '1999' and '2008/2009'overlap. In other words, the observed change over time is not significant, which can be seen as a confirmation that the green citizens' commitment to protecting the environment is a stable phenomenon, in these four countries, over the year 1999-2008/2009.

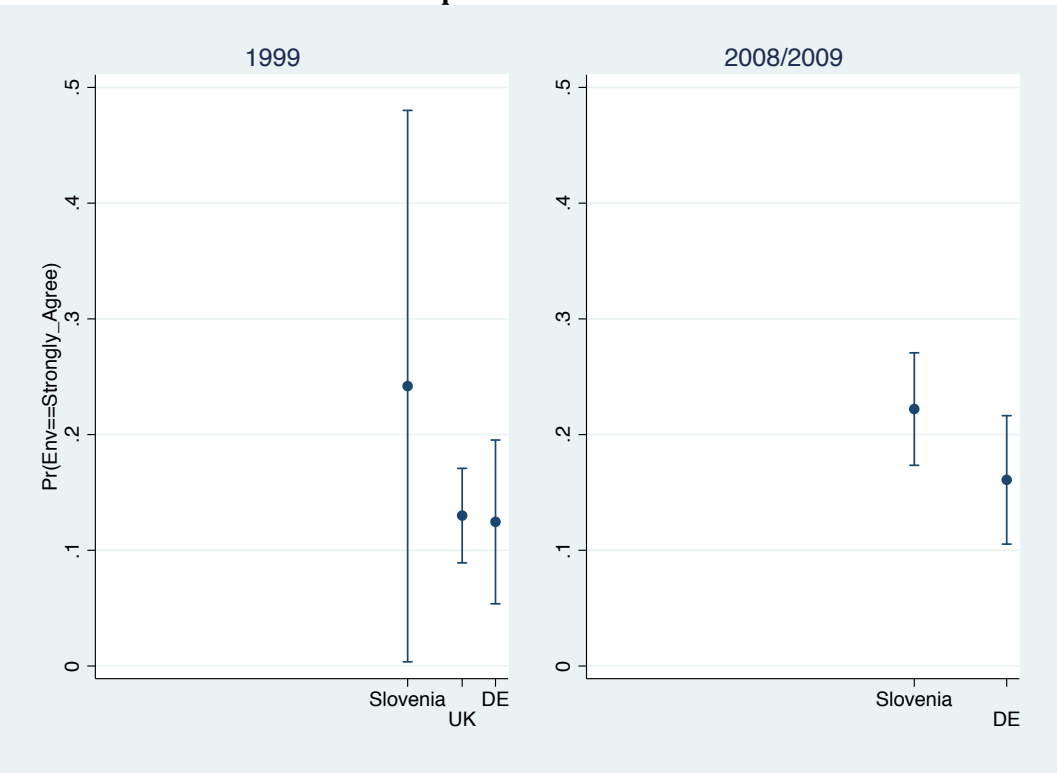
Figure 6. The probability of strongly agreeing to give part of the income for the environment calculated for people sharing the features of an ecological citizen, residents in countries with a quality of democracy index between 45-54, a high country-income and an Index of CO2 emissions lower than 10. Comparisons 1999 and 2008.



Then, the third cluster comprises of only Germany and Slovenia, for the years 1999, 2008/2009. However, as I have already pointed out, the UK has mainly had an index of democracy between 55-64 (the middle value of the scale), high Income and a level of CO2 emissions between 11-20 (the middle value of the scale), which exactly corresponds to this clusters' profile. Germany could be considered the exemplar of this cluster of countries, due to the fact that it has shared this profile over all three survey-measurements. Again, the differences between these countries, belonging to the third cluster, as well as the differences over time in the values of the predicted probabilities to strongly agree to give part of the income for the environment might not be found at the level of true population. This cluster is the first one containing both a long-term democracy and a newly established one (Slovenia), and therefore confirms that, under some circumstances,

45 years of communism (1945-1991) can be outbalanced in ten years, in order for a country to come into line with other Western democracies, in terms of its environmental commitment[21].

Figure 7. The probability of strongly agreeing to give part of the income for the environment calculated for people sharing the features of an ecological citizen, residents in countries with a Quality of Democracy Index between 55-64, a high country-income and a CO2 emissions Index between 11-20. Comparison 1999 and 2008.

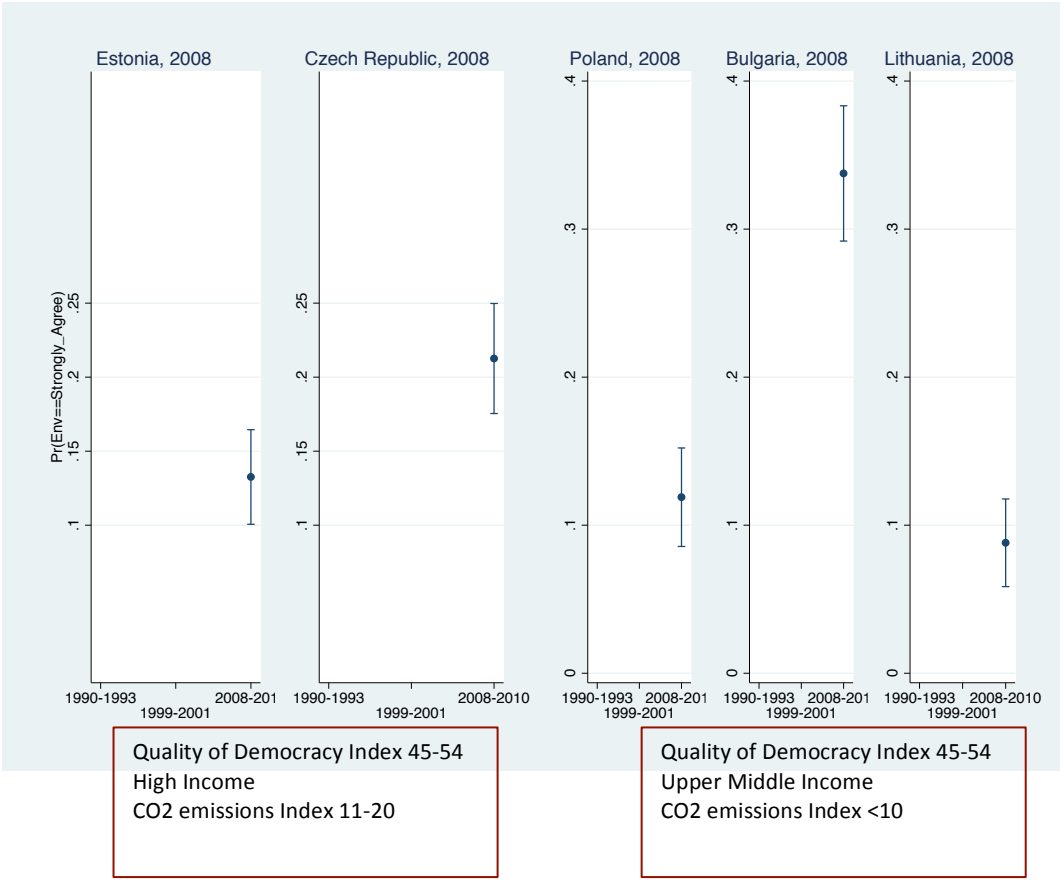


I introduce here the issue of how a comparison can be made between long-term and newly established democracies. As I have shown in Chapter 6, when contrasting between European countries included in the analysis with regard to ecological citizens' commitment to give part of the income for environmental protection, there is a clear difference between former communist countries and the Western democratic bloc, in the 1990/1992 survey wave. Then, the next two survey-waves show a trend of homogenisation, which signals certain changes in these former communist countries as well as in Western countries. I control for these changes by accounting for two general country-level aspects, namely the quality of democracy and the level of economic development, as well as for one particular country-level aspect, the environmental policy. Although the Western European countries share more or less a similar profile, each of the newly established democracies has a very distinctive profile, and a particular route over the two decades

[21] Slovenia joined the European Union in 2004, and is an OECD member since 2010.

included into the analysis. Fortunately, the statistical method used in this research, namely the multinomial regression method, allows exactly for this kind of comparisons, between two or more distinct categories, as given by specific criteria. I will refer to these comparisons in the following discussion. Before this, it is worth mentioning that some former communist countries shared a similar profile, only in 2008, which allows for treating them as a group. The first group consists of Poland, Bulgaria and Lithuania and the second one is formed by Estonia and Czech Republic[22]. Figure 8 presents these groups.

Figure 8. The probability to strongly agree to give part of the income for the environment calculated for people sharing the features of an ecological citizen, residents in former communist countries, in 2008.



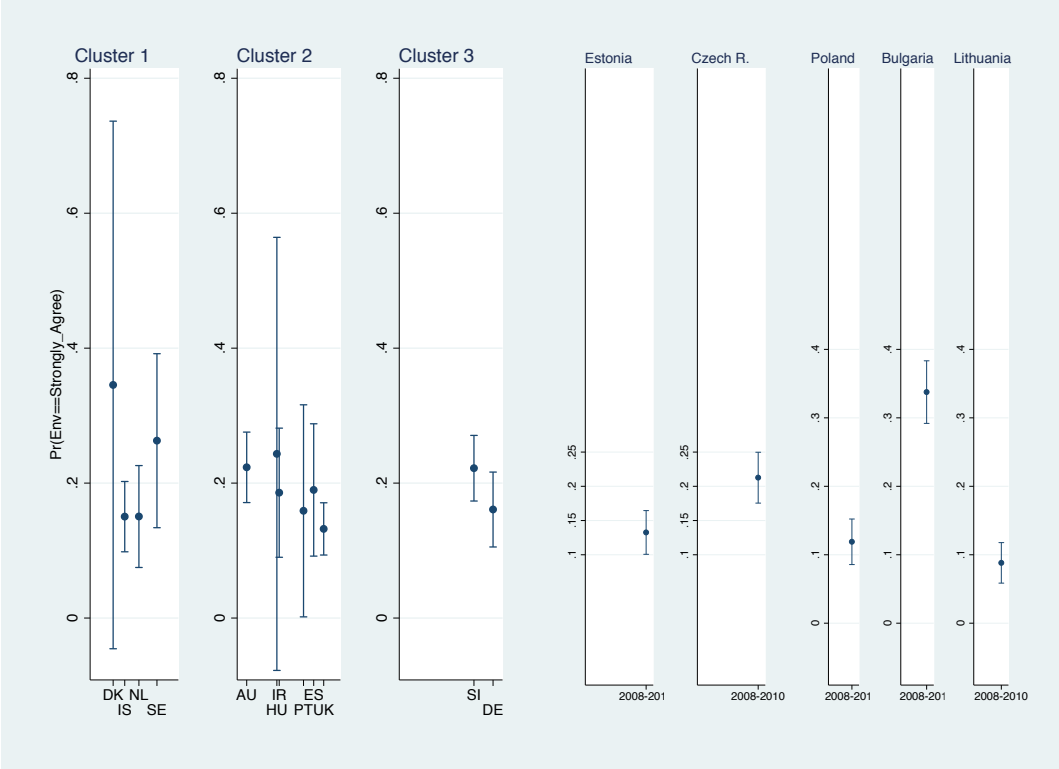
A series of conclusions can be drawn from this first set of findings related to the differences between countries with regard to the willingness of people who share the features of an ecological citizen to give part of the income for environmental protection. Firstly, in the case of most of the countries considered to be long established democracies, in Figures 5, 6, and 7, the differences between countries belonging to the same cluster, as given by the quality of

[22] Hungary shared the features of the group represented by Austria, while Slovenia those of Germany

democracy, economic development and environmental policy, are not statistically significant. This affirmation is valid for the three clusters identified, namely Denmark-Iceland-Netherlands-Sweden, Austria-Ireland-Portugal-Spain-Italy-Hungary-UK[23], and Slovenia-Germany. The differences over time also might not be found at the level of true population. Altogether, these findings confirm not only the stability at the macro-level of most of these countries, but also the consistency of green citizens' commitment to protecting the environment. Then, with regard to the former communist countries, even when they share the same country-profile, there are statistically significant differences between green citizens' willingness to strongly agree to give part of the income for the environment. This finding is valid for the cluster Estonia-Czech Republic and, partially, for the one comprising of Poland-Bulgaria-Lithuania. As a general statement, despite of the differences in start-up between European countries with regard to the quality of democracy, economic development and the environmental policy, a process of homogenization has taken place, which can be seen in the formation of clusters, in 1999 and 2008. These clusters might represent the ground for similar patterns of public commitment to protecting the environment, but it is not always a pre-condition. Figure 9 shows how similar people sharing the features of an ecological citizen can be with regard to their commitment to giving part of the income for the environment, regardless their country of residence – data refers to the 2008/2009-survey wave.

[23] Italy belonged to the group only in 1999, while Hungary and the UK joined in 2008/2009.

Figure 9. The probability to strongly agree to give part of the income for the environment calculated for people sharing the features of an ecological citizen, residents in various European countries. 2008/2009 Survey Wave.



7.4. The within-country variability.

As I have already mentioned in the previous section of this chapter, the within-country analysis aimed to compare differences in the predicted probabilities of strongly agreeing to give part of the income for environmental protection between people sharing the features of an ecological citizen and those not sharing these features. The key difference between the results of such comparison and those presented in Chapter 6 is that now these potentialities are put into the context of the quality of democracy of individuals' country of residence, as well as of the level of economic development and environmental policy. Again, the analysis contrasts the category of ecological citizens with the six categories of non-ecological citizens previously defined and follows the trends over time *within* each country. Table 30 presents the differences between ecological citizens and two categories referring to non-ecological citizens. These categories appear to be significantly different, because the confidence intervals of the predicted probabilities to strongly agree to give part of the income for the environment calculated for these groups do not overlap.

Full details regarding the comparisons between all seven categories are given in Table A.4.5, Appendix 4. For convenience, I presented each country according to the cluster it belongs to, if any.

Table 30. Confidence Intervals of the predicted probabilities of Strongly Agreeing to give part of the income for environmental protection. A Multinomial regression model using individual- and country-level predictors. 21 European countries, 1990, 1999, 2008/2009.

	Ecological Citizens		*Non-Ecological Citizens Local & Global sense of Belonging*		*Non-Ecological Citizens National sense of Belonging*	
Countries sharing a specific profile, different from the rest of the countries included into the analysis						
Belgium, 1990	*0.249*	*0.312*	*0.147*	*0.189*	*0.106*	*0.136*
1999	*0.261*	*0.326*	*0.151*	*0.195*	*0.110*	*0.141*
2009	*0.155*	*0.211*	*0.089*	*0.125*	*0.064*	*0.089*
Finland, 1990	*0.285*	*0.386*	*0.171*	*0.245*	*0.125*	*0.181*
1999	*0.140*	*0.207*	*0.074*	*0.115*	*0.052*	*0.080*
2008	*0.087*	*0.148*	*0.040*	*0.072*	*0.027*	*0.048*
France, 1990	*0.263*	*0.343*	*0.161*	*0.218*	*0.118*	*0.161*
1999	*0.245*	*0.316*	*0.125*	*0.169*	*0.088*	*0.118*
2008	*0.213*	*0.278*	*0.119*	*0.161*	*0.085*	*0.115*
Cluster 1: Countries with High Income, Quality of Democracy Index 65-74, CO2 emissions Index <10						
Denmark, 1990	*0.495*	*0.572*	*0.384*	*0.458*	*0.315*	*0.377*
1999	*0.399*	*0.479*	*0.287*	*0.356*	*0.226*	*0.281*
2008	*0.312*	*0.379*	*0.202*	*0.256*	*0.153*	*0.192*
Sweden, 1990	*0.469*	*0.545*	*0.343*	*0.414*	*0.274*	*0.333*
1999	*0.302*	*0.377*	*0.199*	*0.260*	*0.152*	*0.199*
2008	*0.226*	*0.299*	*0.133*	*0.183*	*0.096*	*0.132*
Netherlands, 1990	*0.366*	*0.446*	*0.267*	*0.335*	*0.211*	*0.265*
1999	*0.209*	*0.285*	*0.137*	*0.192*	*0.103*	*0.144*
2008	*0.123*	*0.178*	*0.068*	*0.102*	*0.048*	*0.072*
Iceland, 1990	*0.250*	*0.337*	*0.172*	*0.241*	*0.132*	*0.185*
1999	*0.146*	*0.214*	*0.088*	*0.133*	*0.064*	*0.096*
2008	*0.117*	*0.184*	*0.065*	*0.106*	*0.046*	*0.075*
Cluster 2: Countries with High Income, Quality of Democracy Index 55-64, CO2 emissions Index <10						
Austria, 1990	*0.249*	*0.324*	*0.145*	*0.196*	*0.105*	*0.142*
1999	*0.139*	*0.206*	*0.072*	*0.110*	*0.050*	*0.077*
**2008*	*0.190*	*0.257*	*0.093*	*0.131*	*0.064*	*0.090*
Ireland, 1990	*0.196*	*0.268*	*0.124*	*0.175*	*0.092*	*0.129*
1999	*0.138*	*0.213*	*0.078*	*0.125*	*0.055*	*0.089*
2008	*0.145*	*0.226*	*0.074*	*0.121*	*0.052*	*0.084*
Italy, 1990	*0.236*	*0.296*	*0.152*	*0.196*	*0.114*	*0.146*
1999	*0.164*	*0.216*	*0.102*	*0.137*	*0.075*	*0.100*
**2008*	*0.219*	*0.283*	*0.139*	*0.185*	*0.103*	*0.136*
Portugal, 1990	*0.526*	*0.609*	*0.410*	*0.490*	*0.338*	*0.407*
1999	*0.071*	*0.156*	*0.041*	*0.093*	*0.029*	*0.067*
2008	*0.122*	*0.196*	*0.067*	*0.110*	*0.047*	*0.077*
Spain, 1990	*0.336*	*0.401*	*0.221*	*0.270*	*0.168*	*0.203*
1999	*0.184*	*0.255*	*0.110*	*0.157*	*0.080*	*0.114*
2008	*0.159*	*0.221*	*0.091*	*0.130*	*0.065*	*0.093*
UK, 1990	*0.215*	*0.280*	*0.139*	*0.184*	*0.104*	*0.137*
1999	*0.104*	*0.156*	*0.054*	*0.084*	*0.038*	*0.058*
2008	*0.107*	*0.157*	*0.055*	*0.082*	*0.038*	*0.057*
Cluster 3: Countries with High Income, Quality of Democracy Index 55-64, CO2 emissions Index 11-20						
Germany W, 1990	*0.181*	*0.237*	*0.101*	*0.135*	*0.072*	*0.095*
1999	*0.086*	*0.163*	*0.038*	*0.074*	*0.025*	*0.050*
**2008*	*0.125*	*0.197*	*0.058*	*0.096*	*0.040*	*0.066*
Slovenia, 1992	*0.286*	*0.366*	*0.217*	*0.283*	*0.174*	*0.226*

	Ecological Citizens		Non-Ecological Citizens Local & Global sense of Belonging		Non-Ecological Citizens National sense of Belonging	
1999	0.205	0.279	0.147	0.203	0.114	0.157
2008	0.191	0.253	0.133	0.179	0.102	0.136
Former Communist Countries						
Hungary, 1991	0.328	0.415	0.208	0.273	0.155	0.205
1999	0.227	0.317	0.127	0.186	0.091	0.134
2008	0.209	0.278	0.115	0.158	0.082	0.112
Estonia, 1990	0.304	0.384	0.217	0.282	0.168	0.221
1999	0.110	0.178	0.059	0.100	0.042	0.070
2008	0.106	0.159	0.060	0.091	0.043	0.064
Czech R. 1991	0.345	0.408	0.265	0.315	0.214	0.252
1999	0.241	0.305	0.169	0.217	0.131	0.166
2008	0.182	0.243	0.105	0.143	0.075	0.102
Poland, 1990	0.352	0.437	0.243	0.312	0.188	0.242
1999	0.229	0.314	0.145	0.205	0.107	0.152
2008	0.092	0.146	0.048	0.078	0.033	0.054
Bulgaria, 1991	0.436	0.516	0.331	0.404	0.267	0.327
1999	0.282	0.370	0.168	0.230	0.122	0.168
2008	0.300	0.375	0.210	0.268	0.163	0.206
Lithuania, 1990	0.301	0.381	0.210	0.273	0.160	0.212
1999	0.057	0.130	0.025	0.059	0.016	0.039
2008	0.064	0.112	0.031	0.056	0.021	0.038

* Red colour flags the differences between survey-waves, namely those changes that can be found at the level of true population. An "*" signals that the confidence interval calculated for the 2008/2009 survey wave overlaps with the one calculated for the 1990-1992 wave.

These results firstly confirm that there are differences at the level of true population, with regard to the predicted probabilities of strongly agreeing to give part of the income for the environment, between the category of people sharing the features of an ecological citizen and the category of those who do not share these attributes. Regardless of the variations across countries and over time, ecological citizens share a greater commitment to protecting the environment than those who are not close to the profile of an ecological citizen. This finding confirms the theoretical framework of the research and demonstrates that the theory of ecological citizenship can provide an in-depth understanding of public support for environmental protection. Secondly, some patterns can be identified in how this commitment has changed over time. For instance, a decrease occurred in Belgium only in 2008/2009 survey-wave, while a constant decrease could be noticed in Denmark, the Netherlands, Sweden, the UK, and Poland, both in 1999 and 2008/2009 survey-waves. In some countries, the 1999 decrease is followed by a relative stability in 2008/2009 – namely Finland, Iceland, Portugal, Spain, Slovenia, Hungary, Estonia, Czech Republic, Bulgaria, and Lithuania. Then, there are no statistically significant changes over time in green citizens' commitment to protecting the environment in France and Ireland. Finally, in other

countries the decrease in 1999 is followed by an increase in 2008/2009, reaching a similar level to the one in 1990, in Austria, Italy and West Germany.

Altogether, these results demonstrate once again that controlling for the degree of democracy, level of economic development and environmental policy, green citizens' commitment to protecting the environment is a stable phenomenon, appearing as a common denominator of the entire variation between countries and over time of public environmental commitment. This is the most important finding of the research presented in this thesis and brings new light on the debate regarding the individual and macro-level predictors of public environmental commitment.

