University of Plymouth

PEARL **https://pearl.plymouth.ac.uk**

04 University of Plymouth Research Theses 01 Research Theses Main Collection

2008

Stewards of the earth? : a study of teenagers' pro-environmental attitudes and lifestyles in Devon, UK and Malaga, Spain

Winter, Jennie

http://hdl.handle.net/10026.1/371

http://dx.doi.org/10.24382/3475
University of Plymouth

All content in PEARL is protected by copyright law. Author manuscripts are made available in accordance with publisher policies. Please cite only the published version using the details provided on the item record or document. In the absence of an open licence (e.g. Creative Commons), permissions for further reuse of content should be sought from the publisher or author.

The copy of this thesis has been supplied on the condition that anyone who consults it is understood to recognise that its copyright rests with its author and that no quotation from the thesis and no information derived from it may be published without the author's prior consent.

STEWARDS OF THE EARTH?

A study of teenagers' pro-environmental attitudes and lifestyles in Devon, UK and Malaga, Spain

By

JENNIE WINTER

A thesis submitted to the University of Plymouth
in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

School of Geography
Faculty of Social Sciences and Business

March 2008

ABSTRACT

STEWARDS OF THE EARTH?
A study of teenagers' pro-environmental attitudes and lifestyles in Devon, UK and Malaga, Spain

JENNIE WINTER

Individual responses to sustainability are recognised as fundamental to progressing the sustainable development agenda. In order to raise awareness and support for sustainability, concerted programmes of Education for Sustainable Development (ESD) have been promoted and ESD is now a core element of educational curricula in many countries, particularly in the developed world.

One group of particular interest to educators and policy makers is teenagers. Their engagement with sustainability issues, both in rhetorical and participatory terms, is considered essential to both the short and long term infusion of sustainability into public consciousness. However, despite continuing endeavours to involve teenagers in the sustainability agenda, many remain apathetic despite increases in environmental awareness and literacy throughout society. This suggests there is considerable scope for more extensive analysis of the environmental attitudes and behaviour of teenagers beyond pedagogic influences.

In light of this, the overall aim of the study is to explore the ways in which ESD interacts with other social influences such as families, peer groups and media, in forming young people's environmental awareness and participation in pro-environmental behaviour. Teenagers who participated in the study were secondary and Further Education (FE) students from two European Union (EU) locations, Devon in the United Kingdom (UK) and Malaga in Andalusia, Spain. A cross-national approach was chosen in order to reveal salient factors influencing teenagers' relationship with sustainability in different social contexts. A range of research methods were employed including questionnaire surveys, interviews and focus groups.

The findings indicate that, despite the existence of similar ESD policy commitments and conceptual understandings of sustainability in the two case studies, subtle differences in local social processes had significant impacts on teenagers' participation in pro-environmental behaviours. However, common to both locations there was a need for ESD to be infused as part of a whole schools ethos and for other social contexts, particularly families, to be recognised more fully as influences on teenagers' environmental development. Furthermore, participation in pro-environmental behaviour was strongly influenced by socio-spatial location and teenagers' experienced difficulties transferring learned skills between school, home and peer sites. In many cases this lack of integration resulted in confused understandings and inconsistently held values for behaviour in different settings. From these conclusions, some practical options for greater co-ordination of sustainability strategies within schools and between schools and other social settings are suggested.

CONTENTS

ABSTRACT	iii
CONTENTS	iv
TABLES	xi
FIGURES	xvi
LIST OF ABBREVIATIONS	xvii
ACKNOWLEDGEMENTS	xix
AUTHOR'S DECLERATION	xx

CHAPTER ONE INTRODUCTION

1.0	Public Participation in Sustainable Development	**1**
1.1	Research Aim and Objectives	**6**
1.2	Geographical and Original Contributions	**8**
1.3	Thesis Structure	**10**

CHAPTER TWO REVIEWING DETERMINANTS OF PRO-ENVIRONMENTAL BEHAVIOUR

2.0	Introduction	**13**
2.1	Education for Sustainable Development	**17**
2.1.1	*The International Development of Education for Sustainable Development*	**17**
2.1.2	*Education ABOUT, IN and FOR the Environment*	**21**

2.1.3	*Summary*	33
2.2	Psychological Influences	33
2.2.1	*Attitude*	35
2.2.2	*Altruism*	41
2.2.3	*Demographic Factors*	42
2.2.4	*Locus of Control*	45
2.2.5	*Values*	47
2.2.6	*Emotions*	49
2.2.7	*Summary*	50
2.3	Situational Influence	50
2.3.1	*Logistics*	51
2.3.2	*Media*	52
2.3.3	*Responsibility*	53
2.3.4	*Habit*	55
2.3.5	*Summary*	57
2.4	Psycho-situational Approaches	58
2.4.1	*International Comparison*	62
2.5	Sustainable Lifestyle	64
2.5.1	*Visualising a Methodology*	68
2.6	Chapter Summary	69

CHAPTER THREE METHODOLOGY

3.0	Introduction	71
3.1	Research Informing the Methodology	72
3.1.1	*Researching Teenagers*	72

3.1.2	*Researching Pro-Environmental Behaviours*	**76**
3.2	Research Strategy Data Collection	**83**
3.2.1	*The Questionnaire*	**85**
3.2.2	*Interviews and Focus Groups*	**89**
3.3	Case Studies	**98**
3.3.1	*The Role of the EU*	**99**
3.3.2	*National Contexts: Ideologies, Policies and Strategies in England and Spain*	**101**
3.3.3	*Devon and Malaga*	**112**
3.4	Sampling	**115**
3.5	Ethics	**122**
3.5.1	*Language, Power Relations and Social Distance*	**123**
3.5.2	*Limitations*	**124**
3.6	Chapter Summary	**126**

CHAPTER FOUR ANALYSIS OF QUESTIONNAIRE DATA

4.0	Introduction	**128**
4.1	General Description of Respondents	**130**
4.1.1	*Age Distribution*	**130**
4.1.2	*Gender Distribution*	**131**
4.1.3	*Social Class*	**131**
4.1.4	*Family Composition*	**131**
4.1.5	*Housing Composition*	**132**
4.2	Behaviour	**133**
4.2.1	*Transport*	**133**

4.2.2	*Media*	**135**
4.2.3	*Participation in Family Decision Making*	**139**
4.2.4	*Use of Parks*	**141**
4.3	Lifestyle Indicators	**142**
4.3.1	*Vegetarianism*	**142**
4.3.2	*Purchase of 'Green' Goods*	**142**
4.3.3	*Awareness and Membership of NGOs*	**143**
4.3.4	*Donation of Resources to Environmental Causes*	**144**
4.3.5	*Lifestyle Index*	**145**
4.4	ESD	**149**
4.4.1	*Breadth of ESD across the Curriculum*	**149**
4.4.2	*Environmental Knowledge*	**151**
4.2.3	*Influence of Teachers and Education*	**154**
4.5	Influences upon Environmental Development	**156**
4.6	Chapter Summary	**163**

CHAPTER FIVE PERCEPTIONS OF ENVIRONMENT

5.0	Introduction	**165**
5.1	Teenage Perceptions of Environment in Devon and Malaga	**166**
5.1.1	*Environment as Nature*	**166**
5.1.2	*Environmental Problems*	**170**
5.1.3	*Solutions*	**175**
5.1.4	*Future Imaginations*	**183**
5.2	Discussion	**190**
5.2.1	*Exploring Nature*	**190**

5.2.2	*Environmental Problems Environmental Pessimism*	**196**
5.2.3	*Influences on Teenage Perceptions of Environment*	**204**
5.3	Chapter Summary	**212**

CHAPTER SIX INFLUENCES ON PRO-ENVIRONMENTAL BEHAVIOUR

6.0	Introduction	**216**
6.1	Influences upon Pro-environmental Behaviour in Devon and Malaga	**217**
6.1.1	*The School*	**217**
6.1.2	*The Home*	**230**
6.1.3	*Peers*	**249**
6.1.4	*Transcending Sites*	**255**
6.2	Discussion	**261**
6.2.1	*Attitude*	**262**
6.2.2	*Families*	**264**
6.2.3	*School Site*	**269**
6.2.4	*Media*	**271**
6.2.5	*Peer Influence*	**273**
6.3	Transference between Sites	**275**
6.4	Continuity and Contrasts	**279**
6.5	Chapter Summary	**281**

CHAPTER SEVEN CONCEPTUAL AND POLICY IMPLICATIONS

7.0	Introduction	**287**
7.1	Teenager's Geographies	**288**
7.2	Conceptualising Lifestyle	**293**
7.2.1	*Socio-demographics*	**296**
7.2.2	*Identity and Embodiment*	**297**
7.2.3	*Consumption*	**300**
7.2.4	*Values*	**301**
7.3	Theoretical Implications of a Lifestyle Approach	**303**
7.3.1	*Micro-Geographies and Sites*	**305**
7.3.2	*Benefits and Limitations (Lifestyle)*	**306**
7.4	Micro-Geographies and Transference	**309**
7.4.1	*Benefits and Limitations (Micro-Geographies and Transference)*	**314**
7.5	Implications for Policy	**318**
7.5.1	*ESD*	**319**
7.5.2	*Wider Debates*	**326**
7.6	Chapter Summary	**335**

CHAPTER EIGHT CONCLUSIONS

8.0	Introduction	**336**
8.1	Main Findings and Evaluation of the Thesis	**337**
8.1.1	*Environmental Perception*	**338**
8.1.2	*Determining Barriers and Drivers of Pro-environmental Behaviour*	**340**

8.1.3	*Evaluating Differentiated Power Relations between Adults and Teenagers*	**348**
8.2	Contribution to Contemporary Debates in Human Geography	**351**
8.3	Towards a Research Agenda	**353**

BIBLIOGRAPHY AND APPENDICES

Bibliography		**360**
Appendix 1	The Questionnaire (English)	**395**
Appendix 2	The Questionnaire (Spanish)	**403**
Appendix 3	Interview and Focus Group Structure	**411**
Appendix 4	Letter to Students and Consent Forms (English)	**416**
Appendix 5	Letter to Parents and Consent Forms (English)	**417**
Appendix 6	Letter Requesting Participation of Spanish Schools	**418**
Appendix 7	Letter Accompanying Questionnaires (Spain)	**419**
Appendix 8	Letter to Parents and Consent Forms (Spanish)	**420**
Appendix 9	Letter to Students and Consent Forms (Spanish)	**421**
Appendix 10	Description of Schools	**422**

TABLES

Table 2.1	Categorisation of Environmentally Significant Behaviours	**14**
Table 2.2	Different Forms of Knowledge Influence on Environmentally Sensitive Behaviour	**24**
Table 2.3	Barriers and Drivers to Pro-environmental Behaviour	**61**
Table 3.1	Post-materialism Index	**103**
Table 3.2	Comparative Statistics on Pro-environmental Behaviours in the UK and Spain	**105**
Table 3.3	% Action Taken in the Last Three Months foe Environmental Reasons	**106**
Table 3.4	Population Information for Case Studies	**113**
Table 3.5	Participation rate for Devon	**116**
Table 3.6	Devon Sample Totals	**118**
Table 3.7	Participation Rate for Malaga	**119**
Table 3.8	Malaga Sample Totals	**121**
Table 4.1	Age Distribution by Year Group	**130**
Table 4.2	% of Respondents in Selected Social Class by Location	**131**
Table 4.3	% of Number of Adults at Home by Location	**132**
Table 4.4	% of Respondents Housing Tenure and Garden at Home	**132**
Table 4.5	% of Ownership for Cars and Bicycles per Household	**134**
Table 4.6	Ranking of Daily Transport Use	**135**
Table 4.7	Significant Differences in Frequency of use of Media by Respondents	**136**
Table 4.8	Significant Differences in Frequency of use of Media by Families	**136**
Table 4.9	Daily Television Use	**138**
Table 4.10	Ranking of Means for Participation in Family Activities and Tasks	**140**
Table 4.11	Participation in Family Decision Making about Selected Activities	**140**
Table 4.12	Awareness and Membership of International NGOs	**143**

Table 4.13	Awareness and Membership of National NGOs	**144**
Table 4.14	Donation of Time and Money to Environmental Causes	**145**
Table 4.15	Personal Disposable Money per week	**145**
Table 4.16	Lifestyle Index by Location	**145**
Table 4.17	% Uptake of Behaviour by Location	**146**
Table 4.18	% of Behaviour Uptake by Gender	**147**
Table 4.19	% of Behaviour Uptake by Age Group	**147**
Table 4.20	Means Comparison of Lifestyle Index by Social Class	**148**
Table 4.21	Ranking of Subjects in which the Environment is Discussed	**150**
Table 4.22	Breadth of ESD Provision in the curriculum	**150**
Table 4.23	% of Respondents who Discuss the Environment in 3 or less	**151**
Table 4.24	% Rating of Self-Reported Environmental Knowledge	**152**
Table 4.25	% Awareness of Environmental Issues by Location	**153**
Table 4.26	Significant X^2 Results for Awareness of Environmental Issues	**154**
Table 4.27	Influence of Teachers on Respondents' Feelings about the Environment (%)	**154**
Table 4.28	Influence of Education on Respondents' Feelings about the Environment (%)	**155**
Table 4.29	Influence of Teachers and Education on Respondents	**155**
Table 4.30	Correlation of Teachers and Education against other Possible Influencing Factors	**155**
Table 4.31	Mean and Mode for Influences on Respondent's feelings about the Environment	**157**
Table 4.32	Strength of Influence by Location (Ranked)	**158**
Table 4.33	Correlation Relationships for Influences upon Environmental Development	**159**
Table 4.34	Awareness and Concern for Selected Environmental Issues	**160**
Table 4.35	Significant Concern for Issues by Age Groups	**161**
Table 4.36	Ranking of Environmental Concern by Location	**162**
Table 5.1	Perceptions of Environment (Devon)	**167**

Table 5.2	Animal Rights	168
Table 5.3	Animals and Nature	169
Table 5.4	Global Pollution Problems	171
Table 5.5	Global Pollution and Animals	172
Table 5.6	Direct Experiences of Global Warming	174
Table 5.7	Mistrust of Government	177
Table 5.8	Personal Gain and Pro-environmental behaviour	178
Table 5.9	Legislative Solutions	179
Table 5.10	Technological Solutions	181
Table 5.11	Barriers to Solutions	182
Table 5.12	Economic Solutions	182
Table 5.13	Current State of the Environment	183
Table 5.14	Imagining Environmental Futures	184
Table 5.15	Resource Wars	185
Table 5.16	Crisis	186
Table 5.17	Human Nature	187
Table 5.18	A Less 'Natural' Future	188
Table 5.19	Human Nature and Crisis	189
Table 5.20	Growing up and Pro-environmental Behaviour	189
Table 6.1	ESD at Primary Level	218
Table 6.2	Environmental Awareness and Behaviour	220
Table 6.3	Teachers	221
Table 6.4	The Environment as an Open Discussion	222
Table 6.5	Academic Value of ESD to Students	223
Table 6.6	Environmental Information around School	224

Table 6.7	Social Responsibility	227
Table 6.8	Provision of Bins in School	228
Table 6.9	Local Government and Schools	229
Table 6.10	Family Influence on Pro-environmental Behaviour	231
Table 6.11	Importance of the Family to Environmental Development	233
Table 6.12	Parents	234
Table 6.13	Programmes about Animals	235
Table 6.14	Television and Nature	236
Table 6.15	Steve Irwin	237
Table 6.16	Saving Energy	238
Table 6.17	NGOs	240
Table 6.18	Mothers' Influence	241
Table 6.19	Water Conservation	242
Table 6.20	Financial Incentive	242
Table 6.21	Locating Green Goods	243
Table 6.22	Habitual Behaviours	244
Table 6.23	Discussing the Environment at Home	245
Table 6.24	Television and Protecting the Environment	246
Table 6.25	Television and Environmental Information	248
Table 6.26	Television Influence on Pro-environmental Behaviour	248
Table 6.27	Preferred Television Viewing	249
Table 6.28	Communicating the Environment in Peer Groups (i)	250
Table 6.29	Communicating the Environment in Peer Groups (ii)	250
Table 6.30	Negative Stereotypes of Environmentalists	251
Table 6.31	Preferred Peer Topics	254

Table 6.32	Financial Discounting	256
Table 6.33	High Cost of Organic Produce	257
Table 6.34	Social and Economic Reasons for non-participation in Pro-Environmental Behaviours	258/9
Table 6.35	Purchasing Power Parity Rates for the UK and Spain	267

FIGURES

Figure 2.1	Interrelated Components of Environmental Education	**22**
Figure 2.2	The Four Dimensions of Environmental Knowledge	**23**
Figure 2.3	Contrasting Paradigms: Learning and Pedagogy	**27**
Figure 2.4	Early Linear Models of Attitude-Behaviour	**35**
Figure 2.5	Theory of Reasoned Action	**36**
Figure 2.6	Models of Predictors of Environmental Behaviour	**39**
Figure 2.7	Constraints on Environmental Behaviour	**40**
Figure 2.8	Process of Change – Materialist to Post-Materialist Values	**48**
Figure 2.9	Barriers between Environmental Concern and Action	**60**
Figure 3.1	Research Themes	**85**
Figure 3.2	The Semi-Standardised Interview	**91**
Figure 3.3	Standard set of Analytical Activities for Qualitative Analysis	**98**
Figure 3.4	The Push-and-Pull Model of Implementation	**103**
Figure 3.5	Map of Sample areas in Devon	**113**
Figure 3.6	Map of Sample areas in Malaga	**114**
Figure 3.7	Packs for Students in Devon and Malaga	**117**
Figure 5.1	Adult's Conceptions of Environment	**192**
Figure 5.2	Hope, Literacy and a Dialogue on Futures	**202**
Figure 6.1	The School as Social Agent	**277**
Figure 7.1	Conceptualising the Lifestyle Approach	**295**
Figure 7.2	Consumption as Social Practice	**304**
Figure 7.3	The Four C' Approach	**321**
Figure 7.4	A New Approach	**326**

LIST OF ABBREVIATIONS

AAG	Association of American Geographers
ADENAT	The Nature Defence Association of Spain
ANT	Actor Network Theory
AQTS	Award for Qualified Teaching Status
BAFTA	British Academy of Film and Television Awards
CENEAM	El Centro de Educación Ambiental
CETL	Centre of Excellence in Teaching and Learning
CIE	Cuerpo del Inspectores de Educación
CRB	Criminal Records Bureau
CSD	Commission for Sustainable Development
CSF	Centre for Sustainable Futures
DCSF	Department for Children, Schools and Families
Defra	Department for Food and Rural Affairs
DfES	Department for Education and Skills
DSP	Dominant Social Paradigm
EA	Educación Ambiental
EAP	Environmental Action Programme
EAdEA	Estrategia Andaluzia de Educación Ambiental
EAUC	The Environmental Association for University and Colleges
ECSC	European Coal and Steel Community
EE	Environmental Education
EEC	European Economic Community
EKC	Environmental Kuznet Curve
ENCAMS	Environmental Campaigns
ESB	Environmentally Significant Behaviour
ESD	Education for Sustainable Development
EU	European Union
FE	Further Education
FEE	Foundation for Environmental Education
FOE	Friends of the Earth
GA	Geographical Association
GAP	Global Action Plan
GCSE	General Certificate in Secondary Education
GDP	Gross Domestic product
GNI	Gross National Income
HE	Higher Education
HEI	Higher Education Institution
HEFCE	Higher Education Funding Council for England
IBG	Institute of British Geographers
IEEP	The International Environmental Education Programme
IUCN	International Union for the Conservation of Nature and National Resources
MEC	Ministerio para Educación y Ciencia
MMA	Ministerio de Medio Ambiente
LOC	Locus of Control

LSC	Learning Skills Council
NCSL	National College for School Leadership
NEP	New Environmental Paradigm
NFER	National Foundation for Environmental Research
NGO	Non-Governmental Organisation
NT	National Trust
Ofsted	Office for Standards in Education
PPP	Polluter Pays Principle
PSHE	Personal, Social and Health Education
QCA	Qualifications and Curriculum Authority
RGS	Royal Geographical Society
RSPB	Royal Society for the Protection of Birds
SDB	Social Desirability Bias
SDEP	Sustainable Development Education Panel
SEA	Single European Act
SES	Socio-Economic Status
SEO	Sociedad España de Ornitología
SLE	Significant Life Experience
SSAT	Specialist Schools and Academic Trust
SPSS	Statistical Package for the Social Sciences
SSDA	Sector Skills Development Agency
TTA	Teacher Training Authority
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UK	United Kingdom
VBN	Value Belief Norm Theory
WCED	World Commission for Environment and Development
WSSD	World Summit for Sustainable Development
WWF	World Wildlife Fund

ACKNOWLEDGEMENTS

This thesis has been made possible through the help of many individuals and organisations. First and foremost, I would like to thank my Director of Studies, Dr. Ian Bailey who has provided me with unwavering support throughout the course of writing this thesis. Ian has encouraged, counselled and challenged me over and over and I am deeply grateful for all his efforts. Thanks also to my second Director of Studies, Professor Brian Chalkley for his help in setting the direction of the thesis and for his thoughtful advice on Education for Sustainable Development.

I must also thank the numerous schools in Devon and Malaga who agreed to take part in this project, the many teachers who liaised with me to enable the research and of course, the hundreds of students who took time out of school to talk to me. All of these individuals were enthusiastic and a pleasure to work with. I would also like to thank the staff at Global Action Plan whose contributions helped to orientate the thesis early on.

Within the Geography Department many individuals have kindly offered advice to this project. Thank you to Richard Yarwood, Richard Perkins, Clive Charlton, Nadine Schafer and Marion Parish and also to Pauline Framingham for all her technical help.

Lastly, a very heartfelt thank you to my parents, Sergio, Tilly and Flo Jo for their unquestioning support over the last five years and to Alex for providing me with the motivation I needed to finish. This thesis is dedicated in thanks to Dr. Ian Bailey.

AUTHOR'S DECLERATION

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Graduate Committee.

This research was financed with the aid of a studentship from the School of Geography at the University of Plymouth.

A programme of advanced study was undertaken which included a Postgraduate Diploma in Social Research.

Relevant seminars and conferences were attended at which work was presented and external institutions were contacted for consultation purposes.

CONFERENCE PRESENTATIONS

Winter, J. (2004) Youth and Individual Environmental Responsibility. Annual Conference of the Association of American Geographers: 'Globalisation and Youth', Philadelphia, April 2004

Winter, J. (2006) Cross-national Perspectives on Teenagers' Engagement with Environmental Sustainability. Annual Conference of the Royal Geographical Society (with the Institute of British Geographers): 'Young People's and Children's Engagements and Connections with Environmental Sustainability and Social Justice' London: RGS.

Winter, J. (2007) Teenagers, Lifestyles and the Environment. Postgraduate Symposium: University of Plymouth

EXTERNAL CONTACTS

Centre for Sustainable Futures University of Plymouth
Global Action Plan

Signed.....

Date.....12 . 08 . 2008

Chapter 1

Introduction

1.0 Issues in Public Participation in Sustainable Development

The search for strategies to implement sustainable development represents one of the most critical issues facing society in the twenty-first century. Although the meaning of sustainable development remains hotly contested, its commonly accepted definition in the Brundtland Report (WCED 1987:43) of 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs', encapsulates the broad challenges affecting all aspects of society[1]. In essence the challenge demands the re-direction of development and lifestyles away from a worldview typified by belief in abundance and progress, devotion to prosperity and growth, faith in science and technology and a commitment to principles of a laissez faire economy, towards concepts of sustainability.

Responsibility for the implementation of sustainable development has traditionally been shared between nation states and orchestrated by a close body of international organisations and events. The resulting coalitions have brought sustainable development to the forefront of global affairs and provided the first internationally agreed guidelines (The Stockholm[2] United Nations Conference on the Human Environment (UNCHE) 1972, Rio de Janeiro United Nations Conference on Environment and Development (UNCED) 1992 and Johannesburg World Summit on Sustainable Development

[1] From the international community to individual nation states, communities, social groups and individuals.

[2] The Stockholm Declaration represented the first globally accepted definition of common principles 'to inspire and guide the peoples of the world in the preservation and enhancement of the human environment' (UNCHE 1972: no page). These were later developed at Rio (1992) and Johannesburg (2002).

(WSSD) 2002 Declarations), and programme for implementation Agenda 21 (UNCED 1992).

Through these events sustainable development has become the familiar and accepted face of modern environmental concern, in rhetorical terms at least. The efforts of the United Nations (UN) have led to the organisation of key global events every 5-10 years[3] since the 1992 Rio conference to ensure the continued profile of sustainable development and its progression from abstraction to 'meta fix' (Dobson 1998:33); a universally applicable ethos from which working solutions to environmental problems are built.

Agenda 21, formulated at the World Summit in Rio in 1992 is a dynamic global programme built on the principles laid out in the Stockholm and Rio Declarations. It provides a blueprint for achieving sustainable development to be carried out within each nation state, creating the working link between international environmental decision-making and local practice. It also recognises that organisational change alone will not suffice and that changes in values, attitudes, behaviour and lifestyles are required by all sections of society including communities and individuals.

[3] The UNCHE at Stockholm debated a vast range of environmental problems confronting nation states, organisations and individuals, and recognised that mankind 'bears a solemn responsibility to protect and improve the environment for present and future generations' (UNCHE 1972: Article 36). In 1987 the World Commission on Environment and Development (WCED) conceptualised and defined sustainable development. By 1992, the relationship between sustainability and development was firmly inscribed in the proceedings of the UNCED which produced the Rio Declaration and Agenda 21. However, the UNCED+5 organised by the Commission for Sustainable Development (CSD) was concerned that 'state of the global environment has continued to deteriorate.....significant environmental problems remain deeply embedded in the socio-economic fabric of countries in all regions' (CSD 1997: Article 9). The 2002 WSSD at Johannesburg was also concerned at the volume of targets that had not been met. No new treaties were forged in 2002. Instead there was a focus on building partnerships and more innovative forms of environmental governance.

Individuals are encouraged to embrace sustainability in different ways; economic incentives can help to promote sustainable behaviours (Black 1985), as can increased structural provision to facilitate more sustainable behaviour (Barr 2003): However these methods do not fully address the complex of value, attitudinal and behavioural changes required to achieve sustainability. The main vehicle promoting such changes has been ESD[4]. ESD has been the main means of cultivating individuals who are critically informed about environmental issues and solutions. The foundations for contemporary ESD were originally laid at the UNCHE (1972) conference in Stockholm before it evolved its own distinct programmes. The United Nations Environment Programme (UNEP 1975), the International Environmental Education Programme (IEEP)[5], the International Environment Workshop in Belgrade (1975), and the United Nations Education Scientific and Cultural Organisation (UNESCO) conference at Tbilisi (1977). ESD was also central to the outcomes of Rio and Agenda 21 (1992). It was in Tbilisi (1977) that one of the first significant intergovernmental statements on environmental education was produced, with definitive goals for its achievement:

1. To foster clear awareness of, and concern about, economic, social, political, and ecological interdependence in urban and rural areas;
2. To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment;
3. To create new patterns of behaviour of individuals, groups, and society as a whole towards the environment.

(UNESCO 1977:26)

These goals exemplify a shared desire, through ESD to create critically informed and literate individuals who crucially adopt 'new (sustainable) patterns of behaviour'.

---

[4] ESD was previously known as Environmental Education (EE). There are several key differences between the two. EE focused on promoting awareness about the environment and encouraging individual behaviour change, whereas ESD does consider environmental protection, but within the broader ambit of sustainable development and promotes changes to socio-economic processes and people's lifestyles (chapter 2). The preference for ESD is evident in Agenda 21 which describes the reorientation of education towards sustainable development and was concretised in 2002 when the UN adopted resolution 57/254 on the UN decade of Education for Sustainable Development.

[5] The IEEP was in existence from 1975 until 1995.

However, despite a surge in educational initiatives, ESD has proved not to be the panacea it was thought to be. Indeed, although environmental issues are now firmly embedded within many educational curricula, behavioural transformations of the scale and nature envisaged by the original architects of EE have generally lagged behind desired results (Hines *et al.*1986, Kollmuss and Agyeman 2002, Morris and Schagen 1996).

The apparent shortfall of ESD as the sole medium of promoting behavioural change suggests that other societal processes are also influential in individual decision-making about pro-environmental behaviour. After all, education does not exist in a vacuum; individuals interpret ESD in a variety of ways; influenced by a range of personal, demographic and social variables. These are therefore critical to any rounded analyses of environmental awareness, attitude and behaviour (Azjen and Fishbein 1980; Black 1985; Hines *et al.* 1986; Kollmuss and Agyeman 2002; Palmer and Neil 1994). However, many studies exploring such themes have focused on singular behaviours (Barr 2003) or educational initiatives (Gurevitz 1997), and have failed to explore with sufficient rigour the effects of situational, educational and psychological factors upon people's understanding of, empathy with, and actions to promote, sustainability.

Although isolating the effects of educational and situational factors on the individual is difficult, exploring these influences is crucial to the understanding of the sustainability challenge. Any shift away from current dominant worldviews demands new perspectives in order to understand and construct appropriate pathways for sustainable development for differing groups in society.

One group of particular interest to educators and policy makers alike are young people. The UN considers young people to be an important target group in the implementation of sustainability. Their participation is considered essential to its immediate progress as

well as its long term social approbation. However, despite continuing endeavours to involve youth in the sustainability agenda, many remain apathetic towards environmental protection despite an increase in general environmental awareness and literacy throughout society (Eurobarometer 2002).

Research has charted how young people experience environmental sustainability through a range of mediums; family, peers, play, organised groups and media (Morris and Schagen 1996), but how their impact upon reproducing sustainability is constrained by their general lack of agency 'There is little recognition of the possibility that young people can, and do actively appropriate, transform as well as absorb social practice and knowledge. In no way are young people seen as social actors' (Jones 2003:36). However, in the contemporary climate of globalisation, children clearly do exert significant agency. On a micro-scale, they may influence the environmental behaviour of parents, while the macro impacts of young people's purchasing power is undeniable. Recognition of the importance of young people's attitudes and actions towards environmental issues has come in the shape of the United Nations International Children's Conferences on the Environment (UNEP 2002; 2005; 2006). All this suggests that considerable scope and need exist for more extensive analysis of the environmental attitudes and behaviour of young people beyond pedagogic influences. The sustainability rhetoric talks expansively about future generations but it is important to remember that tomorrow's generation is already present and subject to conflicting pressures from, on the one hand, the sustainability agenda and, on the other, the moral and social contexts that sustainability seeks to reform.