7.5. Conclusion.

The key findings of the analysis presented in this chapter are firstly related to the power of the explicative model (e.g. Model 5). Almost 20% of the variation of the outcome variable can be explained through this model. This means that the model substantially explains public commitment to protecting the environment. Then, each predictor included into the model, namely the features of an ecological citizen and the profile of the country of residence in terms of quality of democracy, country-income status, and the level of CO_2 emissions, has a significant contribution to this variation. Although introducing the country-level predictors does not increase the percentage of the variance explained, their coefficients are statistically significant. This brings the possibility of accounting for the profile of each country, with regard to the quality of democracy, economic development and environmental policy. The constellation of ecological citizenship's proxy variables also contributes to explaining the variation of the outcome by 5.3%, a value very similar with the one achieved in the analyses presented in Chapter 7, when country-level measures were not introduced into the model. Secondly, there are a number of research findings related to either the differences *between* countries or *within* each of them. While the general idea is related to a clear homogenization that has taken place over time, some countries have clustered with one another, sharing the same profile as well as a relatively similar commitment to protecting the environment amongst people who share the features of an ecological citizen. Further, some distinctions such as a highly active involvement in environmental

international agreements of the Nordic countries, the UK or Germany, although they are generally known in the literature (Boehmer-Christiansen, 1995; Dryzek et al., 2003), are not supported or followed by a distinct profile of their residents, totally separated from the rest of Europeans. This raises the question of the connexions between the domestic or international behaviour of a country and its citizens' support for that specific set of measures. In the case of former communist countries, there was indeed a clear differentiation from the rest of the European countries, but mainly in the 1990/1992 survey-wave. However, it is still hazardous to refer to a pattern applicable to all these countries.

With regard to the within-country variability, there is not a single pattern over time, although at the first sight, the descriptive analysis of data showed a decrease in public commitment to protecting the environment across almost all countries. There are indeed countries sharing a constant decrease over time in people's willingness to give part of their income for environmental protection, but there are countries where this tendency occurred only in the second survey wave, and has since remained stable. There are also countries where the decrease was followed by an increase, and countries where the public commitment to protecting the environment has not changed over time. All these trends do not refer to the clusters of countries formed based on their profile, as given by the quality of democracy, economic development and environmental policy. This finding highlights the need for further research on the potential predictors of public environmental commitment.

Despite of all the above distinctions between the European countries included in the analysis, there is one finding valid for all countries and all survey-waves. It concerns a higher commitment of individuals sharing the features of an ecological citizen to give part of their income for the environment, in contrast with people who share partially or do not share at all the profile of an ecological citizen. This finding is valid when controlling for the profile of their country of residence, in terms of its quality of democracy, economic development and environmental policy.

To conclude, a greater commitment to protecting the environment can be found amongst people sharing the features of an ecological citizen, rather than amongst those who share partially or not

share at all these attributes. This phenomenon can be found in all European countries included into the analysis, but it varies across countries and over time. Such variation is partially explained by the profile of a country, as given by the quality of democracy, economic development and environmental policy, firstly because introducing these measures does not improve the proportion of the variance explained, and secondly because there is not a clear pattern within the same groups of countries: there might be differences between the level of green citizens' willingness to give part of their income for environmental protection, especially in former communist countries, but there might be also significant similarities between Western democratic countries that belong to the same group.

Chapter 8: Europeans' commitment to protecting the environment over the years 1990-2009 – concluding remarks

8.1 Key research findings: how they answer the research questions and whether they confirm the research hypotheses

This research has sought to provide new understandings regarding the trends in Europeans' willingness to make financial sacrifices for the environment over the last two decades. The main aim has been not only to account for the characteristics of the individuals who take a pro-environmental position, but also to contextualize these attributes by considering the realm of life of these individuals, with respect to the degree of democracy of their country of residence, the economic development and the national environmental policy. From the outset, I have emphasised the idea of difference, of the distinctions that are constitutive of the field of environmental matters: differences over time, differences between individuals from the same country or from other countries, differences in the macro-societal and political context, and differences in environmental policies. The study has also reviewed what data is available in order to enable such inquiry. Specifically, I have noted that in the last two decades there has been a lack of interest in collection of systematic cross-country and longitudinal data on public concern with the environment. I found that in creation of indices or measures related to the national environmental policy of a country, a longitudinal approach has not been of interest. I refer here to The Environment Index, at Yale University, to the Climate Laws Institutions and Measures Index, at the European Bank for Reconstruction and Development in collaboration with Oxford University, to the Climate Change Performance Index, or even the Germanwatch Index. The only available index taking a longitudinal approach is the one recently constructed by Thomas Bernauer and Tobias Bohmelt, namely the Climate Change Cooperation Index. However, it refers only to the time frame 1995-2009 and does not account (or sanction) for whether or not a

country uses nuclear power in the production of energy. Furthermore, some indicators of economic development or the degree of democracy could not be considered in the case of countries where the constitutional regime changed at the beginning of 1990s (the post-Soviet countries and Germany).

Under these circumstances, I have collated all the available information in order to obtain the most complete account possible of the drivers of the Europeans' commitment to environmental protection, when citizens' views are linked with various policies' outcomes implemented by their governments, namely the quality of democracy, the level of economic development and environmental protection. In doing so, I have accounted for the idea that public environmental commitment is part of a larger social, cultural, and political realm, in which various macro-social processes are in place. I have also highlighted the fact that in understanding people's commitment to protecting the environment it is essential to consider how the relationship between humans and environment is defined by a society and how the academic positions frame the debate on environmental protection. Bridging the principles of deep ecology and those of ecological citizenship (Naes, 1983, Dobson, 2000, 2003, 2006, 2007), I have proposed an alternative approach to the opposition of 'anthropocentrism' and 'ecocentrism', as well as to the opposition between 'post-materialism' (Ester, Halman & Seuren, 1993; Inglehart, 1995; Gellisen, 2007; Franzen & Meyer, 2010) versus 'new environmental paradigm' (Dunlap & van Liere, 1984; Dunlap, van Liere, Mertig & Jones, 2000; Dunlap & York, 2008) in explaining Europeans' willingness to make financial sacrifices for the environment. This approach has taken the advantage of the available cross-country longitudinal data, in order to operationalize the ecological citizenship. Although studies on this topic have been already undertaken (Jagers, 2009; Jagers & Matti, 2010), they do not take into account some of the dimensions of ecological citizenship, namely its non-territorial character. Furthermore, these studies refer only to a specific country, namely Sweden. Alternatively I have proposed a cross-country and longitudinal approach. One of the most important findings of this research is that regardless of the variation between and within European countries, people sharing the features of an ecological citizen are

more likely to express willingness to give part of their income for environmental protection than people who do not share these attributes. Such a finding is also valid for people with a low household income. In other words, no matter their country of residence and no matter the time period, green citizens are more willing to make financial sacrifices for environmental protection.

I have also shown that the effect of the household income on people's commitment to give part of the income for the environment follows the 'classic' trend, in the sense that a higher income level will increase the likelihood of expressing willingness to give part of the income for the environment. However, the distinction between green citizens and non-green citizens still holds in the case of people with a low household income. Furthermore, the fact that the presence of the attributes specific to ecological citizenship can blur the influence of income on people's commitment to environmental protection is very much in line with decades of work developed by green political thinkers, who have always advocated the idea that caring about the environment is not directly related to financial resources. Such results also put into question the "affluence hypothesis" developed by the adherents of the post-materialistic approach (Ester, Halman & Seuren, 1993; Inglelhart, 1995; Frazen, 2003; Gelissen 2007; Franzen & Meyer, 2010). Although this hypothesis mainly refers to the affluence of a country, the studies of Gelissen and Franzen take into account the income of individuals in predicting pro-environmental attitudes, demonstrating that there is a positive relationship between the two. The findings of this study impact on that perspective: despite the fact that there is a positive relationship between the income of the individuals and their willingness to make financial sacrifices for the environment, when people share the features of ecological citizenship, such a positive relationship between income and pro-environmental attitudes is lessen. Put differently, green citizens will care about the environment even when they have limited financial resources. Therefore, the first hypothesis of the research has been empirically confirmed, namely that the Europeans' commitment to make financial sacrifices for protecting the environment is better explained by the features of ecological citizenship than wealth-related characteristics.

By employing the first set of explicative models, which included mainly individual-related predictors, the first research question is answered, that is whether or not there is variation over time and between countries in European public concern with the environment. As was shown in the analysis, there is variation over time in most European countries included in the analysis, but in the case of West Germany and France the differences over time are not statistically significant. In some regards, the same applies to Italy, when comparing 2009 with 1990, as well as to Belgium, Slovak Republic, and Slovenia when comparing 2000 with 1990. This might be a mark of how stable public environmental commitment has been, in the above-mentioned countries.

Strong arguments in favour of the second research question were prefigured through the individual-level analysis, namely that it is important to put the attributes of individuals into the context of their country of residence, in order to better understand the differences between countries and over time with regard to public environmental commitment. The answer to the second question is that both the individual and country level measures are important in explaining Europeans' concern with the environment. However, when the country-level variables are introduced, the features of ecological citizenship have the same explicative power as in the individual-level models, which shows once again the value of this approach in explaining Europeans' willingness to protect the environment. The analysis shows that those features are related to individualization, control over life, local and global sense of belonging, positive attitudes towards people in need, trust in people, volunteering and the priority given to idea of equality between people.

Similarly, the macro-social characteristics that are specific to a country also have a significant effect on Europeans' commitment to making financial sacrifices for the environment. However, accounting for these measures does not increase how much of the variance of the outcome is explained through the individual- and country-level model (the "integrative model"), but provides the opportunity of contextualizing the role played by the features of ecological citizenship in predicting public commitment to giving part of the income for the environment. Due to the

various profiles of the European countries, it is hazardous to draw conclusions regarding the *level* of public willingness to make financial sacrifices for the environment. For instance, there are similarities not only between countries sharing the same country-profile, but also between countries belonging to different clusters. Only in the case of former communist countries, can distinctions be found between countries sharing the same country-profile, with regard to the level of public commitment to protecting the environment.

Further, it is also advisable to consider that the variations over time in public concern with the environment do not follow the same pattern in all European countries included in the analysis. There might be a constant decrease as well as there might be an increase and then a decrease or even a relative stability of public commitment to protecting the environment. In light of these findings, the second hypothesis of the research is partially confirmed, as the ecological citizenship appears to be a built-in time construct, but not necessarily increasingly popular over time. The third hypothesis is also partially supported, not only by the fact that adding the interaction between country and time increases the variance explained considerably, but also due to the fact that more similarities are observed between countries rather than within the same country over time.

A general conclusion that can be drawn from both individual-level analysis and the integrative analysis, is that in all European countries, across all three survey waves (1990, 1999, 2008), people sharing the attributes of an ecological citizen are more likely to express commitment to giving part of their income for the environment compared with those who do not share these attributes. Accordingly, none of the hypotheses regarding public concern with the environment, formulated in the literature so far, could be supported by the empirical findings of this research – the 'affluence hypothesis' and the 'objective problems hypothesis' (Ester, Halman & Seuren, 1993; Inglelhart, 1995; Frazen, 2003; Gelissen 2007; Franzen & Meyer, 2010). This also is the case of the fourth hypothesis, which mainly distinguishes between newer and established democracies. This conclusion invites to reconsidering the linear relationship between public commitment to protecting the environment and its potential predictors. It also opens the possibility of

determining the conditions under which public commitment to protecting the environment can be cultivated, regardless of the profile of a country – and this is mainly related to a more humanistic view of why people care about the environment.

Altogether, this research contributes to the field of environmental politics through its integrative character both at the theoretical and empirical level. It advocates the idea that a convergent approach could help more in achieving coherent knowledge about the linkages between public commitment to protecting the environment and environmental governance. It challenges the existing debate on environmental matters by demonstrating that not only does economic wealth help in predicting Europeans' willingness to protect the environment, but that the set of values, attitudes and behaviours that are constitutive to ecological citizenship are also predictive. Further, it demonstrates that green political thought has potential for providing substantive solutions to environmental matters, and consequently to the current challenges to democracy, by its convergent concern related not only to the environment but also to the contemporary human condition.

8.2 Research Limitations

Three key aspects could affect the quality of research findings and whether they answer the research questions and confirm the hypotheses: these relate to the analytical framework, the quality of empirical data analysed, including the transformations made to the data, and the explicative models on which the conclusions are based. One possible criticism of this research is whether or not the variables selected as proxies of the features of ecological citizenship adequately measure them. Two points are important to consider. Firstly, I have already pointed out that these are the best measures that could be used from the available survey data allowing for cross-country longitudinal analyses over the years 1990-2009. Secondly, the findings supports the claim that the variables selected as proxies of ecological citizenship offer the best explanation, in terms of predictive power, of Europeans' willingness to give part of their income for the environment, in all countries included in the analysis, across all survey waves.

Another criticism that might be directed at this analysis relates to the quality of data used for the explicative models. For instance, it could be put into question the decision to retain only the case of West Germany in the analysis and exclude the sample of individuals resident in East Germany, for which the questions regarding sense of belonging were not asked, in the survey wave 1990. As was discussed previously, I preferred to achieve *partial* knowledge regarding how German public commitment to protecting the environment varies, rather than losing information about this case completely. Further, the transformation of most of the explicative variables in a way that reduces the number of response categories could also be questioned. However, instead of maintaining the original measurement scales of the nominal variables included in the explicative models, which would increase dramatically the number of empty cells for the explicative models and implicitly would alter the specification of the models, I preferred to meaningfully transform the response scales of the variables in order to decrease and keep the percentage of empty cells to less than 60%[24].

The third criticism that this study could potentially encounter relates to the specification of the explicative models used in Chapter 6. More specifically the variable 'income' introduced into the model contains missing data., Subsequently, this biases the model estimates, as the confidence intervals of the estimates are calculated based on the sample size, which is altered due to this missing data issue. Again, I considered it is better for the consistency of the study to refer to the role of income on public commitment to protecting the environment. Although Andrew Dobson only indirectly mentioned this in articulating the features of ecological citizenship, it has constituted the basis of a long-term debate over the determinants of public willingness to make financial sacrifices for the environment. Also related to the specifications of the explicative models presented in Chapter 7 and 8, one might question why I chose a multinomial regression model instead of creating four new binary variables based on the five response categories of the

[24] This was the percentage of the empty cells for the first series of explicative models that I run.

outcome variable and run four binary regression models[25] which are easier to interpret. I considered it better to keep intact the initial distribution of the outcome variable, in order to maintain the sample errors to their initial values as much as possible.

Finally, another limitation of this research is related to the impossibility of controlling for measurement error. Modelling cross-country longitudinal survey data requires accounting not only for sampling error, but also for measurement error. Especially if multi-stage samples are used, the assumption of independent observations is not fully valid for two reasons: there exist a within-country clustering effect, due to sample design, and a between-country clustering effect, due to the fact that various samples are pooled together. Considering such a data structure, a multi-level approach is advisable. This disentangles the error term in a way that reflects how data is structured and provide information regarding the extent of the within- and between-country variability. However, most studies employing multilevel analysis refer to this error term as being related to sampling error only. The research in this area of survey methodology has developed considerably in the last decade, but the knowledge advanced so far in this field refers to continuous variables and requires that the variables included in the explicative models are measured using the same scale[26]. Because most of the variables included in the explicative models estimated for the analysis presented here are categorical and their response scales are different to one another, it has not been possible to account for the errors that might have arisen through measurement for these specific explicative models. To my understanding, there are two alternatives to this problem: to identify alternative sources of data, such as the European Social Survey (ESS), which can mirror the initial explicative model. For instance, one of the rotating modules of the 8th ESS round refers to public attitudes to environmental matters and could represent an opportunity to complement the initial model. A second solution could be to transform the outcome variable, reduce the number of predictors to those having the same type of response scale and employ a multilevel binary model, instead of a multilevel multinomial

[25] One for each response category, keeping the 5th as reference category.
[26] I refer to the work of the Research and Expertise Centre for Survey Methodology at Pompeu Fabra University.

model. For both these alternative solutions future research is needed, which would require collaboration between various disciplines and institutions[27].

8.3 Directions for future research

In light of the findings presented above, a number of areas could be important for further exploration in the field of comparative environmental politics. Firstly, there is need for long-term research strategies that promote and monitor the developments in cross-country longitudinal research related to public commitment to protecting the environment. This requires not only supra-national institutional bodies, but also institutional capabilities at the level of national institutions, in countries that have different profiles in terms of resources or cultural and socio-political regimes. It also demands a growing body of academic work if not at the regional level, at least at the country level, which could allow for collaborations in cross-country research projects. Further, there is a need for governmental and non-governmental institutions to prioritise making available harmonized and accessible survey data at the local, regional and national level related to environmental matters, natural resource management and the link between various sectors related to the environment.

Secondly, there is the urgent need to develop an index regarding the EU agenda on the environment and agreements with non-EU countries on this issue. Such an index would enable comparisons between countries not only with regard to implementation at the national level of EU regulations and directives, but also about the promoters and beneficiares of each EU environmental regulations/directives. As was noted, despite many attempts to create a measure related to the national environmental policies of various countries, only one systematically addresses the need for longitudinal analysis and none of them accounts for the contexts in which an environmental law has been promoted, adopted and implemented, in all European countries.

[27] I have been in contact with the team of the Research and Expertise Centre for Survey Methodology at Pompeu Fabra University, with the scope to develop a research project that can address such specific issues in survey methodology.

Finally, this thesis has highlighted the importance of further developing systematic cross-country longitudinal research related to people's commitment to protecting the environment, their contexts of life, such as education, work, family, cultural and political participation, and their values and attitudes towards these aspects of life. For such a project to exist, long-term political will and academic stability, as well as interdisciplinary collaboration are crucially needed. In other words, only a long-term strategy developed and monitored through collaborative work by supra-national agencies and NGOs, national and regional governments could prepare the contexts for the cross-country longitudinal research on public willingness to protect the environment to blossom.

Table A.1.1. The research framework: explaining Europeans' willingness to give part of their income for protecting the environment using the theory of ecological citizenship.

Outcome variable **"I would give part of my income if I were certain that the money would be used to prevent environmental pollution"** 1=Strongly Agree; 2=Agree; 3=Disagree; and 4=Strongly Disagree	
Explicative Variables	
The theory of ecological citizenship	**Proxy variables**
An implicit Self-Awareness	
Justice as the first virtue of ecological citizenship (Dobson, 2005: 604)	**Equality versus Freedom** Which of these two statements comes closest to your own opinion? A = I find that both freedom and equality are important. But if I were to make up my mind for/to choose one or the other, I would consider personal freedom more important, that is, everyone can live in freedom and develop without hindrance. B = Certainly both freedom and equality are important. But if I were to make up my mind for/to choose one of the two, I would consider equality more important, that is that nobody is underprivileged and that social class differences are not so strong
Care and compassion as secondary virtues, helping in realizing justice (Dobson, 2005, p. 605)	**Attitude towards people in need** Why are there people in this country who live in need? Here are four possible reasons. Which one reason do you consider to be most important? 1 = because they are unlucky 2 = because of laziness and lack of willpower 3 = because of injustice in our society 4 = it's an inevitable part of modern progress 5 = none of these
An active ecological citizenship in private sphere: **"**Private acts have political consequences" "It is all about everyday living." (Dobson 2000: 48, 50)	**Individual vs. State responsibility for providing for** On this card you see a number of opposite views on various issues. How would you place your views on this scale? 1 = Individuals should take more responsibility for providing for themselves 10 = The state should take more responsibility to ensure that everyone is provided for
	Control over life Some people feel they have completely free choice and control over their lives, and other people feel that what they do has no real effect on what happens to them. Please use the scale to indicate how much freedom of choice and control you feel you have over the way your life turns out? 1 = none at all; to 10 = a great deal
"Non-reciprocal responsibility to act with care and compassion towards distant strangers, human and non-human, both in time and space (Dobson, 2000: 45)	**Voluntary work** Please look carefully at the following list of voluntary organisations and activities and say which, if any, are you currently doing unpaid voluntary work for? 0=mentioned; 1=not mentioned
The sense of local and global place: "The Earth citizen possesses a sense of local and global place, while world citizens make their deracinated way around an undifferentiated globe. (Dobson 2000: 52)	**Sense of belonging** Which of these geographical groups would you say you belong to first of all? Second? 1 = locality or town where you live 2 = region or country where you live 3 = country as a whole 4 = Europe 5 = the world as a whole
Horizontal relationships between citizens: " Ecological citizenship is about the horizontal relationship between citizens rather than the vertical (even if reciprocal) relationship between citizen and state." (Dobson 2000: 51)	**Trust in people** Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people? 1 = most people can be trusted 2 = cannot be trusted

** In the EVS dataset *each* question/variable has also values referring to 'don't know = -1'; 'no answer = -2'; 'not applicable = -3'; 'question not asked = -4'; 'other missing = -5'.