Considering these factors, the thesis focuses on young people who are recipients of ESD in secondary and FE. In order to address the limitations of approaches which focus on individual attributes of behaviour or individual strategies to encourage behaviour

change, the influence of ESD is set within a wider network of situational factors; families, peers and media. By conceptualising the young person as embedded within a constellation of influences which interact to produce commitment to sustainability and participation in pro-environmental behaviours, it is hoped that a more representative account of the relationships young people have with sustainability will be achieved.

1.1 Research Aims and Objectives

Set within this context, the overall aim of the thesis is to establish in what ways the situational factors of ESD, families, peers and media influence teenagers'[6] environmental awareness and participation in pro-environmental behaviour. Recognising that these processes are likely to have an amalgamated impact, the study explores their relative influences and reasons for continuities and contrasts in teenager's experiences. Within this aim three objectives are addressed:

1. To explore how teenagers understand and value the environment and sustainability;

2. To determine key barriers and drivers of pro-environmental behaviour amongst teenagers including socio-demographic variables;

3. To evaluate the impact of differentiated power relations between adults and teenagers upon teenagers' participation in pro-environmental behaviours.

[6] Teenagers are an identifiable sub-group amongst young people and are defined as aged between 13 and 19 years old. This provides the thesis with a less ambiguous referent than 'young people'. This is discussed further in chapter 3.

The study focuses on two case studies within the EU, Devon County in the UK and Malaga province in Spain. Research utilising multiple case studies has become increasingly popular in studying peoples' participation in sustainability (Burgess *et al.*1998). A trend paralleled by a rising interest in studying continuities and contrasts throughout Europe (Bognor 2000; Bognor and Wiseman 2002; Börzel 2000a; 2000b; 2003; Eurobarometer 1999; 2002; 2005; Palmer *et al.* 1998a; 1998b).

The UK and Spain are EU states with distinct socio-economic and cultural histories which contribute to the way sustainable development is managed within policy, industry, business, economy and by individuals. Spain has been accused of being an 'environmental laggard' (Börzel 2000a; 2000b; 2003), slow to implement EU environmental directives and procrastinating over the integration of sustainable development into its national policy framework. The UK, although quicker to implement EU directives to national policy has faced criticisms for adopting a soft approach to sustainability more representative of ecological modernisation than sustainable development (Munton 1997). However, both states through their membership of the EU and mutual ratification of Agenda 21 are similarly committed to an overall strategy for sustainable development which includes the mainstream dissemination of ESD and promotion of pro-environmental behaviours.

This suggests that teenagers in both locations are likely to be similarly aware of the environment and sustainable development. However, numerous studies suggest an ambiguous relationship between awareness and participation in pro-environmental behaviour encouraging alternate explanations for factors which influence behaviour (Kollmuss and Agyeman 2002). Therefore in contrast to the internationally agreed substance of ESD, the local, social and culturally informed discursive texts of families, peers and media are likely to impact on teenager's participation in behaviour in each

location in different ways. A cross-national study therefore has potential to reveal the salient factors influencing teenagers' relationship with sustainability as well as acknowledging the impacts of local processes. Such findings are important for the EU in continuing its challenge of creating sustainable society across a plethora of European cultures.

1.2 Geographical and Original Contributions

Within geography there have been few conceptualisations of individual relationships with the environment and sustainability. Noticeable contributors are Eden (1993), who has extensively discussed individual environmental responsibility and Eden (1998), Harrison and Davies (1998) and Macnaughten (2003) who have all debated the ways in which lay people construct environmental knowledge in the face of increasing complexity and uncertainty. Within psychology, which has tended to dominate theorisations of attitude and behaviour, many studies of younger people (Bognor 2000, Bognor and Wiseman 2002, Dwyer 1995, Kilbourne *et al.* 2001, Lyons and Breakwell 1994) have adopted a quantitative framework and analyses. These have produced conclusions which, although able to describe wider trends in attitudes and behaviours, are not able to explain causal links between these on a wider social scale. This has lead to the acknowledgement of a knowledge-action 'gap' (Kolmuss and Agyeman 2002) which has been exhaustively researched with as yet no definitive conclusions. Educational approaches have tended to focus on pedagogic aspects of 'what works' rather than assimilating external influences into analysis. One exception to this is the National Foundation for Environmental Research (NFER) study (Morris and Schagen 1996), which highlighted the role of families, media and peers as mediators of ESD, but only evaluated their results through statistical analysis, not in the words of the participants themselves.

A geographical approach can offer new perspectives to enrich existing interdisciplinary research on people's relationships with sustainability. There is an obvious geographical component in the decision to compare influences affecting the environmental development of people in different locations, as this enables examination of the effects of differing traditions, cultures and institutional and educational structures. A geographical approach also provides an opportunity to examine on a local scale, differences between groups that are assumed by broad international strategies to be homogenous, and also which factors are shared and why.

In terms of policy relevance, the multiple case study methodology has significance for Agenda 21, as it is a nationally-defined but globally conceived response to common and shared sustainability issues. It is important, therefore, to understand how the challenge of creating environmentally literate citizens varies between countries. Of further policy relevance is the theme of differentiated environmental governance and the movement away from the state as the sole locus of initiatives for solving society's ills (Agnew 2005).

Within geography there has been a surge of research interest in children and youth groups over the past two decades following the conceptualisation of youth not just as a biological era but also as a social construction (Matthews *et al.* 1998). Within geography this has been recognised with the newly published Children's Geographies (2003) and the increasing attention given to youth studies on the conference circuit (Association of American Geographers (AAG) 2003; 2004; Children's Geographies 2004, Royal Geographical Society with the Institute of British Geographers (RGS/IBG) 2006). As yet however, only limited research exists which attempts to engage with and

combine the literatures of children's geographies and those documenting public participation in sustainability (Gurevitz 1997, Jones 2003, Morris and Schagen 1996).

In presenting a geographical study of the processes and relationships which define teenager's negotiations of sustainability, the thesis addresses a current dearth of research in this area. The participation of teenagers (amongst other groups of young people) is considered essential to sustainable development (Johnson 2007; Uzzell 1999) and the study is well placed to contribute to current descriptions, understandings and theorisations about their participation.

1.3 Thesis Structure

Chapter 2 introduces and examines the major theoretical frameworks within which the notion of sustainability has been conceptualised in an effort to understand people's relationship with sustainability. The first section reviews ESD in the context of its international origins, development and current application. The review then examines common approaches to studying pro-environmental behaviours, discussing and evaluating psychological, contextual and psycho-social epistemologies. Finally, the idea of sustainable lifestyle is introduced as a framework for informing the methodology and analysis of the thesis.

Chapter 3 describes the methodology and methods used to conduct this research. It begins by placing the thesis methodology within its theoretical and epistemological contexts and uses wider research to illustrate and justify the chosen research strategy. The chapter then discusses the methods applied to achieve the study's aim and objectives. Interviews and focus groups were used as the main tools to construct the

core element of qualitative data whilst questionnaires provided broader information in which to contextualise the qualitative findings.

Chapter 4 presents the results from the questionnaire. Using statistical analyses, relationships within the data are presented and their significance discussed. The chapter also explores relationships between the socio-demographic identity of participants, their participation in selected pro-environmental behaviours, their exposure to ESD and levels of environmental awareness and concern. Finally, salient contrasts and commonalities within the sample are discussed.

Chapter 5 explores common perceptions of the environment held by participants. These are firstly discussed in relation to nature and as a set of interrelated social and scientific issues, followed by discussions of possible solutions and environmental futures. These findings are then discussed in the context of previous literatures. The chapter then evaluates the influence of a number of discursive texts upon teenagers' environmental development and perceptions.

Chapter 6 considers which factors and influences motivate teenagers to act in ways which benefit or harm the environment and focuses on key local processes and events and their relation to behaviour, education, family, media, Non Governmental Organisations (NGOs) and peers. These findings are then discussed and evaluated in the context of the emergent research themes and previous literatures.

Chapter 7 then presents the implications of this study for conceptual understandings of teenagers' negotiations of sustainability, environmental awareness and participation in pro-environmental behaviour and for policies. Firstly, the findings are discussed in the

context of teenagers' geographies, demonstrating how the concepts of 'in-betweeness' (Tooke 2000), social agency and participation can provide beneficial analytical lens' with which to explore the findings. Following this, the chapter discusses the concept of sustainable lifestyles, providing innovative explanations for the way teenagers embed principles of sustainability within their routine lifestyle preferences. The theoretical advantages and contribution of this approach for research on young people's participation in pro-environmental behaviours is then evaluated in terms of structure and agency and micro-geographies. Finally, the implications of these conclusions for policy are discussed.

Chapter 8 reiterates the main points of the thesis and presents a summary of conclusions. The final section suggests avenues for further research to advance understandings of the influences and processes which determine pro-environmental behaviours among teenagers and the wider population.

Chapter 2

Reviewing Determinants of Pro-environmental Behaviour

2.0 Introduction

This chapter consolidates existing literature about known influences on environmentally significant behaviours (ESBs) focusing on pro-environmental behaviour. An ESB is defined by Stern (2000:408) as a behaviour that 'can reasonably be defined by its impact: the extent to which it changes the availability of materials or energy from the environment or alters the structure and dynamics of ecosystems or the biosphere itself' (also Bedford 2003; Stern 1997). This constitutes an expansive definition applicable to all spheres of human activity; however, for the purposes of this study, the focus is on pro-environmental behaviour amongst individuals in their personal lives.

The concept of individual environmental responsibility has developed as a concept to ameliorate resource and pollution pressure on the global environment and its significance to the sustainability debate is well documented. Barr (2002:6) claims that the success of sustainable development depends on 'political will and more importantly, the will of the populace'. However, he recognises that behavioural responses in the public domain remain limited despite the increasing importance of the role of the individual in environmental policy and discourse. 'It seems behavioural change is only likely to result from tangible shifts in attitudes towards the environment with the context of a clear programme for sustainable development' (Barr 2002:7).

The role of the individual in contributing to environmental sustainability is based around behavioural change. Pro-environmental behaviour is defined by Kolmuss and Agyeman (2002:240 italics added) as 'behaviour that *consciously seeks* to minimise the

negative impact of one's actions on the natural and built world (e.g. minimise resource and energy consumption, use of non-toxic substances, and reduce waste production)'. Darnton (2004a; 2004b) provides a useful list of significant behaviours relevant to the domestic sector: energy use, transport use, fuel use, water use, waste and household consumption. Also important in this context are indirect behaviours such as reading and writing about environmental issues and activism in its various forms which have the potential to influence others. Thus, there is a broad spectrum of behaviours and associated activities encapsulated in this concept (Table 2.1).

Behaviour Type	Characteristics
Environmental activism	Committed activism, participation in environmental organisations and demonstrations
Non-activist public sphere behaviours	Active environmental citizenship Support for public policies Concern often influential
Private sphere environmentalism 'lifestyle consumption'	**House:** heating, lighting, appliances… **Transport:** cars, buses, flights… **Product consumption**: clothes, food, household goods…
Other significant environmental behaviours	Individuals affect organisations by their actions, individuals may or may not take environmental considerations into organisational decision making

Table 2.1 Categorisation of Environmentally Significant Behaviours

(Adapted from Stern 2000)

Recognising this, Stern (2000:421) states that, 'Environmentally sensitive behaviour is dauntingly complex, both in its variety and the causal influences upon it'. Research has revealed that different groups in society are affected differently by drivers and barriers to behaviour and that understanding these processes is essential to developing effective

strategies to promote environmental sustainability (Darnton 2004a; 2004b; Stern, 2000). Young people are identified as a sub-group within the general population (Darnton 2004 a; 2004b) and the ways in which they make sense of environmental sustainability and ESBs warrants investigation since the role of today's young people in environmental and sustainability debates is particularly intriguing and problematic. On the one hand, they are portrayed as the key to the future and the generation whose quality of life will be most directly affected by present actions (Griffin 1993). In the UK and many other countries, they are also the first generation to receive ESD as a curriculum staple, so, in theory at least, are more cognisant than their predecessors of the vocabulary, values and practice of sustainable development. On the other hand, young people lead relatively restricted lives in terms of political and economic participation, spatial freedom and social agency. They are also increasingly at the forefront of globalisation as consumers of media and manufactured products, much of which militates against their ability to negotiate the complexities of the sustainability debate.

Current knowledge about young people's relationships with environmental sustainability remains fragmented and has a strong focus on pedagogic understandings. This focus tends to objectify young people in terms of their responses to pedagogic influences and often fails to explore other influences that cause many young people to remain apathetic towards environmental sustainability. Research has demonstrated that, in general, primary age schoolchildren are more likely to have a relational view[1] of the environment and hold higher levels of environmental concern than secondary aged schoolchildren (Hicks and Holden 1995). This contrasts with research on adults, which suggests higher levels of education increase environmental concern and, often, behaviour. This indicates that during the time young people attend secondary school,

[1] A relational view of the environment is one where individuals feel they are part of the environment through a mutually sustaining relationship and therefore are responsible for looking after the environment.

influences exist which erode their ability to respond favourably to environmental sustainability despite the presence of ESD throughout the curriculum.

The context set, this chapter now examines the literature pertaining to common influences on young people's interaction with environmental sustainability. To date only a limited amount of empirical work exist which specifically researches youth outside of educational settings. Therefore literature from adult based studies is often used to construct a picture of current knowledge on pro-environmental behaviour and attitudes.

The chapter begins by reviewing contemporary issues surrounding ESD. The first section describes the historical development of ESD (2.1.1), charting its international origins to local implementation through agreements such as Agenda 21 (UNCED 1992). Section 2.1.2 provides a critique of the pedagogic structure of modern ESD, examining the main themes of education IN, ABOUT and FOR the environment. The final part of this section (2.1.3) draws this discussion together by pointing out the main benefits and disadvantages of ESD as a strategy to promote individual environmental responsibility and behavioural change among young people. Section 2.2 explores psychological influences on pro-environmental behaviours. The section covers a selection of the major subject topics that psychological approaches have found significant; attitude-behaviour modelling approaches, altruism, demographic factors, locus of control, values, and emotionality (sections 2.2.1-2.2.6). The chapter then considers situational explanations for influences upon behaviour. A brief introduction explains how understanding of situational factors emerged due to limitations of educational and psychological explanations. Sections 2.3.1-2.3.4 describes the influences of logistical limitations, media, responsibility and habit. A summary then reviews the contributions of

psychological and situational influences, pointing out the fallibility of such narrowly focused approaches to comprehensively explain the complex of factors influencing pro-environmental behaviours, and introducing combined (psycho-situational) approaches.

Section 2.4 discusses psycho-situational approaches. Key studies which argue for coherency and the move away from epistemological and methodological reductionism (Blake 1999; Kollmuss and Agyeman 2002; Stern 2000) are described and the benefits of such approaches are discussed in the context of internationally comparative research (2.4.1). Section 2.5 explores the potential of lifestyles research in terms of its ability to reveal how influences and environmental experiences are embodied and interpreted by individuals. In this it is argued that lifestyle research is useful in explaining the relationship between environmental identity, behaviour and sustainability, and provides an alternative epistemological approach to conventional behavioural research. Finally, a summary is presented (2.6).

2.1 Education for Sustainable Development

ESD has emerged as a key strategy for encouraging a global population which is positively orientated towards, and expresses its commitment to, environmental sustainability through attitudes and action. Its aim is to create a populace that is environmentally concerned, literate, pragmatic and critical (UNESCO 1977). This section describes the historical development of international ESD before providing an evaluate critique of education IN, ABOUT and FOR the environment.

2.1.1 The International Development of Education for Sustainable Development

The 1960s and 1970s constituted a key period in thinking about the relationship between humans and the natural world. Highly influential writers such as Rachel Carson

(1962), Garett Hardin (1968) and Meadows *et al.* (1972) fuelled a growing social reflexivity that questioned the then dominant technocratic attitude towards natural resources and systems. These authors cast doubt over traditional cornucopian worldviews and popularised the view that the Earth contained only finite resources. These fears facilitated international concern for the global environment and prompted dialogue in the form of a series of global conferences about how to manage trans-boundary environmental problems. These conferences produced an array of agreements and pathways to environmental sustainability, wherein ESD emerged as a key strategy to facilitate awareness raising and behavioural change amongst the public (IEEP 1975; IUCN 1970; IUCN 1980; UNCHE 1972; UNESCO 1977; WCED 1987).

The genesis of contemporary ESD was formulated at the 1970 meeting of the International Union for the Conservation of Nature and Natural Resources (IUCN). Its declaration sets out the key principles of what was then termed EE, its core components an armoury with which to build the future discipline. Despite its nascence, the definition has remained influential.

> Environmental education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness amongst man [sic], his culture and his biophysical surroundings. Environmental education also entails practice in decision making and self formulation of a code of behaviour about issues concerning environmental quality (IUCN 1970 cited in Palmer and Neil 1994:12).

The statement proposes the formation of a 'code of behaviour' for the individual as both contributor to and solver of environmental issues. The 1972 UNCHE at Stockholm also placed individual responsibility for the environment at the heart of global environmental policy and made EE a cornerstone of this strategy. It further argued that all aspects of education needed to be reconsidered to achieve the desired behavioural changes. Thus,

the implementation of EE came to have direct implications for traditional education in terms of curricula and pedagogy, (IEEP 1975; IUCN 1980), a finding which has been well supported within the academy (Hutchison 1998; Palmer 1998; Scott and Gough 2003; Sterling 2001). 'Environmental education is regarded as the embodiment of a philosophy which should be pervasive, rather than a 'subject' which might be separately identified' (Palmer 1998:9).

The Stockholm Declaration prompted a series of specialist educational fora to direct the development and dissemination of EE. In 1975, the UNEP was established, which, together with UNESCO, created the IEEP (1975-1995). The IEEP produced the initial intergovernmental statement on environmental education, 'The Belgrade Charter: A Global Framework for Environmental Education' (1975).

The Belgrade Charter represented an important watershed in EE. For the first time it was given the substance and direction to achieve social change. It outlined a clear goal for EE, based on the notion of a 'new global ethic'[2] and suggests six components of the pedagogic strategy for EE. The charter was seen to provide an overarching framework for future efforts and was endorsed by subsequent UN conferences (IUCN 1980; UNESCO 1977; WCED 1987)

> The goal of environmental education is to develop a world that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively towards solutions of current problems and the prevention of new ones (IEEP 1975:3).

The objectives of the Belgrade Charter were as follows;

- **Awareness**: to help individuals and social groups acquire an awareness of, and sensitivity to, the total environment and its allied problems;

[2] 'An ethic which espouses attitudes and behaviour for individuals and societies which are consistent with humanity's place within the biosphere; which recognises and sensitively responds to the complex and ever-changing relationship between humanity and nature and between people' (IEEP 1975:1).

- **Knowledge**: to help individuals and social groups acquire basic understanding of the total environment, its associated problems and humanity's critical presence and role in it;
- **Attitude**: to help individuals and social groups to acquire social values, feelings of concern for the environment and the motivation to participate in its protection and improvement;
- **Skills**: to help individuals and social groups acquire the skills for solving environmental problems;
- **Evaluation Ability**: to help individuals and social groups evaluate environmental measures and education programmes in terms of ecological, political, economic, social, aesthetic and educational factors;
- **Participation**: to help individuals and social groups develop a sense of responsibility and urgency regarding environmental problems to ensure appropriate action to solve those problems (IEEP 1975:3).

In 1980, The World Conservation Strategy (IUCN) expanded the base of EE by suggesting the first general framework for 'sustainable development'. 'Development and conservation operate in the same global context and the underlying problems that must be overcome if either is successful are identical' (IUCN 1980: Article 20)[3].

> Ultimately the behaviour of entire societies towards the biosphere must be transformed if the achievement of conservation objectives is to be assured. A new ethic, embracing plants and animals as well as people, is required for human societies to live in harmony with the natural world on which they depend on for survival and well-being. The long term task for environmental education is to foster or reinforce attitudes and behaviour compatible with this new ethic (IUCN 1980: Article 13).

Implicit in this statement, as in the Belgrade Charter (1975), is the notion of a new ethic for EE based on a cultural response to environmental issues (Gruenewald 2004), the premise being that redirecting commonly held values about the environment towards those values associated with environmentalism would prompt behavioural change.

---

[3] In 1987 the WCED produced a definition of sustainable development. 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

These themes were further elaborated at the UNESCO conference in Tblisi in 1977 and at the UNCED in Rio de Janeiro in 1992. Of the various Rio agreements, the two which considered EE most explicitly were the Rio Declaration and Agenda 21[4]. The Declaration reaffirmed the Stockholm Principles, adding the need for transparency and access to environmental information, whereas Agenda 21 set out a detailed action plan for implementing sustainable development. Chapter 36 of Agenda 21 (Promoting Education, Public Awareness and Training) focuses on three programme areas[5] all of which promote the reorientation of traditional education towards including ESD through formal and informal channels, and Chapter 25, which refers to youth as a major target group for *participation* in sustainable development. The document calls for ESD to be delivered within each state as a cross curricula theme within three years and stresses the necessity of partnerships between education, community, media and industry.

2.1.2 Education ABOUT, IN and FOR the Environment

ESD is intrinsically prescriptive in its focus on redirecting values, beliefs, attitudes and behaviour (Palmer and Neil 1994). However, the recommendations set out at Belgrade (IEEP 1975) and Tbilisi (UNESCO 1977) have been translated into pedagogic practice by compartmentalising ESD as ABOUT, IN and FOR the environment (Figure 2.1) (Greenall 1981; Lucas 1979; Schools Council 1974). This framework is utilised here to structure a discussion of the identity, common benefits and deficiencies of contemporary ESD, as it encompasses the different pedagogic dimensions and types of engagement necessary to implement the informative and the transformative elements of ESD.

---

[4] The other main agreements produced at Rio were the Framework Convention on Climate Change, the Convention on Biodiversity and the Forest Principles.

[5](a) Reorientation education towards sustainable development, (b), increasing public awareness and (c) promoting training.

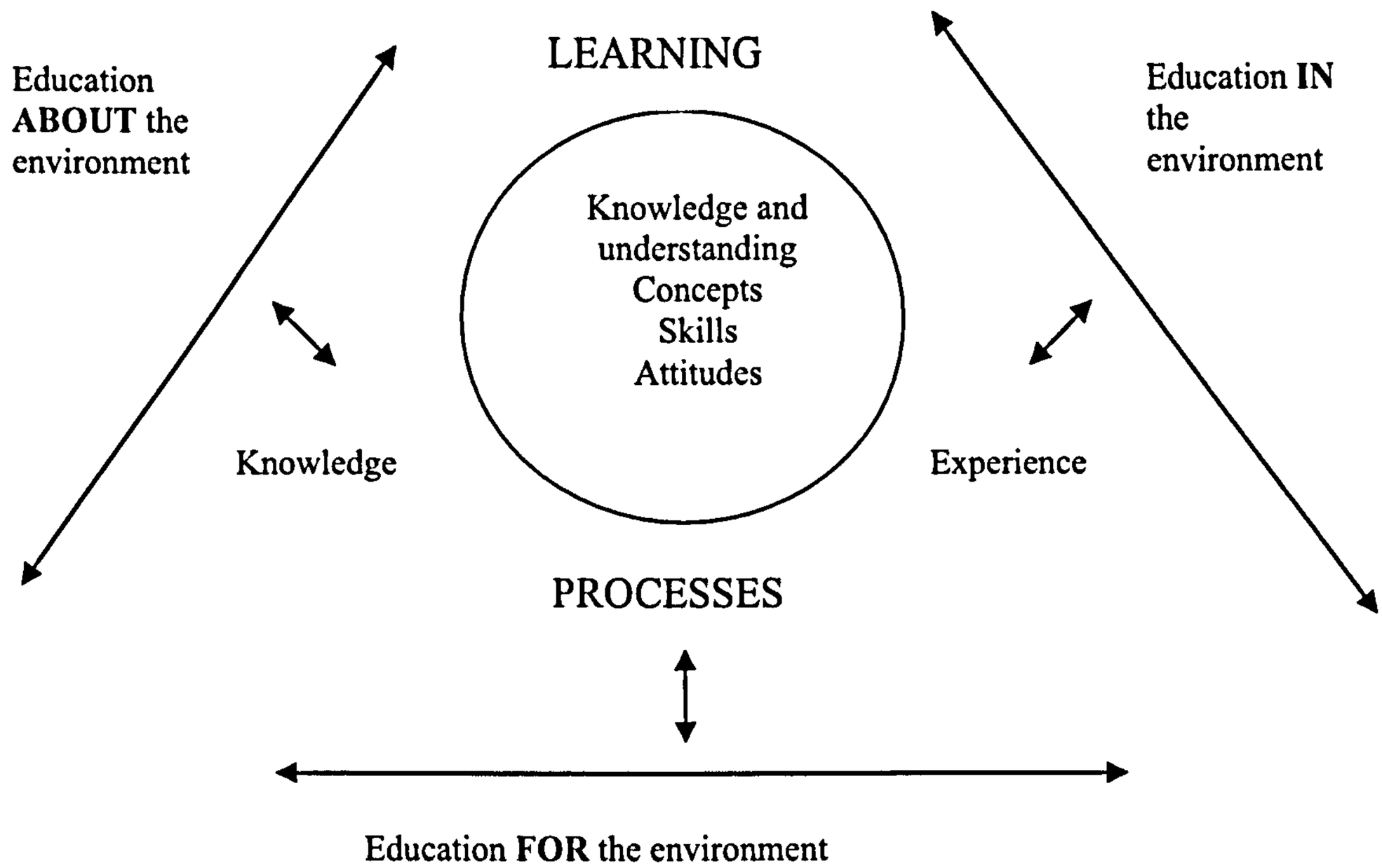

Figure 2.1. Interrelated Components of Environmental Education

(Adapted from Palmer and Neil 1994:30)

Education ABOUT the Environment

> Education **ABOUT** the environment seeks to discover the nature of the area under study often through investigatory and discovery approaches; the objectives are chiefly cognitive ones in that the aim is to amass information (Schools Council 1974, cited in Palmer and Neil 1994:19).

The development of ESD as a strategy to facilitate pro-environmental behaviour led to inevitable questions about how to educate. Early research concluded that individuals act 'rationally' according to the information they were exposed to (Azjen and Fishbein 1980; Childress and Wert 1976; Fietkau and Kessel 1981; Hines *et al.* 1986-7). Therefore, the dearth of pro-environmental behaviours amongst the public was theorised as a matter of 'information deficit' (Burgess *et al.* 1998:1447).

Despite the provision of information about the environment through education, mass behavioural changes remained elusive. Kolmuss and Agyeman (2002:241) describe how

'research showed that in most cases, increases in knowledge and awareness did not lead to pro-environmental behaviour' and the general consensus amongst researchers has been that environmental knowledge is only weakly linked to behaviour (Borden and Schettino 1979; Fliegenschnee and Schelakovsky 1998; Kempton *et al.* 1995; Schahn 1993a; Stern 1992b; Stern and Oskamp 1987). This raises questions as to the composition of environmental knowledge. Research has demonstrated that it is not the volume of knowledge that influences behaviour; rather, qualitatively divergent knowledges are required. Jensen (2002) (Figure 2.2) and Kaiser and Fuhrer (2003) (Table 2.2) suggest schemas of knowledge types that converge to enable behaviour; 'knowledge is successful in its endeavour only when different knowledge forms *promote ecological behaviour jointly and convergently*' (Kaiser and Fuhrer 2003:604 original italics).

1st Dimension	Effects	Essentially scientific
2nd Dimension	Causes	Socio-cultural
3rd Dimension	Strategies	Psychological, political, sociological and cultural
4th Dimension	Vision	Placing ourselves in the wider world

Figure 2.2 The Four Dimensions of Environmental Knowledge

Jensen (2002:330)

Declarative Knowledge	Knowledge about environmental systems i.e. biology, chemistry. Reduces uncertainty and increases understanding
Procedural Knowledge	Knowledge to achieve conservation goal Refers to behavioural options and possible courses of action Awareness of opportunities
Effectiveness Knowledge	Knowledge about the relative conservation effectiveness of behaviour Choosing between behavioural alternatives
Social Knowledge	Refers to the motives and intentions of others Derives from the observation of others behaviour Socially shared or common knowledge Depends on socialisation leads to: Moral and conventional social norms

Table 2.2 Different forms of Knowledge Influence on Environmentally Sensitive Behaviour

Adapted from Kaiser and Fuhrer (2003:600-603)

It can be inferred from these examples that knowledge operates on multiple levels. The descriptive information provided through declarative knowledge is a staple ingredient within curricula as it provides a sound and necessary base for understanding the need for sustainability (Hines *et al.* 1986-7; Kolmuss and Agyeman 2002; Tanner 1999;

Wilcox 1993). However, there remain strong criticisms of reliance on this knowledge type.

> ...policy still fails to appreciate the huge gulf between information and action, between understanding as awareness and understanding as the cause of behaviour. Policy makers seem to assume that environmental education drawing from scientific work will lead to people making the link between policy and action in order to meet policy objectives (Eden 1996: 197).

The importance of procedural (Barr 2003; Holdsworth 2003; Schahn and Holzer 1990; Sia *et al.* 1985) and effectiveness knowledges (Bedford 2003; Hobson 1999; Lyons *et al.* 2001) is also well documented; however, the influence of social norms remains a critical concern. 'Social knowledge can still restrain a person from [pro-environmental] conduct even when all other forms of knowledge are present' (Kaiser and Fuhrer 2003:604; Sterling 2001). This suggests a knowledge hierarchy where declarative, procedural and effectiveness knowledges are not sufficient to facilitate behavioural change but are potentially influential when set amongst a supportive social context (Azjen and Fishbein 1980; Barr 2003; Foppa 1989; Frey 1989; Hines *et al.*1986-7; Kolmuss and Agyeman 2002; Tanner 1999; Uzzell 1999). The obvious challenge to education, then, is how to assimilate these different types of knowledge into a coherent programme to implement ESD.