Table A.1.2. List of countries participating in the European Values Survey (EVS) by sample size and survey waves

	EVS-wave			Total
	1990-1993	1999-2001	2008-2010	
Albania	0	0	1534	1534
Azerbaijan	0	0	1505	1505
Austria	1460	1522	1510	4492
Armenia	0	0	1500	1500
Belgium	2792	1912	1509	6213
Bosnia Herzegovina	0	0	1512	1512
Bulgaria	1034	1000	1500	3534
Belarus	0	1000	1500	2500
Canada	1730	0	0	1730
Croatia	0	1003	1525	2528
Cyprus	0	0	1000	1000
Northern Cyprus	0	0	500	500
Czech Republic	2109	1908	1821	5838
Denmark	1030	1023	1507	3560
Estonia	1008	1005	1518	3531
Finland	588	1038	1134	2760
France	1002	1615	1501	4118
Georgia	0	0	1500	1500
Germany***	3437	2036	2075	7548
Greece	0	1142	1500	2642
Hungary	999	1000	1513	3512
Iceland	702	968	808	2478
Ireland	1000	1012	1013	3025
380 = Italy	2018	2000	1519	5537
Latvia	903	1013	1506	3422
Lithuania	1000	1018	1500	3518
Luxembourg	0	1211	1610	2821
Malta	393	1002	1500	2895
Moldova	0	0	1551	1551
Montenegro	0	0	1516	1516
Netherlands	1017	1003	1554	3574
Norway	1239	0	1090	2329
Poland	982	1095	1510	3587
Portugal	1185	1000	1553	3738
Romania	1103	1146	1489	3738
Russian Federation	0	2500	1504	4004
Serbia	0	0	1512	1512
Slovak Republic	1136	1331	1509	3976
Slovenia	1035	1006	1366	3407
Spain	2637	1200	1500	5337
Sweden	1047	1015	1187	3249
Switzerland	0	0	1272	1272
Turkey	0	1206	2384	3590
Ukraine	0	1195	1507	2702
Macedonia	0	0	1500	1500
Great Britain	1484	1000	1561	4045
Northern Ireland	304	1000	500	1804
Kosovo	0	0	1601	1601
***West Germany	2101	1037	1048	4186
USA	1839	0	0	1839

Table A.1.3. List of countries participating in the European Values Survey by variables of interest and survey waves

Country	Wave 1	Wave 2	Wave 3
Austria	Yes	Yes	Yes
Belgium	Yes	Yes	Yes
Bulgaria	Yes	Yes	Yes
Czech Republic	Yes	Yes	Yes
Denmark	Yes	Yes	Yes
Estonia	Yes	Yes	Yes
France	Yes	Yes	Yes
Germany (Eastern)	NO: Sense of Belonging	Yes	Yes
Hungary	Yes	Yes	Yes
Iceland	Yes	Yes	Yes
Ireland	Yes	Yes	Yes
Italy	Yes	Yes	Yes
Latvia	NO: Freedom vs Equality	Yes	Yes
Lithuania	Yes	Yes	Yes
Netherlands	Yes	Yes	Yes
Poland	Yes	Yes	Yes
Portugal	Yes	Yes	Yes
Romania	NO: Environmental Attitudes	NO: Freedom vs Equality	Yes
Slovak Republic	Yes	Yes	Yes
Slovenia	Yes	Yes	Yes
Spain	Yes	Yes	Yes
Sweden	Yes	Yes	Yes
Great Britain	Yes	Yes	Yes
Finland	Yes	Yes	Yes
Malta	Yes	NO: Sense of Belonging	Yes
North Ireland	Yes	Yes	Yes
Belarus	No sample	Yes	Yes
Croatia	No sample	Yes	Yes
Greece	No sample	NO: Freedom vs Equality	Yes
Luxembourg	No sample	Yes	Yes
Russia	No sample	Yes	Yes
Turkey	No sample	Yes	Yes
Ukraine	No sample	Yes	Yes

Table A.1.4. The population under study of Europeans' commitment to protecting the environment. The European countries that are included in the research, sorted by region and political regime.

Established Democracies		New democracies
Western, Central & Mediterranean European Countries	**Nordic Countries**	**Eastern Europe**
Austria	Denmark	Bulgaria
Belgium	Finland	Czech Republic
France	Iceland	Estonia
Ireland	Sweden	Hungary
Italy		Lithuania
Netherlands		Poland
Portugal		Slovenia
Spain		Slovak Republic
UK		
West Germany		

Note: The year 1990 is taken as reference for considering whether a country belongs to category "established democracies" or to category "new democracies".

Table A.2.1. Questions related to the public commitment to protecting the environment, included in the Social Survey Programme (ISSP), the Environment Module

Questions ISSP Waves: 1993, 2000, 2010	Measurement Scale
SOCIETAL LEVEL – ECONOMIC WELFARE, THE ROLE OF GOVERNMENT AND SCIENCE	
If you had to choose, which one of the following would be closest to your views	1 Government should let **ordinary people** decide for themselves how to protect the environment, even if it means they don't always do the right thing 2 Government should pass laws to make **ordinary people** protect the environment, even if it interferes with people's rights to make their own decisions
And which one of the following would be closest to your views	1 Government should let **businesses** decide for themselves how to protect the environment, even if it means they don't always do the right thing 2 Government should pass laws to make **businesses** protect the environment, even if it interferes with people's rights to make their own decisions
Economic growth always harms the environment	1 agree strongly 2 agree 3 neither agree nor disagree 4 disagree strongly 8 can't choose
We worry too much about the environment and not enough about prices and jobs today	
Almost everything we do in modern life harms the environment	
People worry too much about human progress harming the environment	
In order to protect the environment [COUNTRY] needs economic growth	
Modern science will solve our environmental problems with little change to our way of life	
Overall, modern science does more harm than good	
We believe too often in science, and not enough in feelings and faith	
POST-MATERIALISM INDEX	
Looking at the list below, please tick a box next to the one thing you think should be [COUNTRY'S] highest priority, the most important thing it should do	1 Maintain order in the nation 2 Give people more say in government decisions 3 fight rising prices 4 protect freedom of speech 8 can't choose
And which one do you think should be [COUNTRY'S] next highest priority, the second most important thing it should do	

Questions ISSP Waves: 1993, 2000, 2010	Measurement Scale
EVALUATING ENVIRONMENTAL RISKS	
In general, do you think that air pollution caused by cars is ...	1 extremely dangerous 2 very dangerous 3 somewhat dangerous 4 not very dangerous 5 not dangerous at all for the environment 8 can't choose
In general, do you think that air pollution caused by industry is	
In general, do you think that pesticides and chemicals used in farming are	
And do you think that pollution of [COUNTRY'S] rivers, lakes and streams is	
INDIVIDUAL LEVEL: ATTITTUDES & ACTIONS	
How willing would you be to pay much higher prices in order to protect the environment	1 very willing 2 fairly willing 3 neither willing nor unwilling 4 fairly unwilling 8 can't choose
And how willing would you be to pay much higher taxes in order to protect the environment	
And how willing would you be to accept cuts in your standard of living in order to protect the environment	
It is just too difficult for someone like me to do much about the environment	1 agree strongly 2 agree 3 neither agree nor disagree 4 disagree strongly 8 can't choose
I do what is right for the environment, even when it costs more money or takes more time	
How often do you make a special effort to sort glasses or tins or plastic or newspapers and so on for recycling	1 Always 2 Often 3 Sometimes 4 Never 8 Recycling not available where I live / Not having a car
An how often do you cut back on driving a car for environmental reasons	
ENVIRONMENTAL ACTIVISM	
Are you a member of any group whose main aim is to preserve or protect the environment	1 yes 2 no
In the last five years have you signed a petition about an environmental issues	1 yes, I have 2 no, I have not
In the last five years have you given money to an environmental group	

Questions ISSP Waves: 1993, 2000, 2010	**Measurement Scale**
In the last five years have you taken part in a protest or demonstration about an environmental issue	
OTHER QUESTIONS INCLUDED IN the 'ENVIRONMENT' MODULE	
Private enterprise is the best way to solve [COUNTRY'S] economic problems	1 agree strongly 2 agree 3 neither agree nor disagree 4 disagree strongly 8 can't choose
It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes	

Table A.2.2. Questions related to the public commitment to protecting the environment, included in the Eurobarometer surveys.

Questions	Measurement Scale	EB number & year
Q3. Some people are concerned about environmental protection and the fight against pollution. In your opinion, is it..... [show card]	1. an immediate and urgent problem 2. more a problem for the future 3. not really a problem 4. DK	EB 43.1 (1995) & EB 51.1 (1999)
Q4. At present, are you very worried, somewhat worried, not very worried or not at all worried about the following [show card]	1.The disappearance of certain types of plants, animals and habitats throughout the world 2. Using up natural resources throughout the world 3. The disappearance of tropical forests 4. Global warming (greenhouse effect) 5. Pollution of the air, water, ground 6. The destruction of the ozone layer 7. Urban problems (traffic in towns, noise, pollution) 8. Nuclear power stations and radioactive waste processing 9. The use of genetically modified organisms, like genetically modified corn, in other food products	EB 43.1 (1995) & EB 51.1 (1999)
Q5. Where you live, do you have very much reason, quite a lot of reason, not very much reason or no reason at all to complain about....	1.the quality of tap water 2. the quality of water for swimming 3. noise 4. air pollution 5. waste disposal 6. lack of green spaces 7. damage done to the landscape 8. traffic problems 9. the quality of food product 10. the organisation of civil defence in the face of natural or technological disasters (floods, earthquakes, fires, etc.)	EB 43.1 (1995) & EB 51.1 (1999)
Q6. Now, thinking about [our country], are you very worried, somewhat worried, not very worried or not at all worried about the following... [show card]	1.Pollution in rivers and lakes 2.Pollution of the sea and coasts 3. Damage to animals, plants and habitats	EB 43.1 (1995) & EB 51.1 (1999)

Questions	Measurement Scale	EB number & year
	4. Air pollution 5. Pollution derived from farming (insecticides, weed killers, erc) 6. Industrial waste 7. The development of biotechnology 8. Hunting and shooting 9. The production of nuclear power 10. Motor sports in natural environment, such as motor boats, motorbike, off-road vehicles, etc) 11. The damage caused by tourism 12. Urban problem (traffic, noise, pollution) 13. The risk related to industrial activities 14. Natural disasters such as floods, storms, earthquakes, etc)	
Q14.a. In your opinion, do public bodies act effectively or not to protect the environment?	1.At a local level 2. At a regional level 3. At a national level 4. At a European Union level 5. At a worldwide level	EB 43.1 (1995) & EB 51.1 (1999)
QD1. When people talk about “Environment”, which of the following do you think of first?	1.Polution in towns and cities 2. Green and pleasant landscapes 3. Earthquakes, floods and other natural disasters	EB 58.0 (2002) & EB 62.1 (2004)

Questions	Measurement Scale	EB number & year
	4. Protecting nature 5. The state of the environment our children will inherit 6. The quality of life where I live 7. The responsibility of the individuals for improving the environment 8. Using up natural resources to provide a comfortable way of life 9. None of these 10. DK	
QD12. [TREND MODIFIED] From the following list, which are your three main sources of information about the environment? (max 3)	1.Newspapers 2. Magazines 3. Television news 4. The radio 5. Films and documentaries on television 6. Conversations with relatives/family/friends/neighbours/colleagues 7. Books 8. The internet 9. Publications/Brochures/Information and material 10. Events (conferences, fairs/exhibitions, festivals, etc.) 11. I am not interested in environment (spontaneous) 12. Other (spontaneous) 13. DK	EB 58.0 (2002) & EB 62.1 (2004)
QD3. From the following list, who do you trust most when it comes to environmental issues? [TREND SLIGHTLY MODIFIED]	1.National government 2. Regional/local government 3. European Union 4. Companies 5. Trade Unions 6. Political parties standing for environment (Greens, etc.) 7. Consumer associations and other citizens' organizations 8. Scientists 9. Teachers at school or university	EB 58.0 (2002) & EB 62.1 (2004)

Questions	Measurement Scale	EB number & year
	10. Family/neighbours/friends/colleagues 11. Television 12. Radio 13. Newspapers 14. None of them (spontaneous) 15. DK	
Qd14. Which level do you think is the most effective for taking decisions about protecting the environment? [TREND]	1. Local government 2. Regional government 3. National government 4. European Union 5. United Nations 6. Other (spontaneous) 7. DK	EB 58.0 (2002) & EB 62.1 (2004)
QD15 In your opinion, which of the following would make it possible to most effectively solve environmental problems? [TREND SLIGHTLY MODIFIED]	1.Making national / EU regulations stricter, with heavy fines for offenders 2. Better enforcement of existing environmental legislation 3. Making everyone pay more taxes, prices, etc. to cover environmental costs 4. Only taxing those who cause environmental problems 5. Relying on initiatives from industry, farmers, etc. 6.Giving environmental NGOs/associations seeking to protect the environment more say in decisions about protecting the environment 7. Higher financial incentives (tax breaks, subsides, etc.) to industry, commerce and to citizens 8. Raising general environmental awareness 9. None of these (spontaneous) 10. Other(spontaneous) 11. DK	EB 58.0 (2002) & EB 62.1 (2004)
QC6a. For you, among the following themes, which are the ones that the electoral campaign for the next European elections should concentrate on?	1.Unemployment 2. Crime	EB 69.2 (2008) & EB 71.1. (2009)

Questions	Measurement Scale	EB number & year
Firstly? [ONE ANSWER ONLY]	3. Terrorism 4. Economic growth 5. The single currency, the Euro 6. The future of pensions 7. Immigration 8. Agriculture 9. The powers and competences of the European institutions 10. The fight against climate change 11. European values and identity 12. The role of EU in the international scene 13. the preservation of the European social model 14. Inflation and purchase power 15. Other [SPONTANEOUS - SPECIFY] 16. DK.	
Personally do you think that you are well informed or not about.....	1.The different causes of climate change 2. the different consequences of climate change 3. Ways in which we can fight climate change	EB 69.2 (2008) & EB 71.1. (2009)
In your opinion, is each of the following currently doing too much, doing about the right amount, or not doing enough to fight climate change? TREND MODIFIED IN EB 72.1	1.The [NATIONALITY] government 2. The European Union 3. Regional and local authorities 4. Corporations and industry 5. Citizens themselves	EB 69.2 (2008) & EB 72.1 (2009)
Which of the following actions aimed at fighting climate change have you personally taken?	1.You have purchased a car that consumes less fuel, or is more environmentally friendly 2. You are reducing the use of your car, for example by car-sharing or using your car more efficiently 3. You have chosen an environmentally friendly way of transportation (by foot, bicycle, public transport) 4. You are reducing your consumption of energy at home (for example by turning down air conditioning or heating, not leaving appliances on standby, buying energy efficient products such as	EB 69.2 (2008) & EB 72.1 (2009)

Questions	Measurement Scale	EB number & year
	low-energy light bulbs or appliances) 5. You are reducing your consumption of water at home (for example not leaving water running when washing the dishes, etc) 6. Where possible you avoid taking short-haul flights 7. You have switched to an energy supplier or tariff supplying a greater share of energy from renewable sources than your previous one 8. You are separating most of your waste for recycling 9. You are reducing the consumption of disposable items (for example plastic bags, certain kind of packaging, etc.) 10. You buy seasonal and local products to avoid products that come from far away, and thus contribute to CO2 emissions (because of the transport) 11. You have installed equipment in your own home that generates renewable energy (for example, a wind turbine, solar panels) 12. Other (SPONTANEOUS) (M) 13.DK	
Personally, how much would you be prepared to pay more for energy produced from sources that emit less greenhouse gases in order to fight the climate change? In average, how much, in percent, would you be ready to pay more?		EB 69.2 (2008) & EB 72.1 (2009)
In your opinion, which of the following do you consider to be the most serious problem currently facing the world as a whole? Firstly? [+ Other 3 answers] In EB 71.1 & EB 72.1. NO MORE SPLIT (!!!)	1.Climate Change 2. International Terrorism 3. Poverty, lack of food and drinking water 4. The spread of the infectious disease 5. A major global economic downturn 6. The proliferation of nuclear weapons 7. Armed conflicts 8. The increasing world population 9. None SPONTANEOUS 10. Other SPONTANEOUS 11. DK	EB 69.2 (2008) & EB 71.1. (2009) & EB 72.1 (2009)

Questions		Measurement Scale	EB number & year
And how serious a problem do you think climate change is at this moment> Please use a scale from 1 to 10, '1' would mean that it is 'not at all a serious problem' and '10' would mean that it is 'a problem extremely serious' In EB 71.1: NO MORE SPLIT (!!!) In EB 72.1 filter modified			EB 69.2 (2008) & EB 71.1. (2009) & EB 72.1 (2009)
For each of the following statements, please tell me whether you totally agree, tend to agree, tend to disagree or totally disagree.	1.Climate change is an unstoppable process, we cannot do anything about it 2. The seriousness of climate change has been exaggerated 3. Emission of CO2 has only a marginal impact on climate change 4. Fighting climate change can have a positive on the European economy 5. Alternative fuels, such as 'bio fuels', should be used to reduce greenhouse gas emissions 6. You personally have taken actions aimed at helping to fight climate change		EB 69.2 (2008) & EB 71.1. (2009) & EB 72.1 (2009)

Table A.3.1. Cross-country differences regarding Europeans' willingness to give part of the income for environmental protection, 1990-2009.

Note: The highest percentages of each response category are highlighted. Cases are not weighted.

	Strongly agree	Agree	Disagree	Strongly disagree	No answer	Don't know	Total
Austria	11%	36%	26%	21%	0%	6%	100%
Belgium	14%	42%	26%	15%	0%	3%	100%
Bulgaria	22%	45%	16%	7%	2%	8%	100%
Czech Republic	17%	53%	18%	6%	1%	5%	100%
Denmark	29%	47%	15%	6%	0%	4%	100%
Estonia	11%	46%	29%	9%	2%	4%	100%
Finland	10%	39%	28%	15%	0%	8%	100%
France	14%	38%	25%	21%	0%	2%	100%
Hungary	14%	37%	27%	18%	0%	4%	100%
Iceland	12%	52%	28%	6%	0%	2%	100%
Ireland	10%	44%	28%	11%	1%	6%	100%
Italy	14%	50%	24%	7%	1%	5%	100%
Lithuania	8%	34%	33%	11%	3%	11%	100%
Netherlands	16%	53%	24%	7%	0%	1%	100%
Poland	13%	41%	26%	12%	1%	8%	100%
Portugal	16%	41%	20%	13%	1%	10%	100%
Slovak Republic	14%	41%	21%	14%	1%	9%	100%
Slovenia	16%	63%	14%	3%	0%	4%	100%
Spain	15%	42%	25%	11%	1%	6%	100%
Sweden	24%	46%	16%	9%	1%	5%	100%
Great Britain	8%	41%	31%	12%	1%	7%	100%
West Germany	8%	33%	32%	20%	0%	7%	100%
Total	**14%**	**44%**	**24%**	**12%**	**1%**	**6%**	**100%**

Table A.3.2. Between- and within- country variability of Europeans' commitment to protecting the environment.

Note: Differences over time higher than 10% are highlighted. Cases are not weighted.

	Strongly agree	Agree	Disagree	Strongly disagree	NA	DK	Total
Austria, 1990-1993	15%	39%	20%	17%	0%	8%	100%
Austria, 1999-2001	9%	38%	29%	21%	0%	3%	100%
Austria, 2008-2010	10%	31%	29%	24%	1%	6%	100%
	11%	36%	26%	21%	0%	6%	100%
Belgium, 1990-1993	14%	38%	29%	14%		5%	100%
Belgium, 1999-2001	17%	41%	22%	18%	1%	2%	100%
Belgium, 2008-2010	11%	50%	26%	13%	0%	1%	100%
	14%	42%	26%	15%	0%	3%	100%
Bulgaria, 1990-1993	32%	46%	13%	3%	1%	5%	100%
Bulgaria, 1999-2001	18%	39%	23%	13%	1%	6%	100%
Bulgaria, 2008-2010	19%	49%	14%	5%	3%	11%	100%
	22%	45%	16%	7%	2%	8%	100%
Czech Republic, 1990-1993	25%	59%	11%	2%		3%	100%
Czech Republic, 1999-2001	16%	58%	18%	4%	1%	3%	100%
Czech Republic, 2008-2010	10%	40%	26%	14%	3%	8%	100%
	17%	53%	18%	6%	1%	5%	100%
Denmark, 1990-1993	38%	44%	13%	3%		2%	100%
Denmark, 1999-2001	29%	47%	15%	6%	0%	4%	100%
Denmark, 2008-2010	22%	48%	17%	9%	1%	4%	100%
	29%	47%	15%	6%	0%	4%	100%
Estonia, 1990-1993	20%	53%	19%	3%	4%		100%
Estonia, 1999-2001	6%	38%	36%	11%	1%	8%	100%
Estonia, 2008-2010	7%	47%	31%	11%	0%	5%	100%
	11%	46%	29%	9%	2%	4%	100%
Finland, 1990-1993	20%	43%	17%	15%	1%	5%	100%
Finland, 1999-2001	9%	42%	33%	12%	1%	4%	100%
Finland, 2008-2010	5%	34%	30%	18%		14%	100%
	10%	39%	28%	15%	0%	8%	100%
France, 1990-1993	17%	43%	24%	14%		4%	100%
France, 1999-2001	13%	32%	25%	27%	0%	3%	100%
France, 2008-2010	13%	41%	26%	19%	1%	1%	100%
	14%	38%	25%	21%	0%	2%	100%
Hungary, 1990-1993	19%	37%	26%	11%	0%	6%	100%
Hungary, 1999-2001	13%	39%	21%	25%	1%	2%	100%
Hungary, 2008-2010	11%	36%	32%	18%	0%	3%	100%
	14%	37%	27%	18%	0%	4%	100%
Iceland, 1990-1993	19%	58%	18%	4%		2%	100%
Iceland, 1999-2001	10%	52%	30%	6%		2%	100%
Iceland, 2008-2010	9%	47%	33%	8%	1%	2%	100%
	12%	52%	28%	6%	0%	2%	100%
Ireland, 1990-1993	14%	55%	23%	7%	0%	2%	100%
Ireland, 1999-2001	8%	44%	34%	9%	1%	4%	100%

	Strongly agree	Agree	Disagree	Strongly disagree	NA	DK	Total
Ireland, 2008-2010	7%	34%	26%	17%	3%	13%	100%
	10%	44%	28%	11%	1%	6%	100%
Italy, 1990-1993	17%	50%	23%	7%	0%	3%	100%
Italy, 1999-2001	10%	51%	27%	7%	1%	4%	100%
Italy, 2008-2010	14%	47%	21%	7%	3%	8%	100%
	14%	50%	24%	7%	1%	5%	100%
Lithuania, 1990-1993	20%	49%	21%	3%	7%		100%
Lithuania, 1999-2001	3%	23%	47%	15%	1%	10%	100%
Lithuania, 2008-2010	3%	31%	31%	14%	2%	18%	100%
	8%	34%	33%	11%	3%	11%	100%
Netherlands, 1990-1993	28%	53%	14%	4%		1%	100%
Netherlands, 1999-2001	16%	58%	21%	5%		0%	100%
Netherlands, 2008-2010	8%	49%	32%	10%	0%	1%	100%
	16%	53%	24%	7%	0%	1%	100%
Poland, 1990-1993	23%	47%	12%	11%	0%	6%	100%
Poland, 1999-2001	14%	43%	25%	12%	0%	6%	100%
Poland, 2008-2010	5%	35%	36%	13%	1%	10%	100%
	13%	41%	26%	12%	1%	8%	100%
Portugal, 1990-1993	38%	40%	7%	8%		6%	100%
Portugal, 1999-2001	5%	50%	28%	10%	1%	7%	100%
Portugal, 2008-2010	6%	35%	25%	18%	1%	15%	100%
	16%	41%	20%	13%	1%	10%	100%
Slovak Republic, 1990-1993	20%	50%	17%	5%	0%	8%	100%
Slovak Republic, 1999-2001	15%	39%	25%	17%		4%	100%
Slovak Republic, 2008-2010	9%	36%	21%	19%	3%	14%	100%
	14%	41%	21%	14%	1%	9%	100%
Slovenia, 1990-1993	20%	62%	7%	3%	0%	8%	100%
Slovenia, 1999-2001	15%	64%	14%	3%	1%	3%	100%
Slovenia, 2008-2010	13%	64%	18%	3%	0%	2%	100%
	16%	63%	14%	3%	0%	4%	100%
Spain, 1990-1993	20%	41%	24%	9%	0%	6%	100%
Spain, 1999-2001	11%	44%	29%	11%	1%	5%	100%
Spain, 2008-2010	9%	43%	24%	16%	1%	7%	100%
	15%	42%	25%	11%	1%	6%	100%
Sweden, 1990-1993	35%	44%	10%	8%		3%	100%
Sweden, 1999-2001	24%	54%	11%	10%		1%	100%
Sweden, 2008-2010	15%	42%	24%	8%	2%	9%	100%
	24%	46%	16%	9%	1%	5%	100%
Great Britain, 1990-1993	13%	52%	24%	6%		4%	100%
Great Britain, 1999-2001	5%	37%	36%	12%	2%	8%	100%
Great Britain, 2008-2010	6%	37%	32%	16%	1%	10%	100%
	8%	41%	31%	12%	1%	7%	100%
Germany West, 1990-1993	10%	38%	32%	12%	0%	9%	100%
Germany West, 1999-2001	4%	26%	32%	34%	0%	3%	100%
Germany West, 2008-2010	7%	30%	34%	22%	1%	7%	100%

	Strongly agree	Agree	Disagree	Strongly disagree	NA	DK	Total
	8%	33%	32%	20%	0%	7%	100%
All countries, 1990-1993	21%	47%	20%	8%	1%	5%	100%
All countries, 1999-2001	12%	44%	26%	13%	1%	4%	100%
All countries, 2008-2010	10%	41%	27%	14%	1%	8%	100%
TOTAL	14%	44%	24%	12%	1%	6%	100%

Table A.3.3. Europeans' willingness to give part of their income for environmental protection, by country of residence and their preferences for Freedom/Equality, 1990-2009.