Knowledge about the environment in all its forms is collaboratively produced by society, not only by formal education. Knowledge as information can be 'nebulous, scattered, often highly technical and usually biased' (Hawthorne and Alabaster 1999:26; Jeffers 1995), can be difficult to negotiate (Norman 1991) and evolves from different origins. Ostman and Parker (1987) note the importance of the media both in creating and communicating knowledge and other authors have observed the distinction between lay and expert knowledges (Blake 1999; Eden 1996; Giddens 1991; Wynn 1996). This helps to demonstrate how knowledge is culturally structured and infused with shared

social values. Yet it is also, to varying extents, unique from one individual to the next (Lipman 1991; Longino 1990). The communication of knowledge is, therefore, as important a factor as knowledge itself, a theme discussed further in the next section.

Education IN the Environment

> In educating **IN** the environment, teachers must have sought to forward the general education of the child by using the environment as a resource in two main ways; firstly, as a medium for enquiry and discovery which may lead to the enhancement of the learning process, the most important aspect being how to learn and secondly, as a source of material for realistic activities in language, mathematics, science and craft... (Schools Council 1974 cited in Palmer and Neil 1994:19)

Education IN the environment is essentially about making the environment relevant to students by using the environment as a teaching resource to make cognitive and emotional connections between issues and between the student and their surroundings. There is widespread recognition of the success of experiential methodologies in EE and ESD (Aldrich-Moodie and Kwong 1997; Blades 1989; Hammond and Collins 1993; Hart 1997; Hutchison 1998; Jones 2003; Loughland *et al.* 2003; Palmer 1998; Palmer and Neil 1994; Pui Ming Yeung 2002; Scott and Gough 2003; Sterling 2001) and consequently, this has led to proposals for alternative pedagogic approaches. Figure 2.3 provides an overview of the differences between the learning and teaching practices of traditional top down transmission models relative to ecological learning models which advocate education IN the environment as a key component of achieving the transformative element of ESD (education FOR the environment).

	Technocratic/ Mechanistic	Ecological
View of teaching and learning	Transmission Product orientated Emphasis on teaching Functional competence	Transformation Process, development and action orientated Integrative view: teachers also learners, learners also teachers Functional, critical and creative competencies valued
View of learner	As a cognitive being Deficiency model Learners largely undifferentiated Valuing intellect Logical and linguistic intelligence Teachers as technicians Learners as individuals	As a whole person Existing knowledge, beliefs and feelings valued Differentiated needs recognised Intellect, intuition and capability valued Multiple intelligences Groups, organisations and communities also learn
Teaching and learning styles	Cognitive experience Passive instruction Non-critical inquiry Analytical and individual inquiry Restricted range of methods	Also affective, spiritual, manual and physical experience Active learning styles Critical and creative inquiry Appreciative and co-operative inquiry Wide range of methods and tools
View of learning	Simple learning (first order)[6] Non reflexive, causal Meaning is given Needs to be effective No sense of emergence in the learning environment/system	Also critical and epistemic (second/third order) Reflexive, iterative Meaning is constructed and negotiated Needs to be meaningful first Strong sense of emergence in the learning environment/system

Figure 2.3 Contrasting Paradigms - Learning and Pedagogy

(Sterling 2001:59)

[6] First order learning is learning that accepts given values, second order learning promotes critical thinking about values and third order learning constitutes transformative learning (Sterling 2001).

Figure 2.3 delineates some obvious methodological divergences from traditional pedagogic practice, which, although difficult to attain, produces intuitive benefits. Experiential learning is recognised as contributing to the formation of feelings and emotions for the environment which have the potential to influence individuals throughout their lives (Sivek 2002; Van Matre 1972).

Significant Life Experience (SLE) research[7] has been important in understanding this phenomenon. Gunderson (1989), James (1993), Palmer (1992) and Palmer *et al.* (1998a; 1998b), Peters Grant (1986), Peterson (1982), Tanner (1980) and Votaw (1983), all found childhood outdoor experiences to be significant in adult environmentalism. Indeed, Palmer (1992:29) concluded that 'childhood experience of the outdoors is the single most important factor in developing personal concern for the environment.' Similar evidence has emerged from education research. Thomashow (1995) suggests a relationship between childhood experience of nature and development of ecological identity (also Chawla 1999; Hutchison 1998), while Hawthorne and Alabaster (1999:40) have suggested that 'learning through participation in environmental activities is the most important factor in the prediction of environmentally responsible behaviour.'

Education IN the environment, then, is seen as a significant driver for environmental concern and behaviour. The methodological alternatives it suggests promote inclusive forms of communicating knowledge based on communication, dialogue and experience (Scott and Gough 2003).

Education FOR the Environment

> To be educated **FOR** the environment...is education which is environmental in style with emphasis on developing an informed concern for the environment.

[7] SLE research uses people's past experiences to explore reasons for present day actions.

> The objectives go beyond the acquisition of skills and knowledge and require the development of involvement to the extent that values are formed which affect behaviour...Thus the aim is to develop attitudes and levels of understanding which lead to a personal environmental ethic; that is, to educate pupils so that their actions can influences on collective action will be positively for the benefit of the earthly environment (Schools Council 1974 cited in Palmer and Neil 1994:19)

Fien (1993:16) writes that education ABOUT and IN the environment 'are only valuable in so far as they are used to provide skills and knowledge to support the transformative intentions of education *for* the environment' (emphasis added). This is supported by Wilson (1993), who claims that the major objective of ESD is to create respect for the environment. Implementing education FOR the environment involves challenging existing value structures and the assumptions on which they are built. Barr (2000:51) describes environmental values as 'underlying environmental orientation, based upon a personal worldview', which take varied forms and are held alongside other personal and social values which struggle to be reconciled (also Eden 1993; 1996).

Common frameworks for exemplifying these competing values are those of the Dominant Social Paradigm (DSP) and New Environmental Paradigm (NEP) (Dunlap 1980; Dunlap and van Liere 1978b; Klineberg *et al.* 1998). The DSP constitutes the technocratic, progressive, modernist and laissez fare economic discourse which historically prevails in most developed countries (Dunlap and van Liere 1978b). It constitutes a set of social norms that are persuasive in both defying and defining rationality (Blowers 1993; O'Riordan 1977) and restrict how people are able to visualise and negotiate sustainability. 'Our current insights into the environmental crisis are largely rooted in our understanding of the cultural antecedents to this crisis – specific cultural assumptions such as the notion of change in nature as always moving forwards to cumulative improvement and the glorification of the individual over the social group and the anthropocentric view of the universe' (Blowers 1993:95). It is easy

to see how 'the fate of the natural environment is tied directly to the DSP in Western industrial societies' (Klineberg *et al.* 1998:215).

Conversely, the diffusion of sustainability ideas through social institutions and processes popularises the idea of a NEP, characterised by the belief that 'an ecologically benign environment can be achieved only if humans show respect for the intrinsic value of all living creatures' (Ollie *et al.* 2001:187). The NEP can be used descriptively and in a normative sense where NEP views are considered necessary for the benefit of society. Although these concepts represent broad and crude portrayals of polarised worldviews which research demonstrates are unlikely to be held in isolation by individuals (Catton and Dunlap 1978; Dunlap 1980; Gooch 1995), they are useful descriptors of the change in values ESD is charged with executing.

Of course other frameworks exist for describing and evaluating social-environmental values. The post-materialist thesis proposed by Inglehart (1977; 1990:5), claims that 'the values of Western publics have been shifting from an overwhelming emphasis on material wellbeing and physical security, towards greater emphasis on quality of life', with environmental concerns being embedded within the quality of life concept. Post-materialism is particularly useful for this study as it addresses reasons for variance in its influence across different populations. Inglehart (1977;1990) suggests that post-materialistic values have emerged under specific criteria; economic prosperity, the rise of democracy, the post World War II peace experienced by many democratic sovereign states, and the concomitant rise of the educated classes. He argues that these factors combined have provided people with a subjective sense of security which has induced a cultural shift from a materialist to post-materialist society. There is considerable support for Inglehart's thesis; Skerenty (1993) finds that the social basis of environmental

concern is fairly constant across industrialised countries[8] with concern negatively associated with age, positively associated with education and socialist political orientations, and unrelated to income or gender (also Bürklin 1985; Diani and Lodi 1988; Gray 1985; Lafferty and Knutsen 1985; van Liere and Dunlap 1980). However, post-materialism also has its critics. For example, the environment is considered by some to be a 'valence' issue, (which people are reluctant to oppose openly), which could explain the emergence of environmental preferences amongst citizens of different sovereign states (Scruggs 2003), and the trend for pro-environmental attitudes to weaken when ranked against other social concerns (Eurobarometer 1999; 2002; 2005). There is also significant evidence to suggest that proximate income effects are stronger than post-materialist values in affecting the mobilisation process (Scruggs 2003)[9].

However, despite increasing sympathies for NEP and/ or post-materialistic values there is evidence to suggest that as children grow, they become more sympathetic to the tenets of modernism, progression and neo-liberalism. Bognor and Wiseman (2002:4) found in a study of children and teenagers that 'the younger ones tend to have a more environmental worldview, perhaps explained by the shorter exposure of young people to the competing traditional belief system favouring environmental degradation as well as by the scepticism regarding societies value system'. It seems that, as children grow, a

---

[8] The countries included were West Germany, Austria, USA, Britain, and Australia.

[9] Of course, further interpretations of why values supporting environmentalism and sustainability have become more popular exist. Noteworthy examples include the Environmental Kuznet Curve (EKC) hypothesis, which has been explained by behavioural changes and preferences; institutional changes (specifically democracy); technological and organisational changes, and structural changes (De Bruyn and Heintz 1999; Seldon and Song 1994; Stern *et al.* 1996). Nyberg and Stø (2001) propose three theories; the ecological-technological hypothesis; the social- cultural hypothesis, and the political cultural hypothesis (arguably, elements of all these are communicated within post-materialism). Also relevant is ecological modernisation which posits the possibility of environmental improvement and enhancement through technological development (Lee 2003; Massa and Skou Anderson 2000), although this also relies on public and private demand for environmental quality. What is noteworthy about the majority of these theories (including post-materialism) is the acceptance of the need for environmentally harmful processes of economisation and industrialisation before environmental protection can be considered (Munton 1997).

constructed rational defence of these values develops alongside as young people's identities and their futures are envisaged within its contours.

Similarly, there is little doubt that, amongst older adults, elements of the DSP affect individual's negotiation of sustainability issues. Klineberg *et al.* (1998:215) found that, amongst international university students, belief in aspects of the DSP reduced concern about environmental problems and directly affected perceived need for change (also Gigliotti 1992; 1994). Grob (1991) found that individuals who retained a strong belief in development and technology saw less need to participate in pro-environmental behaviours. It is likely that values associated with the DSP precede and inform environmental attitudes and this possibly explains the gap between attitude and behaviour,

> ...because the particular rationality of the DSP in Western industrial societies suggests that such measures are unnecessary...Individuals are being told through numerous channels that there are environmental problems and they should be sensitive to them. At the same time, through the more subtle message of the DSP they are told that existing political, economic and technological institutions will solve the problem for them (Klineberg *et al.* 1998:224).

The difficulties that ESD has in enabling the transition in values from those aligned with the DSP to the NEP are complex to negotiate (Blowers 1993; Gruenewald 2004; Hutchison 1998; Robottom and Hart 1993; Sterling 2001; Uzzell 1999) Sterling (2001:32) proposes three explanations as to why these difficulties remain despite three decades of EE and ESD;

- Education for change is often outweighed by the larger scale educational system which enacts vocational or socialising roles and purposes, and can 'cancel out' radical environmental endeavours;
- The still larger social system affects and shapes the educational system more than the other way round although they are in a dialectical relationship;
- In an age of mass communication, the socio-cultural milieu arguably affects people and influences more than formal education programmes.

It is therefore important to bear in mind the pervasiveness of the DSP in economic, social and cultural practices, and to consider its effects not only on the educational but also on psychological and situational influences discussed throughout this chapter.

2.1.3 Summary

This section has shown that despite efforts to raise awareness of environmental issues and ways to ameliorate them, EE and ESD have failed to mobilise the large scale adoption of pro-environmental behaviour. There are two common conjectures as to why this is the case[10]. The first is a critique of the ability of education to stimulate large scale behavioural change within a generally technocratic educational system that some ESD educators view as a prime cause of current educational problems (Grunewald 2004; Hutchison 1998; Sterling 2001). This view holds that education must be transformative and critical in its approach to the environment and directly challenge the status quo. The related observation is that ESD is only one of many influences on behaviour and, therefore, can never provide a complete solution. This view contends that ESD should be considered amongst a constellation of influences that affect the individual (Darnton 2004a; 2004b; Morris and Schagen 1996; Stern 1997; 2000). 'The complexity of interactions which determine behaviour illustrates that environmental citizens are not produced merely by programmes of education but by a whole range of factors, with which education may interact' (Hawthorne and Alabaster 1999:40).

2.2 Psychological Influences

The discussion now turns to other explanations for influences on environmental attitudes and behaviour. Non-educational influences on pro-environmental behaviours are many and complex, and it is difficult to see where the boundaries between variables

[10] This is not a case of either /or. It is feasible that both these ideas have merit in explaining the lack of pro-environmental behaviour amongst people who have experienced ESD.

and influences exist. There is a broad nomenclature of terms used to describe different variables and constructs. Kolmuss and Agyeman (2002) discuss fourteen of these; attitude and behavioural models; altruism; empathy and pro-social models; demographic factors; institutional factors; economic factors; internal factors; environmental knowledge; values; attitudes; environmental awareness; emotional involvement; emotional non-investment; locus of control and responsibility; and priorities. Even this list is not exhaustive (Hawthorne and Alabaster 1999; Hines *et al.* 1986-7; Hungerford and Volk 1990; Stern 2000; Stern *et al.*1993) and often these constructs are re-defined in different studies rendering comparative work difficult (Blake 1999; Eden 1993). Indeed, Blake (1999:275) notes that 'constructing fixed categories on the basis of distinctions between these terms is likely to be a confusing and often fruitless exercise'. With this in mind, the following discussion of non-educational influences is not meant to be exclusive but considers significant contributions relevant to this study. It is important to remember that the variables and influences discussed are separated somewhat artificially but this is required to afford a clear explanation of this broad literature. The discussion begins by examining some of the more popular ideas associated with psychological characteristics (section 2.2). This is followed by an exploration of situational influences (2.3) and then more inclusive psycho-situational approaches (2.4).

The psychological variables discussed in this section represent the most popular aspects of an impressive literature base. The discussion begins with an exploration of attitude-behaviour research which has been very influential; this is followed by discussions of altruism, demographic factors, locus of control, values and emotions.

2.2.1 Attitude

Attitude is defined as 'a relatively stable and enduring predisposition to behave or react in a characteristic way' (Lexico 2007: no page). An early persuasive body of literature emerged from psychology and focused on attitudes as the key determinant of behaviour. It was supposed that a positive attitude to ameliorating environmental problems would result in a linear and 'rational[11]' response (Figure 2.4) which would be manifested in appropriate behavioural change. The criteria that constitute a positive attitude were defined and measured (Dunlap and van Liere 1978b; van Liere and Dunlap 1981; Maloney and Ward 1973; 1975) and these values became key objectives for EE (IEEP 1975; IUCN 1980; UNESCO 1977).

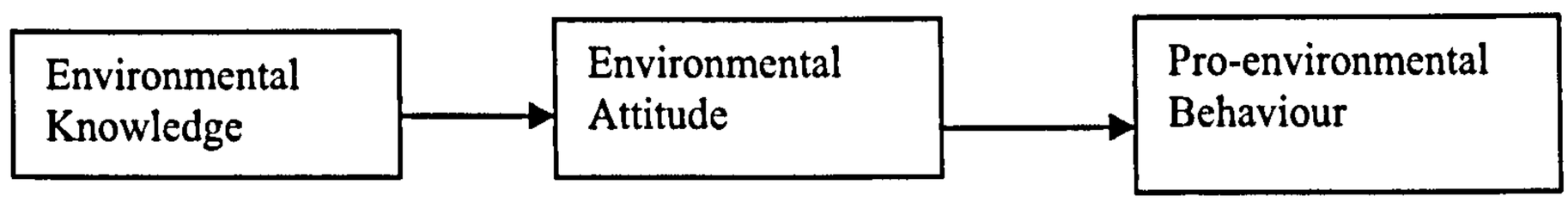

Figure 2.4 Early Linear Model of Attitude- Behaviour

(Kolmuss and Agyeman 2002:241)

The initial importance attributed to attitude in operationalising pro-environmental behaviour resulted in a body of research focused around attitude/behaviour modelling. Social psychologists[12] postulated that attitude alone was insufficient to stimulate behaviour, and suggested that the role of other individuals and accepted social norms were also causal (Azjen and Fishbein 1980; Hines *et al.* 1986-7). The most significant attitude-behavioural model of this genre has been the Theory of Reasoned Action (Azjen and Fishbein 1980) (Figure 2.5).

[11] Rational as in self interest *and* the interest of others.

[12] Rather than focusing on the individual self, social psychologists study the relationship between the mind and social behaviour, the focus is on the individual within the group and the forces that change human beliefs, attitudes and behaviours.

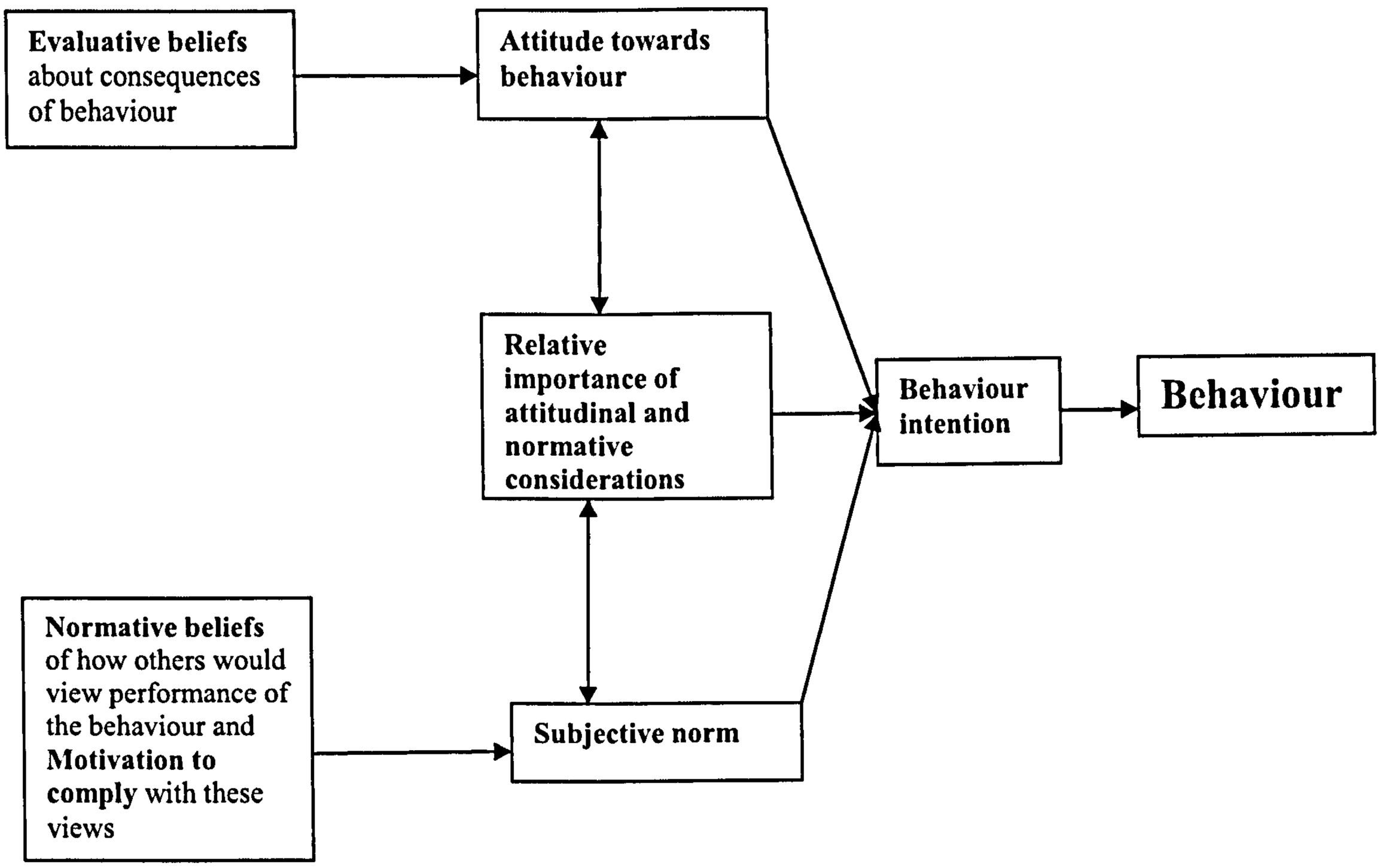

Figure 2.5 Theory of Reasoned Action

Azjen and Fishbein (1980) cited in Kolmuss and Agyeman (2002:243)

In this model, 'action' is preceded by 'behavioural intention', which in this context is unencumbered by any other variable, so intention to act should result in action. Preceding behavioural intention are attitude and the subjective norm, of which attitude is usually visualised as the dominant predictor (Barr 2000).Where attitude and beliefs meet, their influence on behavioural intention is determined by the individual's evaluation of the 'relative importance of attitudinal and normative considerations which alludes to their overall disposition towards the behaviour and their evaluation of social pressures from 'significant others' (Barr 2000:45). Behaviour is therefore determined by personal characteristics in the context of interpersonal relations.

The model proposed increased information as the best strategy to promote environmental attitudes; Burgess *et al.* (1998:1447) describe this strategy as the

'information deficit' solution, where increased information can change attitudes and, by so doing, inform social change, producing social norms favourable to environmental sustainability. This is because the model depicts a mutually dependant relationship between attitude and beliefs (the information a person has about the issue in question), and, therefore, increased information emerges as the key factor motivating positive attitudes.

The model was initially extremely popular due to its simplicity and general applicability. However, its simplicity also formed the basis of its critique. The model is built upon the assumption that individuals are single minded, rational beings and raises questions about rationality. It has been increasingly recognised through the critique of positivist epistemology that no definitive rationality exists and that it is a relational term embedded in social-economic-cultural context. The model was therefore heavily critiqued for its a-political/social/cultural/economic context (O'Donoghue and Lotz-Sistika 2000), for its exaggerated emphasis on the individual as the agent of change (Clover 2002), and the omission of opportunity as a key attractor for pro-environmental behaviours. Further, there is no allowance for structural influences or barriers within the model although cultural and temporal implications are alluded to within the concept of 'relative importance of attitudinal and *normative considerations'* (Figure 2.5). The model assumes that the ability to act out behaviour intentions is wholly dependent on the preceding concepts and processes and does not allow for the array of objective constraints that constrain pro-environmental behaviours. Tanner (1999:146) describes this as 'neglect of a behaviour's embeddedness in cultural structures'. Any normative assumptions are necessarily representative not only of people's motivations and actions but also their relationships with surrounding structures, provisions and technologies (Black 1985). An excellent example of this is recycling in the UK, which has become

much more of a norm in a short space of time following technological advances in recycling and the widespread provision of facilities to enable the public to participate (Barr 2000; 2003).

The Theory of Reasoned Action was the genesis for a whole industry of research about attitude and behaviour modelling which eventually expanded to include a wider range of variables. Hines *et al.* (1986-7) produced a model (Figure 2.6) which included the influence of other psychological variables and also information, skills and situational factors, yet theorised the latter as external to the process informing behaviour. This position is problematic insofar as the concepts which pertain to knowledge within the model are likely to be dependent on situational factors, as are action skills. It also seems unlikely that personal beliefs and attitudes are formed in isolation from situational factors. Kolmuss and Agyeman (2002:242) state that 'intentions are not only influenced by attitudes but also by social (normative) pressures'. These 'prescriptions' or 'pressures' exist in formulae depending on the social and institutional particularities of time and location (Foppa 1989; Frey 1989).

Building upon the Hines *et al.* (1986-7) model but expanding the relevance of situational factors is Ipsative theory (Foppa 1989; Frey 1989; Tanner 1999) (Figure 2.7). Ipsative theory of behaviour explains behavioural *non*-action by reference to three pre-suppositions. The first is of objective constraints, which can be both natural and social; these constraints are independent of the individual and require negotiation. The second is termed the Ipsative possibility set, whereby individual action is constrained by the fact particular alternatives did not occur to the individual in the current situation rather than by any objective constraint, Tanner (1999) proposes that the Ipsative possibility set takes shape through learning and socialisation processes. Factors which

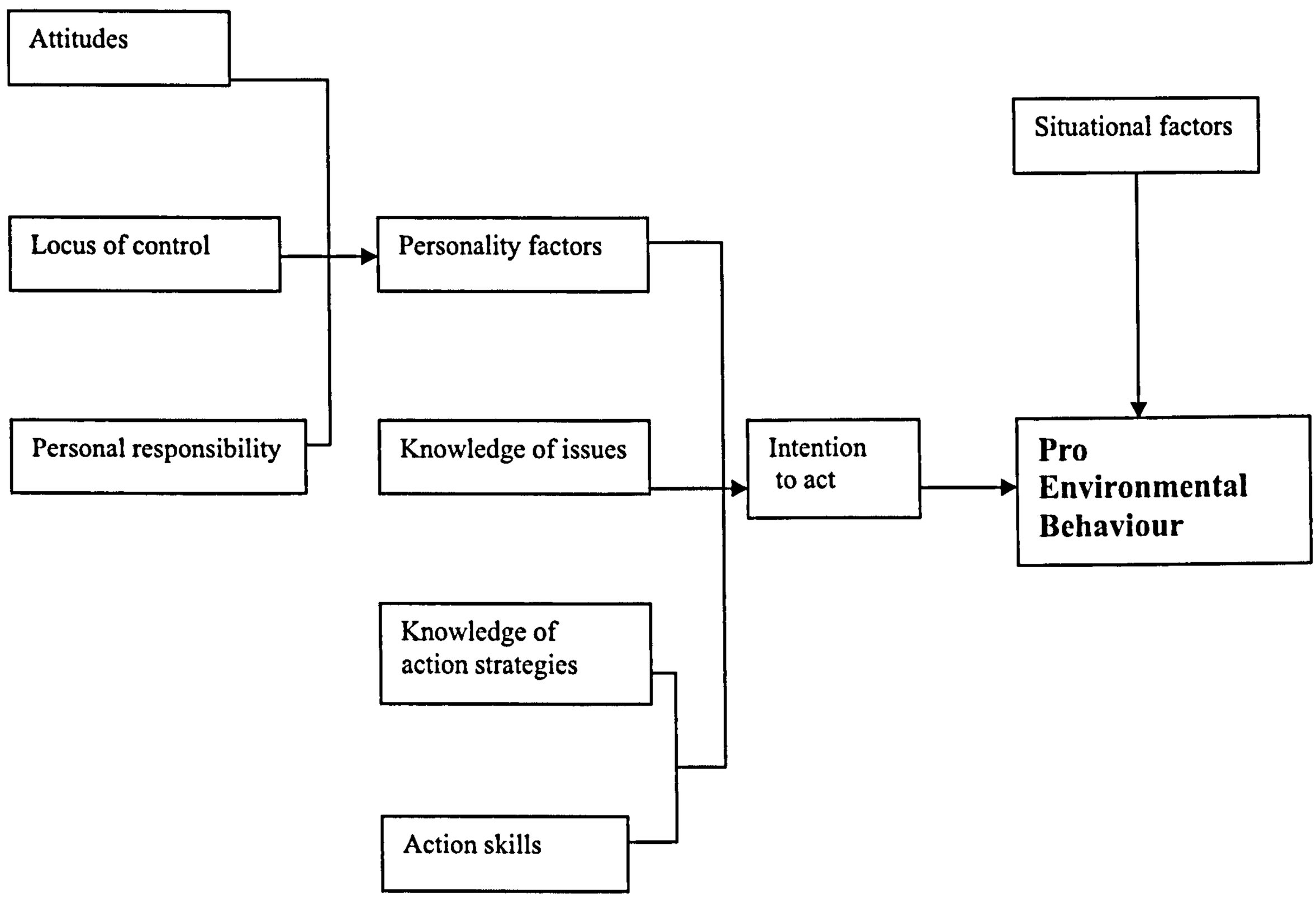

Figure 2.6 Models of Predictors of Environmental Behaviour

Hines *et al.* (1986-7) in Kolmuss and Agyeman (2002:244)

constrain the activation of alternatives are also coded as Ipsative[13]. The final pre-supposition concerns subjective constraints. If multiple alternatives present themselves within the objective and Ipsative possibility set, then the subjective self will ultimately determine choice of behaviour. This theory supports the Hines model in exemplifying how behaviour is determined by personality variables, knowledge *and* opportunity. However, Ipsative theory provides for greater reflexivity between objective, subjective and Ipsative constraints, recognising the reciprocal relationship between individual and

[13] ESD is crucial to the maximisation of the Ipsative possibility set, since individuals are more likely to act where more possibilities for action are known.

society. This helps to illustrate why education alone has failed to provide a solution to increasing environmental issues.

Types of constraint emphasised in Ipsative theory of behaviour			
Type	Ipsative constraints	Subjective constraints	Objective constraints
Function	Preventing *activation* of particular behavioural alternative	Preventing *preference* for particular behavioural alternative	Preventing *performance* of particular behavioural alternative

Figure 2.7 Constraints on Environmental Behaviour

(Tanner 1999:147)

These developments in attitude/behavioural research exemplified that the relationship between attitude and behaviour was not linear, as originally postulated, but was a highly reflexive and habitual process between the individual, objective constraints and social norms (Barr 2003; Burgess *et al.* 2003; Hobson 1999; Tanner 1999). Kolmuss and Agyeman (2002:242) argue that attitudes do not determine behaviour directly instead 'they influence behavioural intention which in turn shapes our actions'.[14]

Despite the popularity of this genre of research (Jones 1991; Taylor and Todd 1997), instrumental theorising has increasingly been questioned as a method with which to explore pro-environmental behaviours (O'Donahue and Lotz-Sistika 2002; Fien 1993; Greenall *et al.*1993; Huckle 1991; Midgley 1978; O'Donahue 1993; 1997). The heart of this critique, as noted earlier, is that: 'the awareness raising/individual behavioural

[14] There is evidence to suggest that attitudes indirectly influence pro-environmental behaviour (Gigliotti 1992; 1994; Grob 1994) but they cannot be considered a sole or even main influence.

change agenda is disempowering and insufficient as it ignores powerful structures and politics at the heart of environmental destruction' (Clover 2002: 318).