Note: Cases are not weighted.

		Giving part of the income for environmental protection						Total
		No answer	Don't know	Strongly agree	Agree	Disagree	Strongly disagree	
Austria	no answer	5.0%	5.0%	10.0%	30.0%	5.0%	45.0%	100%
	don't know	0.4%	15.0%	8.5%	23.5%	25.2%	27.4%	100%
	freedom above equality	0.3%	5.0%	10.4%	36.8%	26.0%	21.5%	100%
	equality above freedom	0.5%	4.6%	13.4%	38.6%	25.3%	17.6%	100%
	neither	0.6%	9.9%	8.0%	29.6%	29.6%	22.3%	100%
	Total	0.4%	5.8%	11.2%	36.2%	25.9%	20.7%	100%
Belgium	no answer	6.1%	21.2%	9.1%	21.2%	12.1%	30.3%	100%
	don't know		13.6%	7.0%	35.2%	29.1%	15.0%	100%
	freedom above equality	0.2%	2.3%	13.8%	42.1%	27.0%	14.6%	100%
	equality above freedom	0.4%	2.4%	15.2%	43.4%	24.3%	14.3%	100%
	neither	1.5%	5.6%	14.3%	29.7%	26.3%	22.5%	100%
	Total	0.4%	3.0%	14.2%	41.5%	25.8%	15.1%	100%
Bulgaria	no answer	6.1%	8.2%	24.5%	46.9%	6.1%	8.2%	100%
	don't know	4.3%	17.9%	7.6%	26.6%	23.9%	19.6%	100%
	freedom above equality	1.5%	6.5%	24.1%	46.6%	16.1%	5.2%	100%
	equality above freedom	1.2%	7.7%	22.3%	46.1%	16.2%	6.6%	100%
	neither	3.5%	14.2%	16.8%	38.9%	15.0%	11.5%	100%
	Total	1.6%	7.8%	22.3%	45.2%	16.4%	6.7%	100%
Czech Republic	no answer	13.6%	10.2%	13.6%	30.5%	20.3%	11.9%	100%
	don't know	4.7%	15.2%	7.1%	39.3%	23.2%	10.4%	100%
	freedom above equality	0.7%	3.0%	18.9%	56.8%	15.9%	4.8%	100%
	equality above freedom	0.9%	4.3%	16.9%	50.9%	19.3%	7.8%	100%
	neither	2.8%	10.7%	14.7%	40.9%	23.0%	7.9%	100%
	Total	1.2%	4.5%	17.4%	52.7%	17.9%	6.4%	100%
Denmark	no answer	45.5%	45.5%			9.1%		100%
	don't know	1.2%	12.0%	26.5%	39.2%	15.1%	6.0%	100%

		Giving part of the income for environmental protection						Total
		No answer	Don't know	Strongly agree	Agree	Disagree	Strongly disagree	
	freedom above equality	0.1%	2.7%	26.6%	48.1%	16.3%	6.1%	100%
	equality above freedom	0.4%	2.5%	33.1%	45.2%	12.8%	6.0%	100%
	neither		7.6%	27.8%	46.2%	12.7%	5.7%	100%
	Total	0.4%	3.5%	28.6%	46.5%	15.0%	6.0%	100%
Estonia	no answer	16.7%	2.8%	5.6%	50.0%	20.8%	4.2%	100%
	don't know		11.8%	4.7%	31.8%	36.5%	15.3%	100%
	freedom above equality	1.3%	3.3%	11.2%	47.1%	28.7%	8.4%	100%
	equality above freedom	0.8%	4.5%	10.8%	45.9%	30.2%	7.8%	100%
	neither	3.0%	8.5%	5.5%	39.8%	30.3%	12.9%	100%
	Total	1.5%	4.2%	10.5%	46.0%	29.3%	8.5%	100%
Finland	no answer	22.7%	4.5%	4.5%	18.2%	27.3%	22.7%	100%
	don't know	0.3%	21.1%	8.0%	28.5%	24.3%	17.8%	100%
	freedom above equality	0.1%	6.1%	9.7%	37.5%	30.1%	16.4%	100%
	equality above freedom		6.5%	10.1%	45.3%	27.4%	10.8%	100%
	neither	2.0%	12.0%	16.0%	46.0%	6.0%	18.0%	100%
	Total	0.3%	8.2%	9.7%	39.0%	28.0%	14.8%	100%
France	no answer	6.2%		6.2%	31.2%	18.8%	100%	100%
	don't know	0.7%	10.9%	5.8%	42.0%	23.9%	100%	100%
	freedom above equality	0.3%	1.3%	13.2%	37.2%	25.6%	*22.4%*	100%
	equality above freedom	0.2%	2.1%	15.2%	38.5%	24.9%	*19.2%*	100.0%
	neither	0.7%	3.6%	8.6%	34.5%	25.9%	*26.6%*	100%
	Total	0.3%	2.1%	13.7%	37.8%	25.2%	20.9%	100%
Hungary	no answer	5.0%	15.0%	5.0%	35.0%	15.0%	*25%*	100%
	don't know		15.1%	6.5%	24.1%	33.7%	*20.6%*	100%
	freedom above equality	0.3%	2.5%	13.8%	38.4%	27.8%	*17.1%*	100%
	equality above freedom	0.3%	2.9%	14.7%	39.3%	24.4%	*18.4%*	100%
	neither	1.2%	8.7%	15.6%	26.0%	31.8%	16.8%	100%
	Total	0.3%	3.8%	13.8%	37.4%	26.8%	17.9%	100%
Iceland	no answer	16.7%	5.6%	11.1%	27.8%	5.6%	33.3%	100%
	don't know		5.6%	16.7%	58.3%	13.9%	5.6%	100%
	freedom above equality	0.4%	1.6%	10.7%	48.8%	32.0%	6.6%	100%
	equality above freedom	0.2%	1.6%	12.5%	55.3%	25.5%	4.8%	100%
	neither		5.9%	19.1%	52.9%	14.7%	7.4%	100%
	Total	0.4%	1.8%	11.9%	52.2%	27.8%	5.9%	100%
Ireland	no answer	12.9%	16.1%	6.5%	19.4%	32.3%	12.9%	100%
	don't know	6.2%	18.5%	3.7%	28.4%	30.2%	13.0%	100%

		Giving part of the income for environmental protection						Total
		No answer	Don't know	Strongly agree	Agree	Disagree	Strongly disagree	
	freedom above equality	0.7%	6.5%	10.4%	41.4%	28.7%	12.3%	100%
	equality above freedom	1.0%	4.5%	10.1%	49.9%	24.8%	9.7%	100%
	neither	0.7%	3.6%	7.9%	39.3%	37.1%	11.4%	100%
	Total	1.3%	6.2%	9.8%	44.1%	27.5%	11.1%	100%
Italy	no answer	18.6%	13.6%	10.2%	35.6%	15.3%	6.8%	100%
	don't know	1.8%	21.0%	6.2%	33.8%	30.1%	7.0%	100%
	freedom above equality	1.0%	3.7%	12.8%	49.4%	25.8%	7.3%	100%
	equality above freedom	0.9%	3.7%	14.8%	53.4%	20.8%	6.5%	100%
	neither	2.1%	7.2%	15.0%	40.0%	26.3%	9.5%	100%
	Total	1.3%	4.9%	13.6%	49.6%	23.6%	7.1%	100%
Lithuania	no answer	11.6%	5.1%	6.5%	40.6%	29.7%	6.5%	100%
	don't know	0.8%	28.1%	0.8%	11.2%	40.5%	18.6%	100%
	freedom above equality	3.5%	8.2%	10.1%	37.6%	31.0%	9.5%	100%
	equality above freedom	2.7%	9.8%	7.1%	32.9%	34.1%	13.4%	100%
	neither	3.4%	19.3%	3.8%	27.7%	31.9%	13.9%	100%
	Total	3.4%	10.7%	8.1%	34.0%	32.5%	11.4%	100%
Netherlands	no answer			25.0%	50.0%	25.0%		100%
	don't know		7.7%	5.1%	33.3%	38.5%	15.4%	100%
	freedom above equality	0.1%	0.6%	14.9%	53.1%	24.0%	7.3%	100%
	equality above freedom		0.9%	18.1%	52.6%	21.9%	6.6%	100%
	neither		1.1%	17.2%	46.2%	29.0%	6.5%	100%
	Total	0.1%	0.8%	16.1%	52.5%	23.5%	7.1%	100%
Poland	no answer		16.7%	11.1%	16.7%	50.0%	5.6%	100%
	don't know	1.2%	17.0%	7.5%	29.5%	28.2%	16.6%	100%
	freedom above equality	0.4%	6.4%	13.5%	42.9%	25.3%	11.5%	100%
	equality above freedom	0.4%	6.7%	12.5%	41.5%	26.4%	12.5%	100%
	neither	0.7%	15.6%	11.6%	32.0%	22.4%	17.7%	100%
	Total	0.5%	7.6%	12.6%	40.9%	25.9%	12.4%	100%
Portugal	no answer	9.1%	18.2%		45.5%	9.1%	18.2%	100%
	don't know	1.2%	26.7%	10.4%	29.1%	16.9%	15.6%	100%
	freedom above equality	0.5%	6.8%	16.3%	42.4%	20.6%	13.4%	100%
	equality above freedom	0.6%	9.0%	18.0%	41.3%	19.8%	11.4%	100%
	neither	0.4%	11.1%	8.6%	41.2%	24.7%	14.0%	100%
	Total	0.6%	9.9%	16.1%	40.6%	20.1%	12.7%	100%
Slovak Republic	no answer	12.5%	20.0%	7.5%	17.5%	15.0%	27.5%	100%
	don't know	2.7%	26.8%	6.0%	26.3%	20.9%	17.3%	100%

		Giving part of the income for environmental protection						Total
		No answer	Don't know	Strongly agree	Agree	Disagree	Strongly disagree	
	freedom above equality	0.6%	6.6%	16.0%	45.4%	19.3%	12.1%	100%
	equality above freedom	1.2%	7.1%	14.3%	40.3%	23.4%	13.7%	100%
	neither	0.3%	8.8%	10.0%	36.3%	22.7%	22.1%	100%
	Total	1.1%	9.0%	14.0%	41.1%	20.9%	14.0%	100%
Slovenia	no answer	11.1%	16.7%	11.1%	44.4%	16.7%		100%
	don't know		14.9%	9.8%	55.3%	16.1%	3.9%	100%
	freedom above equality	0.4%	3.3%	16.3%	63.5%	13.2%	3.2%	100%
	equality above freedom	0.2%	2.3%	16.0%	66.5%	12.7%	2.3%	100%
	neither	1.5%	5.6%	16.9%	52.8%	17.9%	5.1%	100%
	Total	0.4%	4.0%	15.7%	63.4%	13.5%	3.0%	100%
Spain	no answer	10.3%	3.4%	17.2%	20.7%	44.8%	3.4%	100%
	don't know	0.8%	14.6%	10.5%	26.9%	32.2%	15.1%	100%
	freedom above equality	0.7%	4.7%	15.4%	43.6%	24.4%	11.1%	100%
	equality above freedom	0.5%	6.3%	14.5%	44.4%	23.9%	10.4%	100%
	neither	0.5%	8.0%	14.7%	40.6%	25.7%	10.6%	100%
	Total	0.7%	6.3%	14.7%	42.3%	25.0%	11.0%	100%
Sweden	no answer	27.6%	13.8%	13.8%	31.0%	6.9%	6.9%	100%
	don't know		15.6%	17.0%	42.9%	16.0%	8.5%	100%
	freedom above equality	0.6%	3.4%	23.8%	47.0%	16.0%	9.2%	100%
	equality above freedom	0.7%	3.9%	26.0%	46.9%	15.1%	7.3%	100%
	neither		5.5%	30.8%	41.8%	12.1%	9.9%	100%
	Total	0.8%	4.5%	24.2%	46.4%	15.6%	8.6%	100%
Great Britain	no answer	15.2%	15.2%	6.1%	24.2%	39.4%		100%
	don't know	4.7%	18.7%	3.6%	26.4%	32.9%	13.6%	100%
	freedom above equality	0.7%	5.9%	8.2%	41.3%	31.4%	12.5%	100%
	equality above freedom	0.7%	6.9%	8.4%	45.2%	28.6%	10.2%	100%
	neither	0.4%	11.0%	5.5%	34.2%	35.3%	13.6%	100%
	Total	1.0%	7.2%	7.8%	41.3%	30.8%	11.8%	100%
Germany West	no answer		6.2%	6.2%	50.0%	25.0%	12.5%	100%
	don't know	0.4%	18.3%	4.9%	27.8%	28.9%	19.7%	100%
	freedom above equality	0.4%	5.6%	7.6%	34.0%	33.1%	19.5%	100%
	equality above freedom	0.2%	6.3%	9.7%	33.7%	29.3%	20.8%	100%
	neither		10.5%	5.6%	26.9%	38.7%	18.3%	100%
	Total	0.3%	7.0%	7.8%	33.0%	32.2%	19.7%	100%
Total	no answer	12.8%	10.3%	9.6%	33.6%	21.6%	12.1%	100%
	don't know	1.6%	18.3%	8.0%	30.9%	26.3%	15.0%	100%

		Giving part of the income for environmental protection						Total
		No answer	Don't know	Strongly agree	Agree	Disagree	Strongly disagree	
	freedom above equality	0.7%	4.3%	14.4%	44.6%	24.4%	11.5%	100%
	equality above freedom	0.6%	4.7%	15.0%	45.6%	23.1%	10.9%	100%
	neither	1.2%	9.1%	12.2%	36.9%	26.4%	14.3%	100%
	Total	0.8%	5.6%	14.1%	43.7%	24.1%	11.7%	100%

Table A.3.4. Symmetric Measures of the variation of Europeans' willingness to give part of their income for environmental protection given by country of residence and their preferences for Freedom/Equality, 1990-2009.

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Austria	Ordinal by Ordinal	Kendall's tau-c	-.027	.011	-2.392	.017
	N of Valid Cases		4492			
Belgium	Ordinal by Ordinal	Kendall's tau-c	-.007	.010	-.703	.482
	N of Valid Cases		6213			
Bulgaria	Ordinal by Ordinal	Kendall's tau-c	-.005	.013	-.392	.695
	N of Valid Cases		3534			
Czech Republic	Ordinal by Ordinal	Kendall's tau-c	.025	.010	2.542	.011
	N of Valid Cases		5838			
Denmark	Ordinal by Ordinal	Kendall's tau-c	-.022	.012	-1.884	.060
	N of Valid Cases		3560			
Estonia	Ordinal by Ordinal	Kendall's tau-c	.010	.012	.824	.410
	N of Valid Cases		3531			
Finland	Ordinal by Ordinal	Kendall's tau-c	-.023	.015	-1.567	.117
	N of Valid Cases		2760			
France	Ordinal by Ordinal	Kendall's tau-c	-.018	.011	-1.621	.105
	N of Valid Cases		4118			
Hungary	Ordinal by Ordinal	Kendall's tau-c	-.015	.013	-1.152	.250
	N of Valid Cases		3512			
Iceland	Ordinal by Ordinal	Kendall's tau-c	-.052	.014	-3.718	.000
	N of Valid Cases		2478			
Ireland	Ordinal by Ordinal	Kendall's tau-c	-.001	.014	-.053	.958
	N of Valid Cases		3025			
Italy	Ordinal by Ordinal	Kendall's tau-c	-.013	.010	-1.280	.201
	N of Valid Cases		5537			
Lithuania	Ordinal by Ordinal	Kendall's tau-c	.023	.013	1.796	.073
	N of Valid Cases		3518			
Netherlands	Ordinal by Ordinal	Kendall's tau-c	-.030	.011	-2.629	.009
	N of Valid Cases		3574			
Poland	Ordinal by Ordinal	Kendall's tau-c	.006	.013	.439	.661
	N of Valid Cases		3587			
Portugal	Ordinal by Ordinal	Kendall's tau-c	.010	.013	.769	.442
	N of Valid Cases		3738			
Slovak Republic	Ordinal by Ordinal	Kendall's tau-c	.057	.013	4.478	.000
	N of Valid Cases		3976			

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Slovenia	Ordinal by Ordinal	Kendall's tau-c	.011	.012	.903	.366
	N of Valid Cases		3407			
Spain	Ordinal by Ordinal	Kendall's tau-c	-.017	.010	-1.631	.103
	N of Valid Cases		5337			
Sweden	Ordinal by Ordinal	Kendall's tau-c	-.008	.012	-.618	.537
	N of Valid Cases		3249			
Great Britain	Ordinal by Ordinal	Kendall's tau-c	-.011	.010	-1.146	.252
	N of Valid Cases		5849			
Germany West	Ordinal by Ordinal	Kendall's tau-c	.007	.011	.662	.508
	N of Valid Cases		4209			
Total	Ordinal by Ordinal	Kendall's tau-c	-.001	.003	-.582	.560
	N of Valid Cases		89042			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

Table A.4.b. Individual level predictors of Europeans' commitment to protecting the environment, 1990-2009. The goodness of fit of three multinomial regression models.

	Model3 Country*Time	**Model4** Country*Time Ecological Citizenship	**Model5** Country*Time Ecological Citizenship Income
Model Type	Logit Multinomial	Logit Multinomial	Logit Multinomial
Number of cases	88893	88893	72401
Log-Lik Intercept Only	-124837.102	-124837.102	-100519.806
Log-Lik Full Model	-118481.685	-115834.237	-92920.03
Prob > LR	0	0	0
McFadden's R2	0.051	0.072	0.076
McFadden's Adjusted R2	0.047	0.067	0.07
Maximum Likelihood R2	0.133	0.183	0.189
Cragg & Uhler's R2 (Nagelkerke)	0.142	0.195	0.202
AIC	2.676	2.619	2.583
AIC*n	237883.37	232828.475	187030.061
BIC	-770747.351	-774674.823	-617667.312
BIC'	-9748.085	-14268.107	-11484.479

Table A.4.1. The role of ecological citizenship and income in explaining Europeans' willingness to give part of their income for environmental protection, 1990-2009.

*Reference Category: "Strongly Disagree". R^2=0.202; Number of cases=72,401. Missing values due to Variable Income. Total number of cases=72,401

	Strongly Agree						Agree						Disagree						DK					
	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max
Intercept	0.307	0.037	-9.850	0.000	0.243	0.388	0.870	0.087	-1.390	0.164	0.715	1.059	0.724	0.080	-2.920	0.003	0.583	0.899	0.240	0.035	-9.750	0.000	0.180	0.320
Private Sphere																								
Individualization	1.136	0.040	3.620	0.000	1.060	1.218	1.119	0.033	3.790	0.000	1.056	1.186	1.090	0.034	2.730	0.006	1.025	1.159	1.140	0.053	2.800	0.005	1.040	1.249
NA+DK	0.655	0.079	-3.500	0.000	0.517	0.830	0.797	0.076	-2.380	0.017	0.662	0.961	0.895	0.087	-1.140	0.254	0.739	1.083	1.932	0.220	5.790	0.000	1.546	2.415
Control over Life	1.364	0.051	8.330	0.000	1.269	1.469	1.403	0.043	10.920	0.000	1.320	1.491	1.228	0.040	6.300	0.000	1.152	1.309	1.135	0.055	2.630	0.008	1.033	1.248
NA+DK	0.757	0.098	-2.140	0.032	0.587	0.977	0.797	0.085	-2.140	0.032	0.647	0.981	0.921	0.096	-0.790	0.429	0.750	1.130	1.998	0.240	5.770	0.000	1.579	2.528
Justice: Equality above Freedom																								
Equality	1.208	0.044	5.220	0.000	1.125	1.296	1.156	0.035	4.710	0.000	1.088	1.227	1.027	0.033	0.830	0.406	0.964	1.095	1.205	0.060	3.760	0.000	1.093	1.329
neither	0.774	0.059	-3.380	0.001	0.667	0.898	0.759	0.047	-4.480	0.000	0.672	0.856	0.940	0.060	-0.970	0.332	0.829	1.065	1.469	0.124	4.550	0.000	1.245	1.734
NA+DK	0.539	0.043	-7.840	0.000	0.461	0.629	0.721	0.043	-5.500	0.000	0.641	0.810	0.889	0.055	-1.900	0.058	0.788	1.004	1.971	0.147	9.080	0.000	1.703	2.282
Compassion: Societal related reasons for poverty																								
Societal	1.364	0.048	8.870	0.000	1.273	1.460	1.339	0.039	9.970	0.000	1.264	1.418	1.134	0.035	4.070	0.000	1.067	1.205	1.172	0.054	3.460	0.001	1.071	1.282
none of these	1.072	0.107	0.700	0.486	0.882	1.303	1.150	0.098	1.630	0.103	0.972	1.359	1.159	0.105	1.630	0.104	0.970	1.386	1.455	0.176	3.100	0.002	1.147	1.845
NA+DK	0.907	0.093	-0.940	0.345	0.741	1.110	1.023	0.088	0.260	0.791	0.865	1.210	0.926	0.083	-0.870	0.387	0.777	1.103	1.883	0.199	5.990	0.000	1.531	2.317
Non-reciprocal responsibility																								
Volunteering	1.878	0.078	15.120	0.000	1.731	2.038	1.682	0.061	14.220	0.000	1.565	1.807	1.384	0.053	8.420	0.000	1.283	1.493	1.193	0.071	2.970	0.003	1.062	1.341
Horizontal relationships between citizens																								
Trust People	1.722	0.066	14.180	0.000	1.598	1.857	1.525	0.051	12.730	0.000	1.429	1.627	1.192	0.042	4.980	0.000	1.113	1.278	1.358	0.070	5.940	0.000	1.227	1.502
NA+DK	1.069	0.096	0.740	0.461	0.896	1.275	1.187	0.087	2.350	0.019	1.029	1.369	1.124	0.084	1.550	0.120	0.970	1.302	1.994	0.188	7.320	0.000	1.658	2.399
Local & National Sense of Belonging																								
Sub-Regional Only	0.683	0.027	-9.480	0.000	0.631	0.739	0.772	0.025	-7.960	0.000	0.724	0.823	0.953	0.032	-1.400	0.160	0.892	1.019	0.934	0.047	-1.360	0.175	0.847	1.031
Supra-National	2.016	0.232	6.110	0.000	1.610	2.525	1.236	0.131	2.000	0.045	1.005	1.521	0.855	0.100	-1.340	0.182	0.680	1.076	0.547	0.127	-2.590	0.010	0.346	0.864
Local & Global	1.548	0.098	6.870	0.000	1.366	1.753	1.236	0.071	3.680	0.000	1.104	1.383	0.992	0.062	-0.120	0.903	0.878	1.122	0.978	0.090	-0.240	0.809	0.816	1.171
NA+DK	0.902	0.079	-1.190	0.235	0.760	1.070	0.738	0.056	-4.030	0.000	0.636	0.855	0.841	0.067	-2.160	0.031	0.719	0.984	1.114	0.116	1.030	0.301	0.908	1.366
Income																								
Medium	1.444	0.058	9.230	0.000	1.336	1.562	1.526	0.050	12.760	0.000	1.430	1.628	1.314	0.046	7.880	0.000	1.228	1.406	1.134	0.057	2.490	0.013	1.027	1.251
High	1.768	0.077	13.120	0.000	1.624	1.926	1.844	0.067	16.820	0.000	1.717	1.980	1.299	0.050	6.780	0.000	1.204	1.401	1.076	0.061	1.280	0.201	0.962	1.203
Time																								
1999-2001	0.412	0.072	-5.040	0.000	0.292	0.581	0.735	0.093	-2.440	0.015	0.574	0.942	1.049	0.144	0.350	0.725	0.802	1.373	0.378	0.093	-3.970	0.000	0.234	0.611
2008-2010	0.476	0.074	-4.800	0.000	0.352	0.645	0.576	0.070	-4.570	0.000	0.455	0.730	1.046	0.135	0.350	0.729	0.812	1.347	0.493	0.093	-3.770	0.000	0.341	0.712
Country																								
Belgium	1.264	0.193	1.530	0.126	0.937	1.706	1.273	0.163	1.880	0.060	0.990	1.636	1.700	0.235	3.830	0.000	1.296	2.231	0.619	0.124	-2.390	0.017	0.418	0.917
Bulgaria	12.622	2.689	11.900	0.000	8.313	19.164	6.603	1.334	9.340	0.000	4.444	9.812	3.621	0.795	5.860	0.000	2.354	5.568	2.872	0.765	3.960	0.000	1.703	4.842

	Strongly Agree						Agree						Disagree						DK					
	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max
Czech R	16.416	3.237	14.190	0.000	11.154	24.161	14.142	2.612	14.340	0.000	9.847	20.311	4.629	0.924	7.680	0.000	3.130	6.846	3.036	0.741	4.550	0.000	1.881	4.898
Denmark	16.693	4.042	11.620	0.000	10.385	26.832	7.107	1.654	8.430	0.000	4.505	11.213	3.837	0.961	5.370	0.000	2.349	6.268	1.087	0.393	0.230	0.818	0.535	2.208
Estonia	9.696	2.216	9.940	0.000	6.195	15.175	8.890	1.888	10.290	0.000	5.863	13.479	5.624	1.259	7.720	0.000	3.627	8.722	3.118	0.854	4.150	0.000	1.823	5.332
Finland	1.146	0.209	0.750	0.454	0.802	1.638	0.977	0.152	-0.150	0.879	0.720	1.324	0.808	0.145	-1.190	0.235	0.569	1.149	0.526	0.127	-2.660	0.008	0.328	0.844
France	1.409	0.236	2.050	0.040	1.015	1.955	1.333	0.189	2.030	0.043	1.010	1.759	1.364	0.211	2.000	0.045	1.006	1.848	0.504	0.124	-2.780	0.005	0.312	0.817
Hungary	2.268	0.367	5.060	0.000	1.651	3.116	1.580	0.223	3.240	0.001	1.198	2.083	2.010	0.305	4.600	0.000	1.492	2.707	1.009	0.208	0.040	0.967	0.673	1.511
Iceland	4.227	1.095	5.570	0.000	2.545	7.022	5.243	1.236	7.030	0.000	3.303	8.322	3.117	0.792	4.470	0.000	1.894	5.128	0.721	0.310	-0.760	0.448	0.310	1.677
Ireland	1.849	0.342	3.320	0.001	1.287	2.658	2.520	0.398	5.850	0.000	1.849	3.436	2.243	0.386	4.690	0.000	1.600	3.143	0.609	0.174	-1.730	0.083	0.348	1.067
Italy	3.225	0.570	6.630	0.000	2.281	4.561	3.778	0.588	8.540	0.000	2.785	5.126	3.701	0.630	7.690	0.000	2.651	5.167	1.034	0.256	0.130	0.893	0.636	1.681
Lithuania	9.026	2.075	9.570	0.000	5.753	14.163	8.084	1.731	9.760	0.000	5.313	12.299	6.028	1.351	8.020	0.000	3.885	9.352	5.330	1.374	6.490	0.000	3.215	8.834
Netherlands	7.148	1.602	8.770	0.000	4.606	11.091	5.177	1.095	7.770	0.000	3.419	7.837	2.564	0.601	4.020	0.000	1.620	4.058	0.207	0.130	-2.500	0.012	0.060	0.712
Poland	2.587	0.416	5.910	0.000	1.887	3.546	1.899	0.268	4.540	0.000	1.440	2.505	0.930	0.156	-0.430	0.667	0.669	1.293	0.966	0.206	-0.160	0.873	0.636	1.468
Portugal	6.213	1.089	10.420	0.000	4.406	8.760	2.391	0.391	5.330	0.000	1.736	3.294	0.776	0.160	-1.230	0.219	0.518	1.163	1.079	0.243	0.340	0.734	0.695	1.677
Slovak R	6.347	1.206	9.730	0.000	4.374	9.210	5.451	0.938	9.860	0.000	3.891	7.636	3.082	0.580	5.980	0.000	2.131	4.457	3.279	0.732	5.320	0.000	2.117	5.079
Slovenia	12.044	2.695	11.120	0.000	7.768	18.675	12.921	2.681	12.330	0.000	8.603	19.405	2.564	0.611	3.950	0.000	1.607	4.091	3.708	0.962	5.050	0.000	2.231	6.165
Spain	3.337	0.475	8.470	0.000	2.525	4.411	2.325	0.290	6.770	0.000	1.821	2.967	2.384	0.325	6.380	0.000	1.825	3.113	1.269	0.226	1.340	0.181	0.895	1.798
Sweden	2.934	0.520	6.070	0.000	2.072	4.153	2.706	0.393	6.850	0.000	2.036	3.598	2.097	0.315	4.930	0.000	1.563	2.815	2.812	0.576	5.050	0.000	1.882	4.200
UK	2.823	0.525	5.580	0.000	1.961	4.064	4.019	0.652	8.570	0.000	2.925	5.524	3.528	0.616	7.220	0.000	2.505	4.969	1.402	0.349	1.360	0.175	0.861	2.283
Germany West	0.965	0.140	-0.250	0.806	0.727	1.282	1.376	0.162	2.720	0.007	1.093	1.732	2.246	0.286	6.370	0.000	1.751	2.882	1.235	0.203	1.280	0.201	0.894	1.705
Country*Time																								
Belgium #																								
1999-2001	1.677	0.382	2.270	0.023	1.073	2.622	0.933	0.163	-0.400	0.692	0.662	1.314	0.533	0.101	-3.320	0.001	0.368	0.773	1.162	0.406	0.430	0.667	0.586	2.304
2008-2010	1.199	0.267	0.810	0.416	0.774	1.855	1.897	0.334	3.640	0.000	1.343	2.678	0.865	0.162	-0.770	0.440	0.599	1.250	0.422	0.195	-1.870	0.062	0.170	1.044
Bulgaria #																								
1999-2001	0.263	0.076	-4.610	0.000	0.149	0.464	0.228	0.058	-5.840	0.000	0.139	0.375	0.364	0.099	-3.710	0.000	0.213	0.621	0.904	0.347	-0.260	0.793	0.426	1.918
2008-2010	0.979	0.273	-0.070	0.940	0.567	1.691	1.412	0.360	1.350	0.176	0.856	2.327	0.732	0.202	-1.130	0.259	0.426	1.258	4.342	1.460	4.370	0.000	2.246	8.392
Czech R #																								
1999-2001	0.800	0.226	-0.790	0.430	0.460	1.392	0.665	0.164	-1.660	0.097	0.411	1.077	0.767	0.203	-1.000	0.316	0.457	1.287	1.780	0.668	1.540	0.124	0.853	3.715
2008-2010	0.112	0.028	-8.660	0.000	0.069	0.184	0.154	0.034	-8.550	0.000	0.100	0.236	0.309	0.072	-5.040	0.000	0.195	0.487	1.026	0.310	0.090	0.932	0.568	1.854
Denmark #																								
1999-2001	0.822	0.263	-0.610	0.540	0.439	1.540	0.650	0.190	-1.480	0.139	0.367	1.151	0.506	0.159	-2.160	0.031	0.273	0.939	2.411	1.154	1.840	0.066	0.944	6.158
2008-2010	0.331	0.099	-3.710	0.000	0.184	0.593	0.552	0.152	-2.150	0.031	0.321	0.948	0.430	0.128	-2.840	0.004	0.240	0.769	1.614	0.707	1.090	0.275	0.684	3.809
Estonia #																								
1999-2001	0.162	0.052	-5.670	0.000	0.086	0.303	0.252	0.065	-5.340	0.000	0.152	0.418	0.489	0.132	-2.660	0.008	0.289	0.829	1.298	0.492	0.690	0.491	0.618	2.729
2008-2010	0.158	0.046	-6.330	0.000	0.090	0.280	0.385	0.096	-3.850	0.000	0.237	0.626	0.431	0.112	-3.240	0.001	0.259	0.717	0.627	0.218	-1.340	0.179	0.317	1.239
Finland #																								
1999-2001	1.520	0.420	1.510	0.130	0.884	2.612	1.810	0.387	2.780	0.005	1.191	2.752	2.472	0.581	3.850	0.000	1.559	3.919	3.501	1.330	3.300	0.001	1.663	7.370
2008-2010	0.435	0.120	-3.020	0.003	0.254	0.747	1.062	0.219	0.290	0.770	0.709	1.592	1.460	0.332	1.660	0.096	0.935	2.281	3.533	1.107	4.030	0.000	1.911	6.531

	Strongly Agree						Agree						Disagree						DK					
	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max
France #																								
1999-2001	0.954	0.229	-0.190	0.846	0.596	1.527	0.532	0.098	-3.410	0.001	0.371	0.765	0.541	0.107	-3.090	0.002	0.367	0.799	0.913	0.353	-0.240	0.814	0.428	1.946
2008-2010	1.111	0.250	0.470	0.640	0.715	1.727	1.249	0.227	1.220	0.222	0.875	1.783	0.831	0.162	-0.950	0.342	0.568	1.217	0.296	0.136	-2.650	0.008	0.120	0.728
Hungary #																								
1999-2001	0.663	0.165	-1.650	0.098	0.407	1.079	0.612	0.118	-2.560	0.011	0.420	0.892	0.330	0.069	-5.300	0.000	0.219	0.497	0.527	0.200	-1.690	0.092	0.250	1.110
2008-2010	0.854	0.193	-0.700	0.485	0.549	1.329	1.160	0.213	0.810	0.418	0.810	1.662	0.854	0.164	-0.820	0.411	0.586	1.245	0.461	0.161	-2.220	0.027	0.232	0.914
Iceland #																								
1999-2001	0.992	0.343	-0.020	0.983	0.504	1.955	0.908	0.268	-0.330	0.742	0.509	1.618	1.325	0.414	0.900	0.367	0.719	2.443	2.127	1.206	1.330	0.183	0.700	6.463
2008-2010	0.395	0.134	-2.730	0.006	0.202	0.769	0.637	0.185	-1.560	0.120	0.360	1.125	0.915	0.280	-0.290	0.770	0.502	1.666	1.927	1.033	1.220	0.221	0.674	5.511
Ireland #																								
1999-2001	1.243	0.368	0.730	0.463	0.696	2.219	1.004	0.231	0.020	0.985	0.640	1.577	1.089	0.266	0.350	0.727	0.675	1.756	3.601	1.484	3.110	0.002	1.606	8.075
2008-2010	0.937	0.267	-0.230	0.819	0.535	1.639	0.742	0.168	-1.310	0.189	0.476	1.158	0.599	0.144	-2.130	0.033	0.373	0.960	6.370	2.294	5.140	0.000	3.145	12.902
Italy#																								
1999-2001	1.527	0.398	1.620	0.104	0.916	2.546	1.406	0.296	1.620	0.105	0.931	2.124	0.929	0.209	-0.330	0.744	0.597	1.445	3.588	1.301	3.520	0.000	1.762	7.304
2008-2010	1.809	0.469	2.280	0.022	1.088	3.008	1.669	0.371	2.300	0.021	1.079	2.581	0.715	0.171	-1.400	0.161	0.447	1.143	5.386	1.785	5.080	0.000	2.813	10.313
Lithuania #																								
1999-2001	0.072	0.026	-7.190	0.000	0.035	0.148	0.107	0.030	-8.020	0.000	0.062	0.185	0.462	0.128	-2.790	0.005	0.269	0.795	0.654	0.252	-1.100	0.271	0.307	1.393
2008-2010	0.071	0.022	-8.620	0.000	0.039	0.130	0.202	0.050	-6.450	0.000	0.124	0.329	0.318	0.082	-4.470	0.000	0.192	0.526	1.061	0.331	0.190	0.850	0.576	1.954
Netherlands #																								
1999-2001	0.870	0.279	-0.430	0.665	0.465	1.630	1.009	0.285	0.030	0.975	0.580	1.754	1.035	0.318	0.110	0.912	0.567	1.888	2.200	1.904	0.910	0.362	0.404	11.997
2008-2010	0.221	0.064	-5.220	0.000	0.125	0.389	0.610	0.153	-1.970	0.048	0.374	0.996	1.020	0.277	0.070	0.942	0.599	1.736	2.018	1.451	0.980	0.329	0.493	8.256
Poland #																								
1999-2001	1.895	0.477	2.540	0.011	1.157	3.103	1.746	0.350	2.780	0.005	1.178	2.586	2.269	0.514	3.620	0.000	1.456	3.537	2.838	0.984	3.010	0.003	1.438	5.601
2008-2010	0.386	0.097	-3.780	0.000	0.236	0.632	1.096	0.208	0.480	0.628	0.756	1.590	2.353	0.494	4.080	0.000	1.560	3.549	3.456	0.977	4.390	0.000	1.986	6.013
Portugal #																								
1999-2001	0.311	0.111	-3.270	0.001	0.154	0.626	1.598	0.424	1.770	0.077	0.950	2.688	4.735	1.398	5.270	0.000	2.654	8.448	4.842	2.025	3.770	0.000	2.133	10.990
2008-2010	0.150	0.046	-6.240	0.000	0.083	0.272	0.600	0.139	-2.210	0.027	0.382	0.945	1.964	0.515	2.580	0.010	1.175	3.282	3.196	1.004	3.700	0.000	1.727	5.915
Slovak R #																								
1999-2001	0.414	0.107	-3.420	0.001	0.250	0.687	0.274	0.058	-6.100	0.000	0.181	0.415	0.383	0.088	-4.190	0.000	0.244	0.600	0.375	0.129	-2.850	0.004	0.191	0.737
2008-2010	0.235	0.062	-5.500	0.000	0.140	0.393	0.329	0.071	-5.190	0.000	0.216	0.501	0.268	0.063	-5.620	0.000	0.169	0.424	0.927	0.269	-0.260	0.795	0.526	1.636
Slovenia #																								
1999-2001	1.956	0.750	1.750	0.080	0.923	4.145	1.555	0.540	1.270	0.204	0.787	3.071	1.934	0.735	1.740	0.083	0.918	4.072	1.915	0.930	1.340	0.181	0.740	4.960
2008-2010	1.097	0.375	0.270	0.787	0.561	2.145	1.371	0.429	1.010	0.313	0.743	2.531	1.772	0.608	1.670	0.095	0.904	3.471	0.343	0.188	-1.950	0.051	0.117	1.005
Spain#																								
1999-2001	0.795	0.198	-0.920	0.358	0.488	1.296	0.995	0.190	-0.020	0.980	0.685	1.446	0.757	0.154	-1.370	0.172	0.507	1.129	1.362	0.459	0.920	0.358	0.704	2.636
2008-2010	0.571	0.128	-2.490	0.013	0.367	0.887	1.034	0.186	0.190	0.852	0.727	1.470	0.522	0.101	-3.360	0.001	0.357	0.763	1.451	0.400	1.350	0.177	0.845	2.491
Sweden #	1.000	(empty)					1.000	(empty)					1.000	(empty)					1.000	(empty)				
1999-2001	1.443	0.373	1.420	0.156	0.869	2.396	0.812	0.167	-1.010	0.313	0.542	1.217	0.350	0.080	-4.610	0.000	0.224	0.546	0.159	0.073	-4.010	0.000	0.064	0.390
2008-2010	1	(omitted)					1.000	(omitted)					1.000	(omitted)					1.000	(omitted)				

	Strongly Agree						Agree						Disagree						DK					
	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max	RRR	SE	z	P>|z|	CI-min	CI-max
UK																								
1999-2001	0.600	0.167	-1.840	0.066	0.348	1.034	0.533	0.114	-2.940	0.003	0.351	0.810	0.796	0.179	-1.020	0.309	0.512	1.236	3.096	1.105	3.170	0.002	1.538	6.232
2008-2010	0.354	0.090	-4.080	0.000	0.215	0.582	0.467	0.094	-3.790	0.000	0.315	0.693	0.491	0.104	-3.350	0.001	0.324	0.744	1.692	0.522	1.710	0.088	0.924	3.098
Germany West #																								
1999-2001	0.445	0.126	-2.860	0.004	0.255	0.776	0.316	0.057	-6.350	0.000	0.221	0.451	0.296	0.055	-6.600	0.000	0.206	0.425	0.442	0.152	-2.370	0.018	0.225	0.869
2008-2010	0.644	0.156	-1.820	0.069	0.401	1.034	0.640	0.111	-2.570	0.010	0.455	0.899	0.468	0.084	-4.240	0.000	0.330	0.665	0.853	0.228	-0.600	0.551	0.505	1.439

Table A.4.2. The confidence intervals of the predicted probabilities to Strongly Agree to give part of the income for environmental protection calculated for the category of green and non-green citizens. 22 Countries, 1990-2009.

*Mlogit, Nagelkerke R-square=0.20. Reference Category: Strongly Disagree. Reference Model presented in Table A.4.1.
**Grey colour highlights confidence intervals that overlap with those calculated for people who have the features of an ecological citizen.