2.2.2 Altruism

Further to attitude-behavioural modelling, altruism has been theorised as important in forming the intent to act pro-environmentally. Altruism is conceptualised as a contributor to pro-social behaviour which is defined as voluntary behaviour that benefits another individual (Einsberg and Miller 1987), of which pro-environmental behaviour is an example.

Schwartz (1977) proposed a moral norm activation model of altruism which he claimed could be used to predict pro- environmental behaviour[15]. In the model behaviour is motivated by altruism when an individual becomes aware of the negative consequences of behaviour for others and feels personal responsibility for others' wellbeing. Geller (1995:184) suggested that to be able to participate in pro-environmental behaviour an individual must 'actively care enough to emit ...directed (or altruistic) behaviours for environmental protection' and to 'be concerned about others in a larger community before they will act on behalf of the environment' (Allen and Ferrand 1999:339). This however, remains contingent on personal needs being met (Maslow 1954; 1971).

Stern and Dietz (1994) used three components to exemplify how altruism functions in the context of environmental concern;

[15]It should be noted that the Schwartz model was not originally devised solely to explain environmental behaviour. Rather, it was conceptualised as a broad sociological-psychological framework (Barr 2000). However, many authors have tested the Schwartz model and concluded it can be successful in predicting pro-environmental behaviour (Dunlap and van Liere 1978b; Guagnano 1995; Hopper and Nielson 1991; Thogersen 1996).

Motivation = V^1 (egoistic orientation) + V^2 (social orientation) + V^3 (biospheric orientation)[16]

He suggests that an individual simultaneously holds these three positions which usually manifest themselves in the order indicated. Pro-environmental behaviour may be the product of all three but only as long as the behaviour primarily suits the egoistic orientation. Thus if undertaking the behaviour is unable to meet the primary egoistic need, it will be substituted for another[17]. This approach is problematic as it precludes the notion of selfless acts, which is addressed through an innovative approach by De Young (1986; 1988-1989; 1990; 2000). De Young developed the concept of 'intrinsic satisfaction' that people gain from pro-environmental action which he promotes as another alternative to egocentric and sociocentric accounts. He suggests that altruism and intrinsic satisfaction can be related if altruism involves personal pleasure derived from helping others and argues that intrinsic motivation plays a pivotal role in shaping and maintaining personal behaviours.

2.2.3 Demographic Factors

van Liere and Dunlap (1980) regarded demographics to be limited in their ability to explain environmental concern, with even predictors of age, level of education, political ideology and place of residence being only 'modestly correlated' to each other (Gooch 1995:553 see also Milbrath 1984; Steger and Witt 1989). However, some studies have found demographic factors to be significant and a range of these factors are now reviewed.

[16] Stern (2000:412) expands on these components to develop a value-belief-norm (VBN) theory. 'The theory links value theory, norm activation theory, and the NEP perspective through a causal chain of five variables leading to behaviour'.
[17] Other empirical work identifies altruism as sociocentric based (Schultz 2000) and ecocentric based (Eckersley 1992).

Income and Social Class

Buttel and Finn (1978), van Liere and Dunlap (1980), Cowe and Williams (2001) and Stern (2000) all found social class to correlate positively with environmental concern, while Hawthorne and Alabaster (1999) found class to be influential in increasing personal agency. Conversely, Worsley and Skyzpiec (1998) found social class to be significant, with those living in lower Socio-Economic Status (SES) areas in Australia expressing more support for environmental exploitation. Income too has been identified as having a weak correlation with environmental concern (Arcury 1990; Hawthorn and Alabaster 1999; Hines *et al.* 1986-7). Despite these tentative correlations, there is evidence to suggest that higher social class and income may result in less commitment to pro-environmental behaviour as increased purchasing power and mobility lead to intensified energy use and consumption (DEFRA/ONS 2002; Surrey University 2003). Conversely, a lot of macro studies posit that, as societies become wealthier, they have greater income and spare time to divert towards environmental concerns. This relationship is classically expressed in the EKC (Boyce 2002).

Education

Educational attainment has also been found to be a significant determinant of pro-environmental behaviour. Hawthorne and Alabaster (1999) found that educational attainment correlated positively with an internal agency and a sense of social responsibility (also ENCAMS 2002: HO/RDS 2001). Hines *et al.* (1986-7), Arcury (1990) and Witherspoon and Martin (1992) also all found pro-environmental attitudes to be positively correlated with educational attainment.

Gender

Hawthorne and Alabaster (1999) found that women had a stronger sense of responsibility and were more emotional about environmental problems than males (also Grob 1991; Lehmann 1999; van Liere and Dunlap 1980). They also demonstrated that, in their study, women tended to exhibit more personality characteristics associated with environmental concern than men. Klineberg *et al.* (1998) found women to be more responsive to government intervention on environmental issues and more likely to reject conventional 'human-over-nature' worldviews. In a youth context, Morris and Schagen (1996) and Connell *et al.* (1998) found girls to rate higher than boys in overall environmental awareness and action, while Worsley and Skrzpiec (1998) found female secondary school students in Australia to be more pessimistic about the environment, more environmentally concerned, and have less faith in technological solutions to environmental problems (also Hutchinson 1996). However, in general, identifying the influence of gender has proved elusive: 'gender is not a consistent correlate of more general measures of environmental concern' (Stern 1992a:281, also Kanagy *et al.*1994).

Age

While age has been identified as contributing to environmental concern, disagreement exists on the extent and even direction of this influence (Dwyer, 1995; Jones and Dunlap, 1992; Klineberg *et al.* 1998; Palmer, 1998). Some studies have found younger people to be more environmentally concerned (Arcury 1990; Buttel 1987; Skerenty 1993) while Kanagy *et al.* (1994) found younger people more supportive of public expenditure on environmental problems. Yet others report young people to be strongly motivated by consumption and leisure (Blowers and Glasbergen1995; Macnaughten *et al.*1995) and not to be interested in the environment (Holdsworth 2003). It has also been reported that teenagers are likely to experience a weak sense of agency and to believe

their behavioural actions will make a difference (McCann-Erickson 2001). These contrasting findings have led Ollie *et al.* (2001:184) to conclude that 'it has not been possible to establish a consistent, significant correlation between age and environmental behaviour'.

If, as Ollie *et al.* conclude, age has no (or limited) significance, this raises questions as to the relevance of studies that focus on a set age group. Morris and Schagen (1996:7) suggest that 'young people's reactions [to the environment], arguably, are little different from those of the population at large'. Yet young people experience social life and institutions very differently from adults, they are constrained in many aspects of life, including political and economic participation and ownership, and many of their decisions are mediated by adults (Payne 2002a). The impact of these processes for the negotiation of ESBs is an important and scantly addressed issue (Chawla 1998a).

Other demographic factors have also been found to be significant to varying degrees. Political affiliation has been discussed by many authors with a general consensus that those who adhere to liberal or moderate ideologies are more supportive of public spending on environmental protection (Jones and Dunlap 1992; Kanagy *et al.* 1994; van Liere and Dunlap 1980; 1981). Ethnicity too has been considered but owing to a dearth of research in this particular area no conclusions can yet be made (HO/RDS 2001).

2.2.4 Locus of Control

Locus of control (LOC) has been defined as follows:

> This (LOC) represents an individual's perception of whether he or she has the ability to bring about change through his or her own behaviour. People with a strong internal locus of control believe that their actions can bring about change. People with an external locus of control, on the other hand, feel that their actions are insignificant, and feel that change can only be bought about by significant others (Kolmuss and Agyeman 2002:243).

As with many of the variables used to operationalise behaviour this terminology is not exclusive. LOC is also known as agency, the capacity for an agent to bring about change (Newhouse 1991) and has close parallels with efficacy, the degree of benefit an individual believes their behaviour will have. Although LOC is a general construct, it has been found to be a predictor of pro-environmental 'behavioural intention' (Ajzen and Madden 1986; Chan 1998; Hines *et al.* 1986-7; Azjen and Fishbein 1980; Kantola *et al.* 1982).

Although significant, LOC alone does not influence behaviour. Sivek and Hungerford (1989-90) and Marcinovski (1987) all found LOC *and knowledge of action strategies* to be the most reliable predictors of environmental behaviour; thus at least partially dependent on external referents. Macnaughten and Scott (1994), for example, found that university students had low levels of perceived agency in relation to social, political and environmental problems. In focus group research, students identified environmental problems as significant but felt disempowered by, and distrustful of, government and business. This was coupled with powerlessness in the face of the seeming expansion and interrelatedness of global environmental problems and the economic structures which appear to be responsible for both causing and solving them (Grove-White 1995).

Discounting environmental problems can also affect sense of LOC or agency. Uzzell (1999:7) notes that people tend to discount by space: 'environmental problems are seen as more serious the farther away they are from the perceiver, such that environmental problems affecting the national level are seen as more serious as those affecting the local' (also Macnaughten 2003). People also discount through time, Morris and Schagen (1996:6) observe the tendency for secondary school students to believe the

consequences of environmental problems will not happen in their lifetimes. Discounting through any medium decreases perceived self efficacy and is ultimately detrimental to agency to ameliorate environmental issues. This issue has also been discussed extensively in economic approaches to environmental problems (Pearce *et al.* 1989). This sense of LOC/ agency has more parallels with Giddens (1984) thesis of agency within structuation, which emphases the duality of agency and structure, and the presence of structure in constraining and enabling agency and suggests that LOC is both internally and externally stimulated.

2.2.5 Values

Barr (2000:51) describes values as 'an underlying environmental orientation, based upon a personal worldview' and takes different forms. Jeronen (2002:342) categorises environmental values as:

ETHICAL	Autonomy, freedom and respect for life
BIOLOGICAL	Health and quality of life
AESTHEITIC	Beauty, constructions of nature
THEORETICAL	Cognition and truth
ECOLOGICAL	Empathy towards other species and future generations, limits to growth

Values are also produced by different influences, Fuhrer *et al.* (1995) proposes a tiered hierarchy of influences – the 'microsystem' (local agents, family and peers), 'exosystem' (media and political organisations) and the 'macrosystem', the enveloping cultural context. Importantly, these systems are mutually dependent and influential. The processes which takes place between micro, exo and macro systems have been theorised in relation to influential concepts such as post-materialism (Figure 2.8). Post-materialist values evolve from changes within the economic, cultural and social fabric.

Mobilisation can begin amongst non-powerful individuals through innovative social movements whose ideas then gradually permeate mainstream ideology. In terms of

environmentalism, some authors argue that an ideological revolution has taken place, which favours pro-environmental values (Milbrath 1986).

Values are an important base for the mediation of other influences; Ernst *et al.* (1992) found value orientation to be significant in translating knowledge into behaviour and Jeronen (2002:342) states that 'values are essential when developing environmental awareness and responsibility'. Environmental values of course exist alongside other personal, social and economic values, many of which are core to the way people live and make sense of their lives. Therefore, values are constantly negotiated by the individual and difficult to contain or neatly classify.

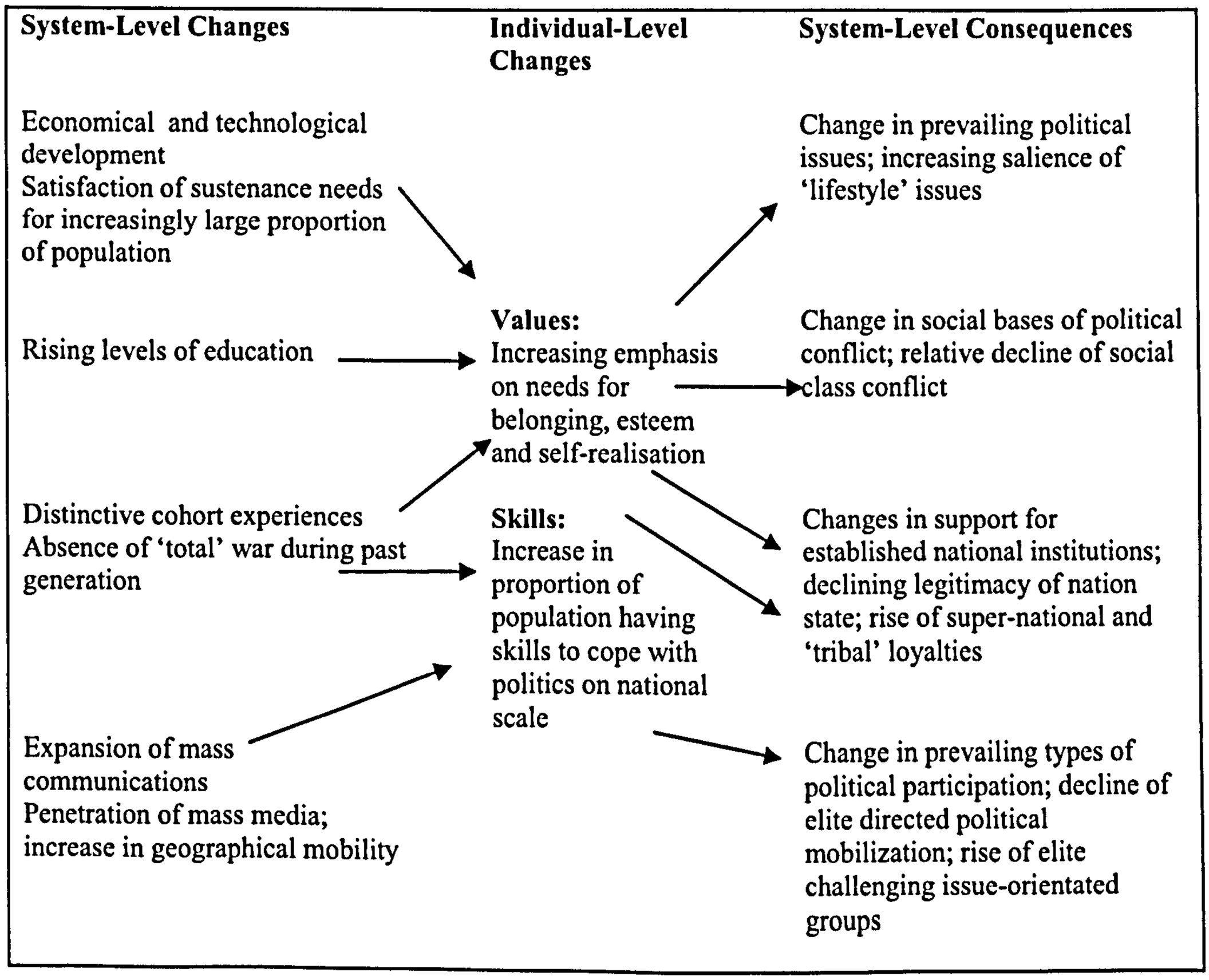

Figure 2.8 Process of Change – Materialist to Post-Materialist Values

(Inglehart 1977:5)

2.2.6 Emotions

Emotional investment in environmental issues has emerged as another important factor in understanding how environmental behaviour is operationalised. Grob (1991) suggests that the greater the emotional investment in the environment, the more inclined the individual will be to undertake pro-environmental behaviours. This supports earlier findings by Borden and Schettino (1979) that behaviour is based on feelings over knowledge. Pooley and O'Conner (2000) found 'affect'[18] contributed to a positive environmental attitude and concluded that ESD should consider motivating people's emotions and beliefs as well as providing information about environmental issues.