		Ecological Citizenship (EC) G1		EC, Global G2		EC, National G3		EC, Freedom G4		nonEC, Local&Global G5		nonEC, Global G6		nonEC, National G7	
West Germany	1990	0.170	0.228	0.217	0.297	0.131	0.175	0.159	0.213	0.091	0.125	0.121	0.172	0.066	0.089
	1999	0.087	0.177	0.115	0.230	0.063	0.131	0.079	0.161	0.034	0.074	0.046	0.101	0.024	0.051
	2008	0.109	0.183	0.144	0.241	0.080	0.136	0.100	0.168	0.048	0.085	0.064	0.117	0.033	0.059
Belgium*	1990	0.237	0.313	0.292	0.390	0.187	0.249	0.222	0.295	0.133	0.182	0.172	0.241	0.098	0.134
	1999	0.245	0.316	0.299	0.391	0.195	0.252	0.230	0.297	0.133	0.179	0.169	0.235	0.098	0.132
	2009	0.147	0.206	0.184	0.263	0.114	0.160	0.137	0.192	0.081	0.116	0.104	0.156	0.059	0.085
Bulgaria	1991	0.435	0.522	0.502	0.604	0.373	0.452	0.420	0.507	0.322	0.399	0.388	0.485	0.262	0.326
	1999	0.269	0.360	0.332	0.444	0.215	0.289	0.254	0.341	0.152	0.214	0.196	0.281	0.112	0.158
	2008	0.293	0.372	0.357	0.458	0.241	0.306	0.281	0.358	0.199	0.259	0.254	0.338	0.156	0.200
Czech R.	1991	0.342	0.412	0.400	0.492	0.291	0.349	0.331	0.398	0.258	0.313	0.311	0.390	0.212	0.254
	1999	0.241	0.311	0.293	0.385	0.198	0.255	0.231	0.298	0.166	0.216	0.208	0.280	0.130	0.168
	2008	0.173	0.240	0.221	0.311	0.134	0.186	0.162	0.226	0.094	0.134	0.125	0.184	0.069	0.097
Denmark	1990	0.495	0.579	0.559	0.656	0.433	0.510	0.480	0.564	0.379	0.460	0.445	0.545	0.315	0.385
	1999	0.397	0.483	0.462	0.565	0.337	0.413	0.382	0.466	0.279	0.354	0.339	0.435	0.223	0.284
	2008	0.302	0.380	0.362	0.461	0.249	0.313	0.288	0.363	0.193	0.254	0.241	0.325	0.149	0.195
Estonia	1990	0.300	0.384	0.358	0.466	0.247	0.321	0.288	0.369	0.209	0.275	0.259	0.351	0.164	0.218
	1999	0.087	0.154	0.116	0.206	0.065	0.116	0.081	0.143	0.045	0.082	0.061	0.114	0.032	0.058
	2008	0.101	0.155	0.130	0.204	0.077	0.119	0.094	0.145	0.055	0.087	0.073	0.119	0.040	0.062
Finland	1990	0.273	0.374	0.333	0.453	0.220	0.305	0.258	0.355	0.155	0.227	0.197	0.291	0.115	0.170
	2000	0.132	0.201	0.170	0.261	0.101	0.154	0.122	0.187	0.068	0.109	0.091	0.149	0.049	0.078
	2009	0.076	0.135	0.102	0.182	0.055	0.099	0.069	0.124	0.033	0.063	0.046	0.088	0.023	0.043
France	1990	0.258	0.346	0.316	0.423	0.206	0.280	0.243	0.328	0.150	0.211	0.192	0.273	0.112	0.158
	1999	0.226	0.303	0.279	0.377	0.176	0.237	0.209	0.282	0.109	0.155	0.139	0.205	0.079	0.111
	2008	0.199	0.266	0.245	0.334	0.156	0.209	0.185	0.249	0.106	0.148	0.135	0.195	0.078	0.107
Hungary	1991	0.313	0.402	0.378	0.488	0.253	0.329	0.296	0.383	0.189	0.253	0.239	0.328	0.142	0.191
	1999	0.208	0.298	0.256	0.370	0.163	0.237	0.194	0.280	0.107	0.162	0.136	0.213	0.078	0.118
	2008	0.201	0.276	0.251	0.348	0.157	0.216	0.187	0.258	0.107	0.152	0.138	0.203	0.078	0.110
Iceland	1990	0.232	0.331	0.283	0.403	0.190	0.272	0.221	0.316	0.155	0.230	0.195	0.293	0.120	0.180
	1999	0.137	0.206	0.173	0.264	0.106	0.160	0.127	0.193	0.079	0.124	0.104	0.166	0.059	0.091
	2009	0.101	0.170	0.132	0.222	0.077	0.129	0.094	0.158	0.054	0.094	0.072	0.129	0.039	0.067

		Ecological Citizenship (EC) G1		EC, Global G2		EC, National G3		EC, Freedom G4		nonEC, Local&Global G5		nonEC, Global G6		nonEC, National G7	
Ireland	1990	0.205	0.283	0.254	0.353	0.164	0.227	0.194	0.269	0.125	0.179	0.160	0.235	0.094	0.135
	1999	0.127	0.204	0.163	0.263	0.097	0.157	0.118	0.191	0.069	0.116	0.091	0.157	0.050	0.084
	2008	0.159	0.261	0.209	0.338	0.121	0.202	0.149	0.246	0.083	0.144	0.112	0.198	0.059	0.104
Italy*	1990	0.236	0.308	0.289	0.382	0.189	0.249	0.223	0.293	0.148	0.200	0.190	0.262	0.113	0.152
	1999	0.157	0.215	0.197	0.276	0.124	0.170	0.148	0.204	0.096	0.134	0.125	0.180	0.072	0.100
	2009	0.213	0.291	0.265	0.366	0.170	0.234	0.202	0.277	0.134	0.189	0.174	0.250	0.102	0.143
Lithuania	1990	0.294	0.378	0.354	0.463	0.239	0.314	0.281	0.362	0.199	0.264	0.251	0.342	0.154	0.207
	1999	0.049	0.118	0.069	0.164	0.034	0.084	0.044	0.107	0.020	0.052	0.029	0.074	0.014	0.035
	2008	0.060	0.110	0.083	0.154	0.043	0.080	0.055	0.101	0.028	0.052	0.040	0.077	0.019	0.036
Netherlands	1990	0.363	0.454	0.425	0.532	0.308	0.388	0.350	0.438	0.262	0.339	0.317	0.414	0.211	0.274
	1999	0.200	0.278	0.246	0.345	0.162	0.224	0.190	0.264	0.128	0.184	0.163	0.238	0.098	0.140
	2008	0.110	0.167	0.141	0.217	0.084	0.127	0.102	0.155	0.059	0.092	0.078	0.125	0.043	0.066
Poland	1990	0.342	0.431	0.405	0.513	0.286	0.361	0.328	0.415	0.226	0.296	0.279	0.372	0.177	0.231
	1999	0.220	0.307	0.272	0.381	0.176	0.247	0.208	0.291	0.135	0.194	0.173	0.254	0.102	0.146
	2008	0.085	0.144	0.114	0.195	0.063	0.107	0.078	0.134	0.042	0.073	0.058	0.104	0.030	0.051
Portugal	1990	0.515	0.604	0.581	0.679	0.451	0.536	0.500	0.589	0.386	0.470	0.453	0.555	0.319	0.392
	1999	0.059	0.140	0.079	0.185	0.044	0.106	0.055	0.130	0.032	0.078	0.044	0.108	0.023	0.056
	2008	0.092	0.188	0.125	0.252	0.067	0.141	0.085	0.175	0.043	0.094	0.060	0.132	0.030	0.066
Slovak R.	1991	0.312	0.396	0.373	0.479	0.258	0.331	0.299	0.381	0.216	0.281	0.269	0.359	0.169	0.221
	1999	0.240	0.318	0.296	0.395	0.191	0.254	0.226	0.300	0.135	0.185	0.172	0.244	0.100	0.137
	2008	0.165	0.252	0.211	0.325	0.127	0.197	0.155	0.239	0.088	0.142	0.117	0.193	0.064	0.103
Slovenia	1992	0.290	0.375	0.346	0.451	0.245	0.316	0.280	0.363	0.217	0.286	0.266	0.357	0.177	0.232
	1999	0.209	0.300	0.256	0.368	0.172	0.248	0.200	0.288	0.149	0.219	0.187	0.279	0.118	0.174
	2008	0.199	0.279	0.243	0.345	0.163	0.228	0.190	0.267	0.138	0.198	0.173	0.253	0.108	0.155
Spain	1990	0.339	0.410	0.404	0.496	0.279	0.338	0.322	0.392	0.218	0.271	0.272	0.349	0.168	0.207
	1999	0.166	0.249	0.210	0.316	0.130	0.197	0.156	0.235	0.094	0.146	0.123	0.195	0.069	0.108
	2008	0.171	0.250	0.217	0.318	0.134	0.197	0.161	0.236	0.096	0.145	0.126	0.194	0.071	0.107
Sweden*	1999	0.299	0.378	0.355	0.455	0.248	0.314	0.286	0.361	0.190	0.252	0.233	0.318	0.147	0.196
	2009	0.213	0.287	0.267	0.364	0.166	0.226	0.200	0.270	0.119	0.167	0.156	0.226	0.087	0.122
UK*	1990	0.202	0.275	0.250	0.345	0.161	0.220	0.191	0.261	0.127	0.177	0.164	0.233	0.096	0.133
	1999	0.101	0.161	0.134	0.215	0.076	0.121	0.094	0.149	0.052	0.085	0.071	0.119	0.037	0.060
	2009	0.102	0.159	0.135	0.212	0.077	0.119	0.095	0.147	0.051	0.081	0.069	0.114	0.036	0.057
Austria	1990	0.239	0.315	0.296	0.395	0.189	0.251	0.225	0.298	0.132	0.182	0.171	0.242	0.098	0.133
	1999	0.129	0.202	0.166	0.261	0.098	0.155	0.119	0.188	0.063	0.103	0.083	0.139	0.045	0.073
	2008	0.172	0.243	0.219	0.313	0.131	0.185	0.159	0.225	0.082	0.120	0.107	0.164	0.058	0.085

A.4.3. Individual- and country-level predictors of Europeans' commitment to protecting the environment. 1990-2009. The goodness of fit of five multinomial explicative models.

	Model 1 (M1)	Model 2 (M2)	Difference M2-M1	Model 3 (M3)	Difference M3-M2	Model 4 (M4)	M4-M2	Model 5 (M5)	M5-M2
Model Type	Logit Multinomial	Logit Multinomial		Logit Multinomial		Logit Multinomial		Logit Multinomial	
Number of cases	84917	84917		84917	0	84917	0	84917	0
Log-Lik Intercept Only	-118966.36	-118966.36	6150.591	-118966.36	0.00	-118966.36	0.00	-118966.36	0
Log-Lik Full Model	-118966.36	-112815.77	-1.23e+04	-110292.52	2523.25	-112815.77	0.00	-110292.51	2523.254
D:	237932.72	225631.54	12301.18	220585.03	-5046.509	225631.54	0	220585.03	-5046.50
LR:	-0.000	12301.18	.	17347.69	5046.50	12301.18	0	17347.69	5046.50
Prob > LR:	0	0	0	0	0	0	0	0	0
McFadden's R2:	0	0.052	0.052	0.073	0.021	0.052	0	0.073	0.021
McFadden's Adj R2:	0	0.048	0.048	0.068	0.02	0.048	0	0.068	0.02
Maximum Likelihood R2:	0	0.135	0.135	0.185	50	0.135	0	0.185	0.05
Cragg & Uhler's R2:	0	0.144	0.144	0.197	53	0.144	0	0.197	0.053
AIC:	2.667	2.802	-0.135	2.611	-0.057	2.669	0.001	2.612	-0.056
AIC*n:	226511.54	237942.72	-1.14E+04	221705.03	-4806.509	226601.54	9.00E+01	221795.03	-4716.50
BIC:	-733134.22	-725770.04	-7364.18	-736818.798	-3684.577	-732623.496	510.724	-736308.073	-3173.853
BIC':	-9486.52	0	-9486.52	-13761.27	-4274.74	-9486.52	0	-13761.27	-4274.74

Table A.4.4. Explaining Europeans' commitment to protecting the environment in a cross-country longitudinal perspective: A multinomial regression model including Individual- and Country-Level Predictors. 21 Countries, 1990-2009.

*Reference Category: "Strongly Disagree". R^2=0.197; Number of cases=84,917; In grey are signalled coefficients with p-value not significant.

	Strongly Agree					Agree					Disagree					DK				
	RRR	SE	z	CI		RRR	SE	z	CI		RRR	SE	z	CI		RRR	SE	z	CI	
Intercept	1.121	0.563	0.230	0.419	3.002	0.508	0.199	-1.720	0.235	1.097	0.190	0.080	-3.930	0.083	0.435	0.127	0.074	-3.520	0.040	0.400
Time																				
1999-2001	0.423	0.069	-5.280	0.307	0.582	0.770	0.092	-2.200	0.610	0.972	1.077	0.139	0.570	0.836	1.387	0.390	0.085	-4.300	0.254	0.599
2008-2010	0.438	0.064	-5.630	0.329	0.584	0.511	0.058	-5.890	0.409	0.639	0.941	0.115	-0.500	0.740	1.195	0.510	0.087	-3.930	0.365	0.714
INDIVIDUAL-LEVEL PREDICTORS																				
Private Sphere																				
Individualization	1.157	0.038	4.410	1.084	1.234	1.155	0.032	5.240	1.094	1.218	1.103	0.032	3.380	1.042	1.168	1.125	0.047	2.810	1.036	1.222
DK	0.704	0.076	-3.270	0.570	0.869	0.808	0.069	-2.510	0.685	0.955	0.937	0.081	-0.750	0.791	1.110	2.121	0.208	7.660	1.750	2.571
High control over Life	1.373	0.048	9.100	1.283	1.470	1.390	0.040	11.520	1.314	1.470	1.208	0.036	6.270	1.139	1.282	1.082	0.047	1.840	0.995	1.178
DK	0.712	0.083	-2.930	0.567	0.894	0.793	0.074	-2.500	0.661	0.951	0.912	0.084	-1.000	0.762	1.092	1.959	0.209	6.280	1.588	2.415
Justice																				
Equality above Freedom	1.207	0.040	5.610	1.130	1.289	1.139	0.032	4.640	1.078	1.204	1.013	0.030	0.430	0.955	1.074	1.177	0.052	3.660	1.079	1.283
Neither Equality nor Freedom	0.803	0.055	-3.170	0.702	0.920	0.771	0.043	-4.640	0.690	0.860	0.945	0.055	-0.980	0.843	1.058	1.566	0.116	6.040	1.354	1.811
DK	0.540	0.039	-8.530	0.469	0.622	0.690	0.038	-6.820	0.620	0.768	0.922	0.052	-1.450	0.827	1.029	2.000	0.134	10.350	1.754	2.280
Compassion																				
Societal related reasons	1.413	0.046	10.640	1.326	1.506	1.358	0.037	11.380	1.288	1.431	1.147	0.033	4.840	1.085	1.213	1.204	0.049	4.540	1.111	1.305
None of the options	1.230	0.114	2.240	1.026	1.474	1.235	0.098	2.670	1.058	1.442	1.170	0.098	1.870	0.992	1.380	1.514	0.166	3.790	1.222	1.877
DK	0.844	0.077	-1.860	0.706	1.009	0.952	0.071	-0.670	0.823	1.101	0.906	0.070	-1.270	0.778	1.055	1.862	0.169	6.860	1.559	2.224
Non-reciprocal responsibilities																				
Volunteering	1.965	0.077	17.260	1.820	2.122	1.816	0.062	17.500	1.699	1.942	1.412	0.051	9.550	1.315	1.515	1.236	0.066	3.980	1.114	1.373
Horizontal relationships																				
Trust People	1.763	0.062	16.100	1.645	1.889	1.585	0.048	15.270	1.494	1.681	1.214	0.039	6.040	1.140	1.293	1.398	0.063	7.400	1.279	1.527
DK	1.130	0.090	1.530	0.966	1.321	1.198	0.079	2.750	1.053	1.363	1.124	0.076	1.730	0.984	1.283	1.914	0.161	7.730	1.624	2.257
Local & Global Belonging																				
Sub-National	0.663	0.025	-11.040	0.616	0.713	0.752	0.022	-9.620	0.710	0.797	0.933	0.029	-2.260	0.878	0.991	0.926	0.041	-1.730	0.849	1.010
Supra-national	2.074	0.215	7.040	1.693	2.541	1.286	0.123	2.620	1.066	1.551	0.869	0.092	-1.340	0.706	1.068	0.591	0.113	-2.750	0.406	0.861
Local & Global	1.649	0.097	8.460	1.469	1.852	1.283	0.068	4.670	1.155	1.424	1.025	0.059	0.420	0.915	1.148	1.039	0.086	0.460	0.883	1.222
NA	0.905	0.073	-1.240	0.773	1.060	0.741	0.050	-4.420	0.649	0.846	0.842	0.060	-2.410	0.732	0.968	1.250	0.110	2.530	1.051	1.485

	Strongly Agree					Agree					Disagree					DK				
	RRR	SE	z	CI		RRR	SE	z	CI		RRR	SE	z	CI		RRR	SE	z	CI	
COUNTRY-LEVEL PREDICTORS																				
Quality of Democracy Index																				
55-64	0.491	0.120	-2.910	0.304	0.792	0.474	0.087	-4.060	0.330	0.680	0.697	0.136	-1.850	0.476	1.021	2.788	0.832	3.440	1.554	5.003
65-74	0.206	0.087	-3.730	0.090	0.472	0.328	0.114	-3.210	0.166	0.648	0.652	0.241	-1.160	0.316	1.345	5.130	2.980	2.810	1.643	16.019
Country Income																				
Upper -Middle	0.434	0.102	-3.550	0.273	0.687	1.369	0.245	1.760	0.965	1.944	2.752	0.549	5.080	1.862	4.067	3.652	0.958	4.940	2.184	6.106
High	0.701	0.422	-0.590	0.215	2.283	4.835	2.197	3.470	1.985	11.779	6.543	3.161	3.890	2.538	16.865	0.745	0.530	-0.410	0.185	3.001
CO2 emissions Index Adjusted																				
(11-20)	1.413	0.332	1.470	0.892	2.239	0.915	0.140	-0.580	0.677	1.236	1.340	0.209	1.870	0.986	1.820	1.752	0.454	2.160	1.054	2.912
21+	14.616	4.306	9.100	8.204	26.039	4.565	1.087	6.380	2.863	7.279	3.212	0.794	4.720	1.979	5.213	0.937	0.277	-0.220	0.525	1.672
Country																				
Belgium	0.082	0.024	-8.680	0.047	0.144	0.270	0.063	-5.640	0.171	0.425	0.491	0.117	-2.990	0.308	0.783	0.644	0.188	-1.500	0.364	1.142
Bulgaria	3.452	2.419	1.770	0.874	13.632	18.915	9.960	5.580	6.739	53.091	12.950	7.197	4.610	4.358	38.488	3.700	2.978	1.630	0.764	17.921
Czech Republic	4.096	2.847	2.030	1.049	15.995	35.737	18.550	6.890	12.920	98.845	15.603	8.538	5.020	5.339	45.604	3.440	2.751	1.550	0.718	16.491
Denmark	38.398	15.892	8.810	17.062	86.417	9.834	3.600	6.240	4.798	20.155	4.104	1.603	3.610	1.908	8.825	0.772	0.453	-0.440	0.244	2.441
Estonia	5.852	3.613	2.860	1.745	19.624	17.393	8.124	6.110	6.963	43.447	7.139	3.493	4.020	2.736	18.628	0.994	0.706	-0.010	0.247	4.002
Finland	0.805	0.238	-0.730	0.451	1.439	1.045	0.227	0.200	0.683	1.600	0.584	0.138	-2.270	0.368	0.929	0.283	0.100	-3.570	0.142	0.566
France	0.049	0.019	-7.790	0.023	0.105	0.148	0.045	-6.260	0.081	0.268	0.320	0.102	-3.590	0.171	0.596	1.577	0.698	1.030	0.663	3.755
Hungary	2.814	2.071	1.410	0.665	11.906	6.576	3.481	3.560	2.330	18.556	3.628	2.007	2.330	1.227	10.727	0.117	0.100	-2.500	0.022	0.630
Iceland	4.782	1.130	6.630	3.010	7.598	5.520	1.190	7.920	3.617	8.423	3.427	0.793	5.320	2.178	5.392	0.826	0.308	-0.510	0.398	1.715
Ireland	0.902	0.238	-0.390	0.537	1.515	1.298	0.266	1.280	0.869	1.939	1.644	0.354	2.310	1.078	2.507	1.579	0.586	1.230	0.764	3.266
Italy	2.659	0.419	6.210	1.953	3.621	3.260	0.445	8.650	2.494	4.261	3.061	0.456	7.520	2.287	4.098	0.902	0.190	-0.490	0.597	1.362
Lithuania	0.506	0.249	-1.390	0.193	1.327	3.027	1.138	2.950	1.449	6.323	3.074	1.226	2.820	1.407	6.718	3.098	1.726	2.030	1.040	9.234
Netherlands	10.989	4.842	5.440	4.633	26.063	7.309	2.679	5.430	3.564	14.990	2.047	0.803	1.830	0.949	4.416	0.110	0.074	-3.280	0.029	0.411
Poland	0.910	0.443	-0.190	0.351	2.364	4.348	1.636	3.910	2.080	9.090	4.168	1.663	3.580	1.906	9.111	2.024	1.134	1.260	0.675	6.069
Portugal	10.770	5.860	4.370	3.707	31.289	8.814	3.724	5.150	3.851	20.174	1.790	0.825	1.260	0.725	4.419	0.218	0.142	-2.330	0.060	0.785
Slovenia	8.763	2.996	6.350	4.483	17.126	19.898	5.110	11.650	12.029	32.916	3.910	1.035	5.150	2.328	6.569	1.973	0.804	1.670	0.888	4.387
Spain	1.562	0.370	1.880	0.981	2.486	1.101	0.199	0.530	0.772	1.570	1.677	0.317	2.730	1.157	2.429	3.698	1.088	4.440	2.077	6.583
Sweden	7.213	3.072	4.640	3.130	16.619	3.090	1.082	3.220	1.556	6.138	0.789	0.299	-0.630	0.375	1.658	0.199	0.118	-2.730	0.063	0.634
Great Britain	0.936	0.143	-0.430	0.694	1.263	1.897	0.191	6.340	1.556	2.311	1.688	0.172	5.120	1.382	2.062	2.367	0.356	5.720	1.762	3.180
Germany West	0.681	0.187	-1.400	0.398	1.165	1.490	0.285	2.090	1.024	2.167	1.617	0.322	2.410	1.094	2.388	0.712	0.216	-1.120	0.393	1.291
Country*Time																				
Belgium#1999-2001	1.849	0.377	3.010	1.240	2.758	0.968	0.151	-0.210	0.713	1.314	0.597	0.101	-3.050	0.428	0.831	1.583	0.467	1.560	0.888	2.822

	Strongly Agree					Agree					Disagree					DK				
	RRR	SE	z	CI		RRR	SE	z	CI		RRR	SE	z	CI		RRR	SE	z	CI	
Belgium#2008-2010	33.685	15.715	7.540	13.500	84.052	15.552	5.829	7.320	7.460	32.423	2.551	0.998	2.390	1.185	5.490	0.133	0.088	-3.040	0.036	0.489
Bulgaria#1999-2001	0.317	0.128	-2.840	0.143	0.700	0.174	0.054	-5.620	0.094	0.320	0.419	0.138	-2.630	0.220	0.801	1.306	0.668	0.520	0.479	3.561
Bulgaria#2008-2010	3.014	1.131	2.940	1.445	6.290	0.897	0.270	-0.360	0.497	1.619	0.353	0.115	-3.190	0.187	0.669	1.794	0.756	1.390	0.786	4.097
Czech Republic#1999-2001	1.819	0.589	1.850	0.964	3.432	0.478	0.128	-2.750	0.282	0.809	0.288	0.084	-4.280	0.163	0.509	0.601	0.238	-1.280	0.276	1.308
Czech Republic#2008-2010	0.179	0.104	-2.960	0.057	0.559	0.039	0.017	-7.220	0.016	0.094	0.055	0.026	-6.050	0.021	0.140	1.372	0.941	0.460	0.358	5.264
Denmark#1999-2001	0.779	0.231	-0.840	0.436	1.393	0.604	0.164	-1.860	0.355	1.027	0.473	0.138	-2.570	0.267	0.838	2.110	0.868	1.820	0.942	4.724
Denmark#2008-2010	0.306	0.083	-4.380	0.180	0.520	0.516	0.129	-2.650	0.317	0.841	0.390	0.104	-3.520	0.231	0.659	1.444	0.526	1.010	0.707	2.949
Estonia#1999-2001	0.177	0.054	-5.670	0.097	0.322	0.237	0.060	-5.730	0.145	0.388	0.470	0.123	-2.890	0.281	0.785	1.292	0.463	0.720	0.641	2.606
Estonia#2008-2010	0.094	0.052	-4.280	0.032	0.277	0.107	0.047	-5.120	0.046	0.252	0.185	0.086	-3.640	0.075	0.459	3.134	2.064	1.730	0.862	11.394
Finland#1999-2001	3.375	1.281	3.200	1.604	7.103	2.369	0.742	2.750	1.283	4.376	2.608	0.870	2.880	1.357	5.013	2.114	1.177	1.340	0.710	6.297
Finland#2008-2010	1.186	0.419	0.480	0.593	2.370	1.774	0.518	1.960	1.001	3.144	1.795	0.562	1.870	0.972	3.317	2.119	1.054	1.510	0.799	5.617
France#1999-2001	0.877	0.194	-0.590	0.569	1.352	0.454	0.078	-4.620	0.324	0.634	0.484	0.089	-3.960	0.338	0.693	1.043	0.345	0.130	0.546	1.994
France#2008-2010	1.151	0.244	0.660	0.760	1.743	1.254	0.213	1.330	0.899	1.748	0.824	0.150	-1.070	0.577	1.176	0.402	0.150	-2.440	0.194	0.836
Hungary#1999-2001	0.920	0.347	-0.220	0.439	1.928	0.524	0.140	-2.420	0.311	0.884	0.421	0.119	-3.060	0.242	0.732	0.950	0.480	-0.100	0.353	2.559
Hungary#2008-2010	0.691	0.489	-0.520	0.173	2.765	0.297	0.151	-2.380	0.109	0.806	0.465	0.248	-1.430	0.163	1.325	8.413	7.004	2.560	1.645	43.011
Iceland#1999-2001	2.115	0.625	2.530	1.185	3.774	1.184	0.272	0.740	0.754	1.859	1.221	0.287	0.850	0.770	1.934	1.106	0.478	0.230	0.474	2.580
Iceland#2008-2010	1.000	(omitted)				1.000	(omitted)				1.000	(omitted)				1.000	(omitted)			
Ireland#1999-2001	2.566	0.741	3.260	1.457	4.521	1.839	0.422	2.660	1.173	2.882	1.475	0.352	1.630	0.924	2.356	1.286	0.484	0.670	0.615	2.690
Ireland#2008-2010	1.361	0.436	0.960	0.726	2.551	1.232	0.295	0.870	0.770	1.971	0.798	0.200	-0.900	0.489	1.304	2.185	0.889	1.920	0.984	4.849
Italy#1999-2001	1.660	0.381	2.210	1.059	2.603	1.393	0.255	1.810	0.973	1.994	1.013	0.198	0.070	0.690	1.487	4.409	1.344	4.870	2.426	8.013
Italy#2008-2010	1.035	0.375	0.100	0.509	2.107	0.900	0.261	-0.360	0.510	1.588	0.648	0.202	-1.390	0.352	1.193	19.835	8.722	6.790	8.378	46.961
Lithuania#1999-2001	0.318	0.129	-2.820	0.144	0.706	0.727	0.193	-1.210	0.432	1.221	2.949	0.797	4.000	1.737	5.007	1.340	0.483	0.810	0.662	2.714
Lithuania#2008-2010	1.000	(omitted)				1.000	(omitted)				1.000	(omitted)				1.000	(omitted)			
Netherlands#1999-2001	1.275	0.527	0.590	0.567	2.865	0.904	0.288	-0.320	0.484	1.688	1.311	0.444	0.800	0.675	2.547	1.916	1.530	0.810	0.401	9.159
Netherlands#2008-2010	0.370	0.118	-3.110	0.198	0.692	0.652	0.162	-1.720	0.400	1.062	1.404	0.374	1.270	0.833	2.366	2.122	1.143	1.400	0.739	6.099
Poland#1999-2001	8.311	2.520	6.980	4.587	15.056	2.448	0.559	3.920	1.565	3.828	1.124	0.269	0.490	0.704	1.797	0.276	0.092	-3.860	0.144	0.530
Poland#2008-2010	1.000	(omitted)				1.000	(omitted)				1.000	(omitted)				1.000	(omitted)			
Portugal#1999-2001	0.176	0.116	-2.640	0.049	0.640	0.390	0.188	-1.960	0.152	1.001	1.439	0.748	0.700	0.520	3.985	22.399	17.835	3.900	4.704	106.658
Portugal#2008-2010	0.129	0.069	-3.810	0.045	0.370	0.274	0.114	-3.120	0.121	0.619	0.903	0.411	-0.220	0.369	2.205	16.053	10.178	4.380	4.633	55.623
Slovenia#1999-2001	1.235	0.382	0.680	0.673	2.265	0.725	0.194	-1.200	0.429	1.226	0.695	0.197	-1.280	0.398	1.212	1.888	0.763	1.570	0.856	4.167
Slovenia#2008-2010	1.000	(omitted)				1.000	(omitted)				1.000	(omitted)				1.000	(omitted)			
Spain#1999-2001	2.059	0.492	3.020	1.289	3.287	2.381	0.452	4.570	1.641	3.456	1.294	0.256	1.300	0.878	1.908	0.598	0.167	-1.840	0.346	1.033
Spain#2008-2010	1.113	0.313	0.380	0.642	1.932	2.379	0.502	4.110	1.574	3.597	0.856	0.189	-0.700	0.556	1.319	0.603	0.203	-1.500	0.311	1.168

	Strongly Agree					Agree					Disagree					DK				
	RRR	SE	z	CI		RRR	SE	z	CI		RRR	SE	z	CI		RRR	SE	z	CI	
Sweden#1999-2001	1.282	0.486	0.660	0.610	2.695	0.917	0.257	-0.310	0.529	1.588	0.917	0.286	-0.280	0.498	1.689	1.251	0.730	0.380	0.399	3.924
Sweden#2008-2010	1.102	0.330	0.320	0.613	1.981	1.472	0.344	1.650	0.931	2.327	3.067	0.786	4.370	1.856	5.067	7.838	2.880	5.600	3.814	16.106
Great Britain#1999-2001	1.000	(omitted)				1.000	(omitted)				1.000	(omitted)				1.000	(omitted)			
Great Britain#2008-2010	1.000	(omitted)				1.000	(omitted)				1.000	(omitted)				1.000	(omitted)			
Germany West#1999-2001	0.420	0.109	-3.330	0.252	0.700	0.375	0.063	-5.880	0.270	0.519	0.325	0.056	-6.540	0.232	0.455	0.441	0.133	-2.710	0.244	0.797
Germany West#2008-2010	0.758	0.171	-1.230	0.486	1.181	0.769	0.126	-1.600	0.558	1.060	0.562	0.095	-3.410	0.403	0.782	1.010	0.242	0.040	0.631	1.616

Table A.4.5. Confidence Intervals of the predicted probabilities to Strongly Agree to give part of the income for environmental protection calculated for the category of green and non-green citizens while controlling for the quality of democracy, country income status and level of CO2 emissions. 21 Countries, 1990-2009.

*Mlogit, Nagelkerke R-square=0.197. Reference Category: Strongly Disagree. Reference Model presented in Table A.4.4.
**Grey colour highlights confidence intervals that overlap with those calculated for people who have the features of an ecological citizen.

	Ecological Citizenship (EC) G1		**EC, Global G2**		**EC, National G3**		**EC, Freedom G4**		**nonEC, Local&Global G5**		**nonEC, Global G6**		**nonEC, National G7**	
Belgium	0.249	0.312	0.298	0.379	0.195	0.246	0.233	0.293	0.147	0.189	0.183	0.242	0.106	0.136
	0.261	0.326	0.310	0.392	0.206	0.258	0.244	0.306	0.151	0.195	0.187	0.248	0.110	0.141
	0.155	0.211	0.188	0.261	0.119	0.163	0.144	0.197	0.089	0.125	0.112	0.161	0.064	0.089
Finland	0.285	0.386	0.338	0.454	0.227	0.312	0.269	0.365	0.171	0.245	0.211	0.303	0.125	0.181
	0.140	0.207	0.174	0.260	0.105	0.156	0.129	0.191	0.074	0.115	0.096	0.151	0.052	0.080
	0.087	0.148	0.112	0.192	0.063	0.108	0.079	0.135	0.040	0.072	0.053	0.097	0.027	0.048
France	0.263	0.343	0.313	0.410	0.208	0.274	0.247	0.324	0.161	0.218	0.199	0.274	0.118	0.161
	0.245	0.316	0.294	0.382	0.189	0.245	0.227	0.294	0.125	0.169	0.156	0.216	0.088	0.118
	0.213	0.278	0.255	0.339	0.165	0.216	0.198	0.260	0.119	0.161	0.148	0.206	0.085	0.115
Denmark	0.495	0.572	0.550	0.639	0.427	0.498	0.478	0.553	0.384	0.458	0.442	0.532	0.315	0.377
	0.399	0.479	0.455	0.550	0.334	0.404	0.382	0.459	0.287	0.356	0.340	0.428	0.226	0.281
	0.312	0.379	0.364	0.450	0.253	0.308	0.295	0.360	0.202	0.256	0.247	0.319	0.153	0.192
Iceland	0.250	0.337	0.295	0.401	0.202	0.274	0.236	0.321	0.172	0.241	0.210	0.297	0.132	0.185

	Ecological Citizenship (EC) G1		EC, Global G2		EC, National G3		EC, Freedom G4		nonEC, Local&Global G5		nonEC, Global G6		nonEC, National G7	
	0.146	0.214	0.179	0.265	0.113	0.165	0.136	0.200	0.088	0.133	0.112	0.172	0.064	0.096
	0.117	0.184	0.146	0.232	0.088	0.139	0.108	0.171	0.065	0.106	0.084	0.140	0.046	0.075
Netherlands	0.366	0.446	0.419	0.514	0.305	0.374	0.350	0.427	0.267	0.335	0.316	0.401	0.211	0.265
	0.209	0.285	0.250	0.343	0.166	0.227	0.197	0.269	0.137	0.192	0.169	0.241	0.103	0.144
	0.123	0.178	0.152	0.224	0.093	0.135	0.113	0.165	0.068	0.102	0.087	0.134	0.048	0.072
Sweden	0.469	0.545	0.525	0.614	0.400	0.469	0.451	0.526	0.343	0.414	0.398	0.488	0.274	0.333
	0.302	0.377	0.350	0.443	0.246	0.309	0.287	0.359	0.199	0.260	0.238	0.318	0.152	0.199
	0.226	0.299	0.275	0.367	0.176	0.234	0.212	0.281	0.133	0.183	0.169	0.237	0.096	0.132
Austria	0.249	0.324	0.299	0.393	0.195	0.256	0.234	0.305	0.145	0.196	0.182	0.251	0.105	0.142
	0.139	0.206	0.173	0.257	0.105	0.156	0.129	0.191	0.072	0.110	0.092	0.144	0.050	0.077
	0.190	0.257	0.234	0.320	0.143	0.194	0.175	0.238	0.093	0.131	0.118	0.173	0.064	0.090
Ireland	0.196	0.268	0.236	0.326	0.155	0.211	0.184	0.252	0.124	0.175	0.155	0.222	0.092	0.129
	0.138	0.213	0.171	0.266	0.105	0.163	0.128	0.198	0.078	0.125	0.100	0.163	0.055	0.089
	0.145	0.226	0.185	0.288	0.108	0.170	0.134	0.211	0.074	0.121	0.099	0.163	0.052	0.084
Italy	0.236	0.296	0.281	0.359	0.187	0.236	0.222	0.280	0.152	0.196	0.189	0.248	0.114	0.146
	0.164	0.216	0.200	0.268	0.128	0.167	0.153	0.203	0.102	0.137	0.129	0.178	0.075	0.100
	0.219	0.283	0.264	0.348	0.172	0.224	0.206	0.268	0.139	0.185	0.176	0.239	0.103	0.136
Portugal	0.526	0.609	0.581	0.673	0.458	0.537	0.509	0.593	0.410	0.490	0.469	0.562	0.338	0.407
	0.071	0.156	0.091	0.197	0.053	0.118	0.066	0.145	0.041	0.093	0.054	0.123	0.029	0.067
	0.122	0.196	0.155	0.249	0.092	0.148	0.113	0.182	0.067	0.110	0.087	0.147	0.047	0.077
Spain	0.336	0.401	0.391	0.475	0.273	0.326	0.318	0.381	0.221	0.270	0.269	0.339	0.168	0.203
	0.184	0.255	0.225	0.314	0.143	0.199	0.172	0.239	0.110	0.157	0.139	0.203	0.080	0.114
	0.159	0.221	0.195	0.276	0.122	0.170	0.148	0.207	0.091	0.130	0.116	0.170	0.065	0.093
United Kingdom	0.215	0.280	0.258	0.341	0.170	0.221	0.202	0.263	0.139	0.184	0.173	0.235	0.104	0.137
	0.104	0.156	0.132	0.202	0.077	0.116	0.095	0.144	0.054	0.084	0.072	0.113	0.038	0.058
	0.107	0.157	0.136	0.203	0.080	0.116	0.099	0.145	0.055	0.082	0.072	0.111	0.038	0.057

	Ecological Citizenship (EC) G1		EC, Global G2		EC, National G3		EC, Freedom G4		nonEC, Local&Global G5		nonEC, Global G6		nonEC, National G7	
Germany W	0.181	0.237	0.223	0.298	0.138	0.181	0.169	0.220	0.101	0.135	0.130	0.179	0.072	0.095
	0.086	0.163	0.110	0.207	0.062	0.119	0.078	0.149	0.038	0.074	0.049	0.098	0.025	0.050
	0.125	0.197	0.159	0.250	0.091	0.146	0.114	0.181	0.058	0.096	0.076	0.128	0.040	0.066
Slovenia	0.286	0.366	0.332	0.430	0.236	0.303	0.273	0.351	0.217	0.283	0.259	0.343	0.174	0.226
	0.205	0.279	0.244	0.336	0.165	0.225	0.195	0.265	0.147	0.203	0.179	0.252	0.114	0.157
	0.191	0.253	0.228	0.308	0.152	0.202	0.180	0.240	0.133	0.179	0.163	0.225	0.102	0.136
Hungary	0.328	0.415	0.385	0.489	0.264	0.338	0.310	0.394	0.208	0.273	0.256	0.341	0.155	0.205
	0.227	0.317	0.271	0.380	0.177	0.250	0.212	0.298	0.127	0.186	0.157	0.234	0.091	0.134
	0.209	0.278	0.254	0.342	0.160	0.214	0.194	0.259	0.115	0.158	0.146	0.205	0.082	0.112
Estonia	0.304	0.384	0.353	0.453	0.247	0.317	0.289	0.366	0.217	0.282	0.262	0.348	0.168	0.221
	0.110	0.178	0.139	0.227	0.082	0.134	0.101	0.165	0.059	0.100	0.078	0.133	0.042	0.070
	0.106	0.159	0.133	0.201	0.080	0.120	0.099	0.147	0.060	0.091	0.077	0.121	0.043	0.064
Czech Republic	0.345	0.408	0.394	0.476	0.289	0.341	0.331	0.391	0.265	0.315	0.310	0.381	0.214	0.252
	0.241	0.305	0.285	0.368	0.195	0.246	0.229	0.290	0.169	0.217	0.206	0.272	0.131	0.166
	0.182	0.243	0.224	0.304	0.140	0.187	0.170	0.228	0.105	0.143	0.134	0.188	0.075	0.102
Poland	0.352	0.437	0.407	0.507	0.291	0.364	0.336	0.419	0.243	0.312	0.292	0.379	0.188	0.242
	0.229	0.314	0.275	0.379	0.181	0.251	0.215	0.297	0.145	0.205	0.181	0.259	0.107	0.152
	0.092	0.146	0.117	0.190	0.067	0.108	0.084	0.135	0.048	0.078	0.063	0.106	0.033	0.054
Bulgaria	0.436	0.516	0.492	0.586	0.370	0.442	0.419	0.499	0.331	0.404	0.388	0.478	0.267	0.327
	0.282	0.370	0.337	0.442	0.223	0.296	0.265	0.350	0.168	0.230	0.209	0.291	0.122	0.168
	0.300	0.375	0.355	0.448	0.245	0.306	0.287	0.358	0.210	0.268	0.260	0.337	0.163	0.206
Lithuania	0.301	0.381	0.352	0.453	0.243	0.314	0.286	0.363	0.210	0.273	0.256	0.341	0.160	0.212
	0.057	0.130	0.077	0.174	0.040	0.092	0.051	0.118	0.025	0.059	0.034	0.082	0.016	0.039
	0.064	0.112	0.085	0.151	0.046	0.081	0.059	0.103	0.031	0.056	0.043	0.078	0.021	0.038

Bibliography

Alexander, A.C. & Welzel, C. (2008). Measuring effective democracy: The Human empowerment approach. World Values Research. Vol. 1(1). pp. 1-34.

Alexander, A.C. & Welzel, C. (2011). Measuring effective democracy: The Human empowerment approach. Comparative Politics Vol. 43 (3). pp. 271-89.

Alexander, A.C.; Inglehart, R.; Welzel, C. (2012). Measuring effective democracy: A defense. International Political Science Review. Vol.33 (1). pp. 41-62.

Ajzen. L (1989) *Attitude Structure and behaviour*. In Pratkanis et al. (1989) Attitude Structure and Function. Hillsdale, N.J. Erlbaum

Ajzen, I. and M. Fishbein (1977). "Attitude-Behavior Relations - Theoretical-Analysis and Review of Empirical-Research." Psychological Bulletin 84(5): 888-918.

Arcury, T. A. and E. H. Christianson (1990). "Environmental Worldview in Response to Environmental-Problems - Kentucky 1984 and 1988 Compared." Environment and Behavior 22(3): 387-407.

Armingeon et al. (2011) Comparative Political Data Set 1960-2009. Institute of Political Science. University of Berne.

Banya, Momoh & McGrew, Anthony (2011) *Diminishing Returns? Globalization and the Limits of Citizenship*. In Stoker et al. (2011) Prospects for Citizenship. Bloomsbury Academic Press

Bamberg, S. (2003). "How does environmental concern influence specific environmentally related behaviors? A new answer to an old question." Journal of Environmental Psychology 23(1): 21-32.

Barry, J. (1995) 'The Limits of the Shallow and the Deep: Green Politics, Philosophy, and Praxis'. Environmental Politics. Vol. 3(3). pp. 369-394.

Barry, J. (1999) Rethinking Green Politics – Nature, Virtue and Progress. London, Sage.

Beck, U. (1992) The Risk Society: Towards the New Modernity. Sage. London

Bechtel, R. B., V. Corral-Verdugo, M. Asai and A. G. Riesle (2006). "A cross-cultural study of environmental belief structures in USA, Japan, Mexico, and Peru." International Journal of Psychology 41(2): 145-151.

Bechtel, R. B., V. C. Verdugo and J. D. Q. Pinheiro (1999). "Environmental belief systems - United States, Brazil, and Mexico." Journal of Cross-Cultural Psychology 30(1): 122-128.

Bernauer, T.; Bohmelt, T.; Koubi, V. (2013) 'Is There a Democracy-Civil Society Paradox in Global Environmental Governance?' Global Environmental Politics 13 (1): 88-107.

Bernauer, T.; Bohmelt, T. (2013) 'National Climate Policies in International Comparison: The Climate Change Cooperation Index.' Environmental Science & Policy 25 (1): 196-206.

Best, H. (2009). "Organic Farming as a Rational Choice: Empirical Investigations in Environmental Decision Making." Rationality and Society 21(2): 197-224.

Best, H. (2009). "Organic Farming as a Rational Choice: Empirical Investigations in Environmental Decision Making." Rationality and Society 21(2): 197-224.

Best, H. (2010). "Environmental Concern and the Adoption of Organic Agriculture." Society & Natural Resources 23(5): 451-468.

Best, H. (2010). "Environmental Concern and the Adoption of Organic Agriculture." Society & Natural Resources 23(5): 451-468.

Best, H. and J. Mayerl (2013). "Values, Beliefs, Attitudes: An Empirical Study on the Structure of Environmental Concern and Recycling Participation." Social Science Quarterly 94(3): 691-714.

Bimonte, S. (2009) Growth and environmental quality: Testing the double convergence hypothesis. In Ecological Economics, 68, 2406-2411.

Bilsky, W. and S. H. Schwartz (1994). "Values and Personality." European Journal of Personality 8(3): 163-181.

Boehmer-Christiansen, S. A. (1995). "Britain and the International Panel on Climate Change: The Impacts of Scientific Advice on Global Warming. Part 1." Environmental Politics 4(1): 1-18.

Borden, R. J. and J. L. Francis (1978). "Who Cares About Ecology - Personality and Sex-Differences in Environmental Concern." Journal of Personality 46(1): 190-203.

Brysk, A and Shafir, G. (Eds.) (2004) People Out of Place: Globalization, Human Rights, and the Citizenship Gap. New York: Routledge.

Buhlmann et al. (2012) The Democracy Barometer: A New Instrument to Measure the Quality of Democracy and its Potential for Comparative Research. in European Political Science Vol. 11.: 519-536

Castles, Stephen & Davidson, Alastair (2000) Citizenship and Migration. Globalization and the Politics of Belonging. Routledge

Christoff, P. & Eckersley, R (2011). Comparing States Responses. in Dryzek, J. S.; Norgaard, R.B. & Schlosber, D. (eds) The Oxford Handbook of Climate Change and Society. Oxford University Press.

Cohen, J.L. (1999). Changing Paradigms of Citizenship and the Exclusiveness of the Demos. International Sociology. Vol. 14(3): 245-268.

Cramme, Olaf & Diamond, Patrick (Eds.) (2009) Social Justice in the Global Age. Cambridge: Polity Press

Croucer, S. L. (2004) Globalization and Belonging, The Politics of Identity in a Changing World. Rowman & Littlefield Publishers

Croucer, Sheila L. (2004) Globalization and Belonging, The Politics of Identity in a Changing World. Rowman & Littlefield PublishersDallmayr, Fred R. (2002) Globalization and Inequality: A plea for Global Justice. International Studies Review. Vol. 4, No. 2

Dietz, T., A. S. Frisch, L. Kalof, P. C. Stern and G. A. Guagnano (1995). "Values and Vegetarianism - an Exploratory Analysis." Rural Sociology 60(3): 533-542.

Dobson, A. & Lucardie, P. (1993). The Politics of the Nature – Explorations in green political theory. London, Routledge.

Dobson, A. (1995). Green Political Thought. London, Routledge.

Dobson, A. (2000). Ecological Citizenship: A Disruptive Influence? Politics at the Edge: the PSA Yearbook 1999. C. T. Pierson, S. Houndmills, Basingstoke, New York, St. Martin's Press.

Dobson, A. (2003). Citizenship and the Environment. Oxford, Oxford University Press.

Dobson, A. (2005). "Globalisation, Cosmopolitanism and the Environment." International Relations 19(3): 259-273.

Dobson, A. (2005). Ecological Citizenship. in Debating the Earth. Dryzek, J.S. & Schlosberg, D. (Ed.) Oxford University Press.

Dobson, A. (2006). "Ecological citizenship: a defence." Environmental Politics 15(3): 447-451.

Dobson, A. (2007). "Environmental citizenship: Towards sustainable development." Sustainable Development 15(5): 276-285.

Dobson, A. & Bell, D. (Ed) (2006) Environmental citizenship The MIT Press

Dobson, A. & Saiz, A.V. (Ed.) (2006) Citizenship, Environment, Economy. Routledge

Dryzek et al., (2003) Green States and Social Movements: Environmentalism in the United States, United KIngdon, Germany & Norway. Oxford University Press.

Dryzek, J.S. (2005). The Politics of the Earth: Environmental Discourses. Oxford University Press. 2nd Ed.

Dunlap, R. E. (2008). "The New Environmental Paradigm Scale: From Marginality to Worldwide Use." The Journal of Environmental Education 40(1): 3-18.

Dunlap, R. E. and K. D. Van Liere (2008). "The New Environmental Paradigm". The Journal of Environmental Education 40(1): 19-28.

Dunlap, R. E. and K. D. Van Liere (1984). "Commitment to the Dominant Social Paradigm and Concern for Environmental-Quality." Social Science Quarterly 65(4): 1013-1028.

Dunlap, R. E. and R. York (2008). "The Globalization of Environmental Concern and the limits of the postmaterialist values explanation: Evidence from four multinational surveys." The Sociological Quarterly 49(3): 529–563.

Dunlap, R. E. v. L., Kent D; Mertig, A. G; Jones, R. (2000). "Measuring Endorsement of the New Ecological Paradigm: A revised NEP Scale." Journal of Social Issues 56(3): 425-442.

Dunlap, R. S., Luisa; Guerra, Joao (2011). Searching for an Ecological Worldview in Europe Fundação Calouste Gulbenkian, Lisbon.

Eckersley, R. (1993). Environmentalism and Political Theory: towards an ecocentric approach. University College London Press.

Eckersley, R. [Ed.] (1995). Markets, the State and the Environment: towards integration. MacMillan Education Australia Ltd.

Eckersley, R. (2004). The Green State. Massachussets Institte of Technology.

Ester, P.; Halman, L.; Seuren, B. (1993) Environmental Concern and Offering Willigness in Europe and North America in Ester, P., L. Halman, et al. (1993). The individualizing society : value change in Europe and North America. Tilburg, Tilburg University Press.

Esty, D.C. et al. (2005) Environmental Sustainability Index: Benchmarking National Environmental Stewardship. New Haven: Yale Center for Environmental Law & Policy.

Fabrigar, L.R. et al (2005) The Structure of Attitudes. In Albarracin, A. et al (2005) The Handbook of Attitudes Mahwah.,N.J.: Elrbaum

Falk, Richard (2000) The Decline of Citizenship in an Era of Globalization. Citizenship Studies, 4(1), 5-17.

Faulk, Keith (2000) Citizenship. New York: Routledge

Fisher, F. (2000). Citizens, Experts, and the Environment. Duke University Press

Fransson, N. and T. Garling (1999). "Environmental concern: Conceptual definitions, measurement methods, and research findings." Journal of Environmental Psychology 19(4): 369-382.

Franzen, A. (2003). Environmental Attitudes in International Comparison: An Analysis of the ISSP Surveys 1993 and 2000. Social Sciences Quarterly. Vol. 84. pp: 297-308.

Franzen, A. & Meyer, R. (2010) Environmental Attitudes in Cross-National Perspective: A Multilevel Analysis of the ISSP Surveys 1993 and 2000. European Sociological Review. Vol. 26(2). pp: 219-234.

Franzen, A. & Vogl, D. (2013a). Two decades of measuring environmental attitudes: A comparative analysis of 33 countries. Global Environmental Chanhe. Vol. 23(5). pp: 1001-1008.

Franzen, A. & Vogl, D. (2013b). Acquiescence and the Willingness to Pay for Environmental Protection: A Comparisson of the ISSP, WVS, and EVS. Social Sciences Quarterly. Vol. 94(3). pp: 637-659.

Fredriksson, Per G & Neumayer, E. (2013) Democracy and climate change policies: Is history important? In Ecological Economics 95, 11-19.

Gellissen, J. (2007) Explaining Popular Support for Environmental Protection: A multilevel Analysis of 50 Nations. Environment and Behaviour. Vol. 39. pp.: 392-415.

Gleditsch, N. P. & Sverdrup, B. O. (2003) *Democracy and the environment.* in Page, E. A. & Redclift, M. (Eds.) Human Security and the Environment. Edward Elgar Publishing

Goodin, R.E. (1992) Green Political Theory. Polity Press.

Harvey, David (1990) The condition of postmodernity. Blackwell Publishing Ltd.

Hayward, T. (2006). "Ecological citizenship: Justice, rights and the virtue of resourcefulness." Environmental Politics 15(3): 435-446.

Heilbroner, R.L. (1974) An Enquiry into the Human Prospect. New York: Norton.

Held, D.; McGrew, A.; Goldblatt, D. & Perraton, J. (1999). Global Transformations. Politics, Economics and Culture. Cambridge, Polity Press.

Held, David & McGrew, Anthony (2007[2005]) Globalization / Anti-Globalization. Beyond the great divide. Cambridge: Polity Press.

Helm, D. (2015) Natural Capital. Valuing the Planet. Yale University Press.

Hirst, Paul & Thompson, Grahame (1996) Globalization in Question. Cambridge: Polity Press.

Hirst, Paul & Thompson, Grahame (2003) The Future of Globalization. In Michie, Jonathan (ed.) The Handbook of Globalization. Edward Elgar Publishing Limited.

Huismans, S. and S. H. Schwartz (1992). "Religiosity and Value Priorities - a Study of Protestants, Catholics, and Jews." Innovations in Cross-Cultural Psychology: 237-249.

Hunter, L. M. and L. Rinner (2004). "The association between environmental perspective and knowledge and concern with species diversity." Society & Natural Resources 17(6): 517-532.

Lorenz, Hendrik, "Ancient Theories of Soul", The Stanford Encyclopedia of Philosophy (Summer 2009 Edition), Edward N. Zalta (ed.), URL = http://plato.stanford.edu/archives/sum2009/entries/ancient-soul/

Inglehart, R. (1995) Public Support for Environmental Protection: Objective Problems and Subjective Values in 43 Societies. Political Science and Politics Vol. 28(1). pp: 57-72.

Jagers, S.C. (2009) “In search of the Ecological Citizen” Environmental Politics 18(1) p 18-36

Jagers, S.C. & Matti, S. (2010) “Ecological Citizens: Identifying Values and Beliefs that Support Individual Environmental Responsibility among Swedes”. Sustainability 2(4): 1055-1079

Jacob, M. (1994). Sustainable Development and Deep Ecology: An Analysis of Competing Traditions. Environmental Management. Vol. 18 (4). pp: 477-488.

Kortenkamp, K. V. and C. F. Moore (2006). "Time, uncertainty, and individual differences in decisions to cooperate in resource dilemmas." Personality and Social Psychology Bulletin 32(5): 603-615.

Lachapelle, E. & Paterson, M. (2015) Drivers of National Climate Policy. In Climate Policy 13:5, 547-571.

Liefferink, D. & Andersen, M.S. (1998) Strategies of the ‘green’ member states in EU environmental policy-making. Journal of European Public Policy. 5:2, 254-270.

Lister, R. (1997). Citizenship: Feminist Perspectives. 2nd Edition. Basingstoke, Macmillan.

Li, Q. & Reuveny, R. (2006) “Democracy and environmental degradation”. International Studies Quarterly 50: 935-956.

Maloney, M. P. and M. P. Ward (1973). "Ecology - Lets Hear from People - Objective Scale for Measurement of Ecological Attitudes and Knowledge." American Psychologist 28(7): 583-586.

Maloney, M. P., M. P. Ward and G. N. Braucht (1975). "Psychology in Action - Revised Scale for Measurement of Ecological Attitudes and Knowledge." American Psychologist 30(7): 787-790.

Mason, A. (2009) Environmental Obligations and the Limits of Transnational Citizenship. Political Studies. Vol. 57: 280-297.

Meneses, G. D. and A. B. Palacio (2005). "Recycling behavior - A multidimensional approach." Environment and Behavior 37(6): 837-860.

Midlarsky, M.I. (1998). Democracy and the environment: An empirical assessment. Journal of Peace Research. Vol. 35 (3): 341-361.

Miller, D. (2000). Citizenship and National Identity. Cambridge, Polity Press.

Milfont, T. L. and J. Duckitt (2004). "The structure of environmental attitudes: A first- and second-order confirmatory factor analysis." Journal of Environmental Psychology 24(3): 289-303.

Milfont, T. L. and J. Duckitt (2010). "The environmental attitudes inventory: A valid and reliable measure to assess the structure of environmental attitudes." Journal of Environmental Psychology 30(1): 80-94.

Milfont, T. L., J. Duckitt and C. Wagner (2010). "A Cross-Cultural Test of the Value-Attitude-Behavior Hierarchy." Journal of Applied Social Psychology 40(11): 2791-2813.

Naess, A. (1973). "The Shallow and the Deep. Long-Range Ecology Movement: A Summary." Inquiry: An Interdisciplinary Journal of Philosophy and the Social Sciences. 16: 95-100.

Neumayer, E. (2002) Do Democracies exhibit stronger International Environmental Commitment? A Cross-Country Analysis. Journal of Peace Research Vol. 39(2). pp: 139-164.

Nilsson, M. et al (2012) Understanding Policy Coherence: Analytical Framework and Examples of Sector-Environment Policy Interactions in the EU. In Environmental Policy and Governance 22, 395-423

Nyers, P. (2004). "What's left of Citizenship?" Citizenship Studies 8(3).

Neumayer, E. (2002) Do We Trust the Data? On the Validity and Reliability of Cross-National Environmental Surveys. Social Science Quarterly 83(1): 332-340

Olli, E., G. Grendstad and D. Wollebaek (2001). "Correlates of environmental behaviors - Bringing back social context." Environment and Behavior 33(2): 181-208.

Ophuls, W. (1977) Ecology and the Politics of Scarcity, New York: Freeman.

Ong, A. (2006) *Mutations in Citizenship*. Theory, Culture and Society. Vol. 23 (2-3)

Owen, David (2011) Transpolitical Citizenship in Stoker et al. (2011) Prospects for Citizenship. Bloomsbury Academic

Payne, R.A. (1995). Freedom and the environment. Journal of Democracy. Vol. 6 (3)

Perraton, J. (2003). The scope and implications of globalization. The Handbook of Globalization. J. Michie, Edward Elgar Publishing Ltd.

Philpott, Dan, "Sovereignty", The Stanford Encyclopaedia of Philosophy *(Summer 2010 Edition)*, Edward N. Zalta (ed.): http://plato.stanford.edu/archives/sum2010/entries/sovereignty

Pocock, J. G. A. (1995) The Ideal of Citizenship since Classical Times in Beiner, R. (ed.) Theorizing Citizenship. Albany: State University of New York Press.

Schahn, J. and E. Holzer (1990). "Studies of Individual Environmental Concern - the Role of Knowledge, Gender, and Background Variables." Environment and Behavior 22(6): 767-786.

Scheuerman, William, "Globalization", The Stanford Encyclopedia of Philosophy *(Summer 2010 Edition)*, Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/sum2010/entries/globalization/>.

Schimmelfenning et al. (2015) The European Union as a System of Differentiated Integration: Interdependence, Politicization, and Differentiation. Journal of European Public Policy 22:6, 764-782.

Schultz, P. W. and L. C. Zelezny (1998). "Values and proenvironmental behavior - A five-country survey." Journal of Cross-Cultural Psychology 29(4): 540-558.

Schultz, P. W. and L. C. Zelezny (1998). "Values and proenvironmental behavior - A five-country survey." Journal of Cross-Cultural Psychology 29(4): 540-558.

Schultz, P.W. et al. (2005) Values and their Relationship to Environmental Concern and Conservation Behavior. Journal of Cross-Cultural Psychology. 36(4): 457-475

Schwartz, S. H. (1992). "Cultural Dimensions of Values - Towards an Understanding of National Differences." International Journal of Psychology 27(3-4): 540-540.

Schwartz, S. H. (1992). "Antecedents and Consequences of National Value Priorities - Cross-Cultural Perspectives." International Journal of Psychology 27(3-4): 539-539.

Schwartz, S. H. (1992). "Universals in the Content and Structure of Values - Theoretical Advances and Empirical Tests in 20 Countries." Advances in Experimental Social Psychology 25: 1-65.

Schwartz, S. H. and W. Bilsky (1987). "Toward a Universal Psychological Structure of Human-Values." Journal of Personality and Social Psychology 53(3): 550-562.

Schwartz, S. H. and M. Bond (1992). "Cross-Cultural Studies of Human-Values." 22nd International Congress of Applied Psychology, Kyoto, Japan, 22-27 July 1990: Proceedings, Vol 3: 39-43.

Sen, A. (1999) Democracy as a Universal Value. Journal of Democracy. Vol. 10 (3)

Sidique, S. F., F. Lupi and S. V. Joshi (2010). "The effects of behavior and attitudes on drop-off recycling activities." Resources Conservation and Recycling 54(3): 163-170.

Sjoberg, L. (1989). "Global Change and Human Action - Psychological Perspectives." International Social Science Journal 41(3): 413-432.

Smith, G. (2003). Deliberative Democracy and the Environment. London, Routledge.

Smith, G. (2004). Liberal Democracy and the shaping of environmentally enlightened citizens. Liberal Democracy and Environmentalism: the end of environmentalism? M. L. Wissenburg, Y. London, Routledge.

Smith, P.J. (2001) *Impact of Globalization on Citizenship: Decline or Renaissance?* In Journal of Canadian Studies. Spring.

Smith, M.J. & Pangsapa, P (2008) Environment and Citizenship, Zed Books

Soysal, Yasemin Nuhoglu (1994) *Limits of Citizenship. Migrants and Postnational Membership in Europe*. Chicago: University of Chicago Press.

Stern, P. C. (1992). "Psychological Dimensions of Global Environmental-Change." Annual Review of Psychology 43: 269-302.

Stern, P. C. and T. Dietz (1994). "The Value Basis of Environmental Concern." Journal of Social Issues 50(3): 65-84.

Stern, P. C., T. Dietz, L. Kalof and G. A. Guagnano (1995). "Values, Beliefs, and Proenvironmental Action - Attitude Formation toward Emergent Attitude Objects." Journal of Applied Social Psychology 25(18): 1611-1636.

Steinberg, P.F. & VanDeever, S.D. (2012) Comparative Environmental Politics. MIT Press.

Steves, Franklin and Teytelboym, Alexander, Political Economy of Climate Change Policy (October 16, 2013). SSEE Working Paper 13-02. Available at SSRN: http://ssrn.com/abstract=2456538 or http://dx.doi.org/10.2139/ssrn.2456538

Stevenson, H. & Dryzek, J.S. (2012) “The Discoursive Democratization of Global Climate Governance”, Environmental Politics 21: 189-210.

Sur, S. (1997). The State between Fragmentation and Globalization. European Journal of International Law. Vol. 8 (3). pp: 421-434.

Sutton, S. G. and E. Gyuris (2015). "Optimizing the environmental attitudes inventory Establishing a baseline of change in students' attitudes." International Journal of Sustainability in Higher Education 16(1): 16-33.

Takala, M. (1991). "Environmental Awareness and Human Activity." International Journal of Psychology 26(5): 585-597.

Van Gunsteren, H. (1994) Four Conceptions of Citizenship. in van Steenbergen, B. The Condition of Citizenship. London: Sage.

Welzel, C. Inglehart, R. & Klingemann, H-D (2003) *The theory of human development: A cross-cultural analysis.* European Journal of Political Research. Vol. 42 (3)

Welzel, C. Inglehart, R. (2005) Modernization, Cultural Change and Democracy. Cambridge University Press.

Welzel, C., and Inglehart, R. (2010). "Agency, Values, and Well-Being: A Human Development Model." Social Indicators Research, 97(1): 43-63.

Wissenburg, M. & Levy, Y. (2004). Liberal Democracy and Environmentalism – the end of environmentalism? London, Routledge

Yilmaz, Hakan (2009) *The International Context* [of Democratization] in Haerpfer, C.W. et al (Eds.) *Democratization*. Oxford University Press

**Datasets, Research Reports and other sources

EVS (2011). European Values Study Longitudinal Data File 1981-2008 (EVS 1981-2008). G. D. Archive. Cologne.

GESIS (2001). GESIS- Variable Reports 20011/10. EVS 1981-2008 Variable Report Longitudinal Data File.

European Environmental Agency (2009) Environmental Pressures from European Consumption and Production. ETC/SCP working paper 1/2009.

European Environmental Agency (2012) Climate Change, impacts and vulnerability in Europe 2012. EEA Report, No 12/2012

United Nations: Human Development Report 2007/2008. Fighting Climate Change: Human Solidarity in a divided world.

IPCC-WG 1 (1990) Climate Change. The First IPCC Scientific Assessment. Report Prepared for IPCC by Working Group 1. [Houghton, J.T., Jenkins, G.J., Ephraums, J.J. (eds)]. .)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA

IPCC (2007) Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Synthesis Report. [Pachauri, R.K. and Reisinger, A. (eds.)]. IPCC. Geneva.

IPCC. (2014). Summary for Policymakers. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A. Contribution of Working Group 2 to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B.; V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. BIlir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

European Commission, 'EU Plan of Action on Gender Equality and Women's Empowerment in Development 2010-2015:
http://ec.europa.eu/europeaid/infopoint/publications/europeaid/227a_en.html

BEPA (2010) Empowering People, driving change: Social Innovation in the European Union. Report steered by Hubert, Agnes under the supervision of Jean-Claude Thebault and Margaritis Schinas and with the assistance of Matteo Bonifacio and Joep Konings:
http://ec.europa.eu/bepa/pdf/publications_pdf/social_innovation.pdf

Freedom House Methodology Report 2014.

http://www.freedomhouse.org/report/freedom-world-2014/methodology#.U8gfnbHoAoG

accessed in July 2014.

Status of Ratification UNFCCC:
http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php

The declaration of the Government of Canada regarding its withdraw from the Kyoto Protocol:
http://www.ec.gc.ca/Publications/default.asp?lang=En&n=EE4F06AE-1&xml=EE4F06AE-13EF-453B-B633-FCB3BAECEB4F&offset=3&toc=show

accessed in July 2014.

Legally binding national targets of the EU-15 Member States, under the Kyoto Protocol:

http://ec.europa.eu/clima/policies/g-gas/kyoto/index_en.htm

accessed: July 2014

International Atomic Energy Agency (2015) Report on Nuclear Power Reactors in the World. Published Online at: http://www-pub.iaea.org/books/IAEABooks/10903/Nuclear-Power-Reactors-in-the-World-2015-Edition

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https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries

**Unpublished manuscripts:

Anghelescu, G. (2012) Green citizens in the UK – a longitudinal analysis, 1990-2009. MSc Dissertation. University of Southampton