Newhouse (1991) and Chawla (1999) postulated that direct experience of environmental problems increases emotive reactions and Pooley and O'Conner (2000) expand on this by demonstrating that attitudes formed as a result of direct experiences tended to be 'affect' based whilst indirect experiences were cognitively based. Peterson (1982) working with SLE methodology found that 32% of respondents reported 'love for the area in which they were raised' as instrumental in affecting their attitude towards the environment[19]. Similarly individuals are most likely to become emotional about issues that they perceive to be of personal relevance (Hawthorne and Alabaster 1999), further strengthening the evidence of the importance of bodily experience for emotionality.

There are also processes by which people distance themselves from emotionality; Kolmuss and Agyeman (2002) argue that denial, rational distancing, apathy and delegation are a selection of ways in which people manage to avoid emotive feelings for the environment (also Giddens 1991; Mindell 1988). Emotions are therefore affective in

[18] 'Affect' is a variable often used in psychological research to describe what people feel towards an object or event (Maloney and Ward 1973).
[19] The SLE research offers a wealth of data pointing to emotional experiences as children contributing to adult environmentalism, see Chawla (1998a; 1998b) for detailed discussions.

the operationalisation of environmental behaviour, yet their inclusion in this research area is often overlooked, despite evidence that their influence on behaviour deserves continued attention 'feelings have not been paid enough attention...however, action is based on them' (Jeronen 2002:344).

2.2.7 Summary

This section has discussed and evaluated some of the significant contributions that psychological approaches have made to the environmental behavioural research genre. Whilst there is an undeniable ring of truth about many of the observations made by this collection of research, the overriding conclusions seems to be that individuals negotiate environmental sustainability with different capabilities and attitudes and that there is no clear correlation between particular variable types and behaviour. This suggests that pro-environmental behaviours are multiply determined (Schultz 2000; Stern and Dietz 1994; Stern *et al.* 1995; Thompson and Barton 1994) and has led to the analysis of the individual within social context. The next section (2.3) discusses research that has explored the influence of situational context upon environmental attitudes and behaviour.

2.3 Situational Influence

There is significant overlap between psychological and situational approaches to the study of pro-environmental behaviours. However, although psychological approaches are certainly aware of situational influences they are not often studied in major detail by psychologists.

Situational influences are numerous and ontologically diverse, comprising all external influences upon the individual. Tanner (1999:147) refers to these influences on action as

'objective constraints' which are 'assumed to influence the *performing of an act*' (original italics), and suggests numerous variables that need to be considered, 'structural factors such as limitations of time, income and price, legal and political institutions, the current state of scientific knowledge, available technology, state of infrastructure, available food and clothing, available social interaction and information network and shared set of social rules and norms.'

The significance of contextual influences on environmental development has been acknowledged through the limitations of educational and psychological explanations and the recognition that social dilemmas are inherent to environmental problems (Burgess *et al.* 1998). A substantial body of literature explores this area of study; Klineberg *et al.* (1998) found that measures of reported participation in particular pro-environmental behaviours reflect structural constraints and resource availabilities in addition to underlying environmental attitudes. This is supported by Kolmuss and Agyeman (2002:250), who argue that 'At least 80% of the motives for pro-environmental or non-environmental behaviour seem to be situational factors and other internal factors' (also Fliegenschnee and Schelakovsky 1998). Indeed, situational context has been found to be influential on both micro and macro scales. 'The degree of difficulty in carrying out different ecological behaviours varies as a result of their individual situational influences (Guagnago *et al.* 1995)....Apparently, a person's ecological behaviour cannot be generalised across different behavioural domains (Leonard-Barton 1981)' (Kaiser and Fuhrer 2003:607).

2.3.1 Logistics

Logistics include time, convenience, storage space, access and opportunity and are able to influence behaviour positively and negatively. It is well documented, especially in

the literature on recycling behaviour, that logistics are important facilitators of behaviour. Vining and Ebreo (1990), Gamba and Oskamp (1994) and Barr (2000; 2003) all found access and provision to be decisive in recycling. 'Actions are constrained by the physical and social structures of modern life' (Owen 2000:5). Put simply, there must be structures to facilitate behaviour, common examples being transport provision in rural areas (Burningham and Thrush 2001) and the lack of organic, green and free trade goods available for purchase (Ginn 2004; Holdsworth 2003). There is also evidence to suggest that people are bound into patterns of behaviour by unsustainable infrastructure (Burgess *et al.* 2003; OECD 2002; Shove 2000).

2.3.2 Media

The public view in the developed world is inextricably intertwined with media as an important facilitator and impediment of environmental information. The public gain their knowledge of social and environmental problems from the media and pressure groups as well as public information campaigns (Bedford 2003). There has however been much criticism of the media's handling of environmental issues.

> The public's understanding of global environmental change and sustainability issues has been badly served by the media. As the science of climate change and biodiversity has matured, media coverage of these issues has, perversely, reduced. The need to report dramatic news has proved to be an obstacle to discussion of the slow unravelling of the science and policy debates surrounding global environmental change (Smith 2000:3).

Despite such common criticisms, the media remain pivotal to environmental communication, 'The global media are of major importance to how people understand and make sense of environmental issues...this includes the complex interplay of narratives, storylines, images, icons and metaphors through which environmental issues and events gain meaning' (Macnaughten 2003:67 also Anderson 1997; Burgess 1990; Hansen 1993; Wilson 1992; Yearley 1992).

Media consumption has particular resonance when considering young people, as well as media as a form of information communication they use media for leisure and as a reference for leisure and lifestyle choices. 'Young people's identification with popular culture through the mass media is arguably the most significant influence on their cultural identity and lifestyles' (Fien and Skoien 2001:63), a theme further explored in section 2.4.

2.3.3 Responsibility

Responsibility as another key motivator of pro-environmental has been conceptualised by some as a personal characteristic. Weigel and Weigel (1978) used responsibility as an indicator of environmental concern, criticism of this approach however argues that if responsibility is entirely located within the individual it in a sense de-politicises environmental problems (Burr 1995). Instead, there is a growing consensus that sense of personal responsibility for the environment is also dependent on external social constructs.

In 'reality' responsibility is delegated across societal institutions and groups; supra- and internationally (UNCED 1992), by the nation state and local government (Local Agenda 21), through business and industry, and at the individual level (Eden 1993; 1996). It is a construct used to aid the normalisation of environmental sustainability through laws and regulations implemented by institutions, NGOs, education and publicity campaigns amongst others. Ideas about responsibility are therefore deliberately apportioned throughout society but they also manifest as a personal construct often embedded within beliefs about environmental citizenship (Hawthorne and Alabaster 1999). In evaluating individual perceptions of responsibility, there is evidence of tensions between perceptions of responsibility and other internal factors. 'Even if 'individual' factors

would support environmental action, people may still not act because they do not feel that they (as individuals) should take the responsibility or helping to solve environmental problems' (Blake 1999:266). People may have strong views as to the responsibility of other individuals or institutions and this will affect their own behavioural response. Morris and Schagen (1996) found in a study of 15-16 year old students that the media was the dominant variable in influencing attitudes towards the action that should be taken by others (also Blake 1999). Bedford (2003), Burgess *et al.* (1998), Eden (1993), Harrison and Davies (1998), Macnaughten and Urry (1998) and Wynne (1996) all found general distrust of government negatively affected sense of personal responsibility suggesting that it is epistemological trust (O'Neil 1997) rather than information that is missing from people's lives. Eden (1993:1752) notes the complex and uneven distribution of responsibility across society and suggests we need to examine 'the context and constraints restricting the fulfilment of pro-environmental responsibility as behaviour.'

A prominent strategy for operationalising individual environmental responsibility has been environmental citizenship. Environmental citizenship has evolved to become an integral part of active social citizenship and is now taught in schools as part of personal, social and health education (PSHE) and advocated by both governmental and NGOs. Definitions of environmental and social citizenship remain imprecise (Barr 2000); however, Furman and Erdur (1999) devised a scale where characteristics of environmental citizenship and social citizenship can be compared. The results demonstrated that, to be a 'good' social citizen, one needed to be a 'good' environmental citizen first (also Selman 1994). However, citizenship ideals exclude many individuals on the bases of race, ethnicity, gender, age and ability etc. Barr (2000: 95) cites two key variables relevant to citizenship ideals upon behaviour; first 'a right to

a clean and safe environment must be balanced with tangible responsibilities at the individual level for that environment' and, second, 'the conditions under which such responsible behaviour should occur are within networks of communities that have adequate representative processes whereby individuals feel they have an active role in decision making about the environment'. These conditions are not available to all individuals, which reduces the overall potential of citizenship to encourage responsibility.

A more accessible criterion for individual responsibility is provided by Nyberg and Stø (2001:21), 'the role of the individual is to exert his/her power of action at both a political level and on the market with his/her purchase decisions.' But again this excludes many individuals, in particular young people who are disqualified by age from political participation and commonly experience restricted spending power.

Social and, therefore, environmental responsibility (Furman and Erdur 1999) is the obligation of both business and social stakeholders to take proper legal, moral ethical and philanthropic actions that will benefit and protect society. Yet, from the brief discussion of responsibility provided here, the location of responsibility outside defined and official criteria renders it of limited value in influencing behaviour.

2.3.4 Habit

Payne (2002a: 311) claims that 'worthy of further....research are 'normally' and 'habitually' experienced sites such as the home, the neighbourhood, playground and so on. These sites shape individual, family and peer habits of involvement but are also shaped by the ethos, tradition and culture of the locale.' The habitual is often overlooked in favour of more dynamic explanations, but habits rest on deeper

assumptions about people's relationship with society and are pivotal in understanding everyday lived experience (Shove 1999). 'People have a profound collective knowledge, understanding and critical analyses of what is taking place around them that they have learnt through daily lived experience, pedagogical institutions, peers, the media and social movements' (Clover 2002:316).

Habit has been to be found influential in an array of pro-environmental behaviours (Bedford 2003; Gatersleben and Uzzell 2003; Halpern *et al.* 2004; Uzzel and Leach 2003). Kolmuss and Agyeman (2002) identify habit in the form of old behaviour patterns as a significant barrier to behavioural change generally and Holdsworth (2003) found habits relevant in suppressing sustainable consumption.

The difficulty of identifying and theorising habit is its existence below discursive consciousness. O'Donohue and Lotz Sistika (2002:265) describe how 'relatively blind social habit [needs] to be coded in language' to magnify its relevance within the sustainability debate. Hobson (2001:204) discusses the significance of the Global Action Plan (GAP) initiative, Action at Home, where habitual behaviours were closely observed to facilitate behavioural change. She draws parallels between habit and Giddens' (1984) notion of practical consciousness, describing it as 'neatly (encapsulating) the habits that Action at Home helped to change. What Action at Home does, is to bring these habits, hidden away by practical consciousness into discursive consciousness, where they are considered by the individual and either altered or contested'.

Habits, then, are part of implicit assumptions about the way individuals and groups live and are representative of wider societal and cultural systems of meaning (Giddens 1984).

> Habit can be viewed as irrational and inscribed in the body over time and through socialising processes (by the family, neighbours, peers) and encoded by various factors (socially, culturally) invariably as routinised behaviours, tacit understandings, patterns of action and interaction, communication, forms of experience and modes of social arrangement and association that, effectively allows the actor to 'get along' or 'survive' in the everyday without really knowing why or how (Payne 2002a:309).

O'Donoghue and Lotz-Sistika (2002) draw parallels between habit and 'habitus' (Bourdieu 1971; 1990; Elias 1994), arguing for the relations between the actor and social process to be recognised. 'No individual person, no matter how great his stature, how powerful his will, how penetrating his intelligence, can breach the autonomous laws of the human network from which his actions arise and into which they are directed' (Elias 1994:266). This strongly exemplifies the relevance of historical, economic, cultural and social context upon habit formation.

2.3.5 Summary

This section has discussed the influence of context on environmental attitudes and behaviour. It has demonstrated that people have different opportunities and abilities to promote environmental sustainability through participating in pro-environmental behaviours depending on their economic, social and geographical identity. This helps to explain the increasing interest in sub-groups and also in multi-variable models to assist deciphering how drivers and barriers vary and interact between different groups[20]. What is evident from sections 2.2 and 2.3 is that both psychological and situational explanations have validity as explanatory factors of environmental attitudes and

[20] Darnton's (2004a; 2004b) meta-analysis of public participation in pro-environmental behaviour research identifies six prominent groups, two of which include young people: upmarket groups, low income groups, black and minority ethnic groups, older people, younger people and teenagers.

behaviour without either providing definitive explanations. The next section therefore discusses literature that seeks to bridge the conceptual and methodological divide between these two approaches to provide psycho-situational explanations for environmental attitudes and behaviour

2.4 Psycho-Situational Approaches

Educational, psychological and situatioal approaches to understanding barriers and drivers of pro-environmental behaviours together begin to provide a more comprehensive set of analytical tools with which to consider influences upon behaviour. Stern (2000) recognises the dissonance in competing claims and argues for a coherency that recognises attitudinal, contextual, personal and habitual influences on pro-environmental behaviour whilst acknowledging the difficulty of determining which, if any variables are most instrumental in driving or inhibiting different behaviours.

> Studies that examine only attitudinal factors are likely to find effects only inconsistently, because the effects are contingent on capabilities and context. Similarly, studies that examine only contextual variables...may find effects fail to reveal their dependence on individuals' attitudes or beliefs. Single variable studies may demonstrate that a particular theoretical framework has explanatory power but may not contribute much to the comprehensive understanding of particular environmentally significant behaviours that is needed to change them (Stern 2000:418).

He suggests that different types of causal variables are important depending on the particular behaviour (also Barr 2003; Black 1985; Gardner and Stern 1996; Tanner 1999) and offers tentative generalisations about the way variables interact.

> Attitudinal causes have the greatest predictive value for behaviours that are not strongly constrained by context or personal capabilities, for behaviours that are expensive or difficult, contextual factors and personal capabilities are likely to account for more of the variance (Stern 2000:422).

In embracing the diversity of research studying pro-environmental behaviours, Stern addresses delicate epistemological and methodological issues. Attempts to bridge the seemingly incommensurable positions of methodological individualism and structuation have been popular elsewhere (Giddens 1984 *Structure and Agency*; Latour 1987 *Actor Network Theory* (ANT), and constructivist accounts have proved useful in re-politicising the individual and recognising the reflexive relationship between individual and society (Burr 1995). 'Solutions to environmental problems must be sought at both the structural and societal level of living conditions as well as at a personal lifestyle level' (Jensen 2002:332).

Stern is not alone in observing the benefits of combined psycho-situational approaches to the study of people's relationship with environmental sustainability. Blake (1999) merged psychological and situational variables in a single model (Figure 2.9), recognising the capacity of context both to restrict and enable behaviour. He theorised the *Value Action Gap* in an attempt to explain why an environmentally literate individual with a favourable attitude would not necessarily perform pro-environmental behaviour. The Gap between attitude and behaviour is visualised as containing a series of drivers and barriers which are experienced by the individual, these comprise of individual barriers such as lack of interest, responsibility barriers and practical barriers. These barriers are experienced at both an individual and social scale and require negotiation to realise pro-environmental behaviour.

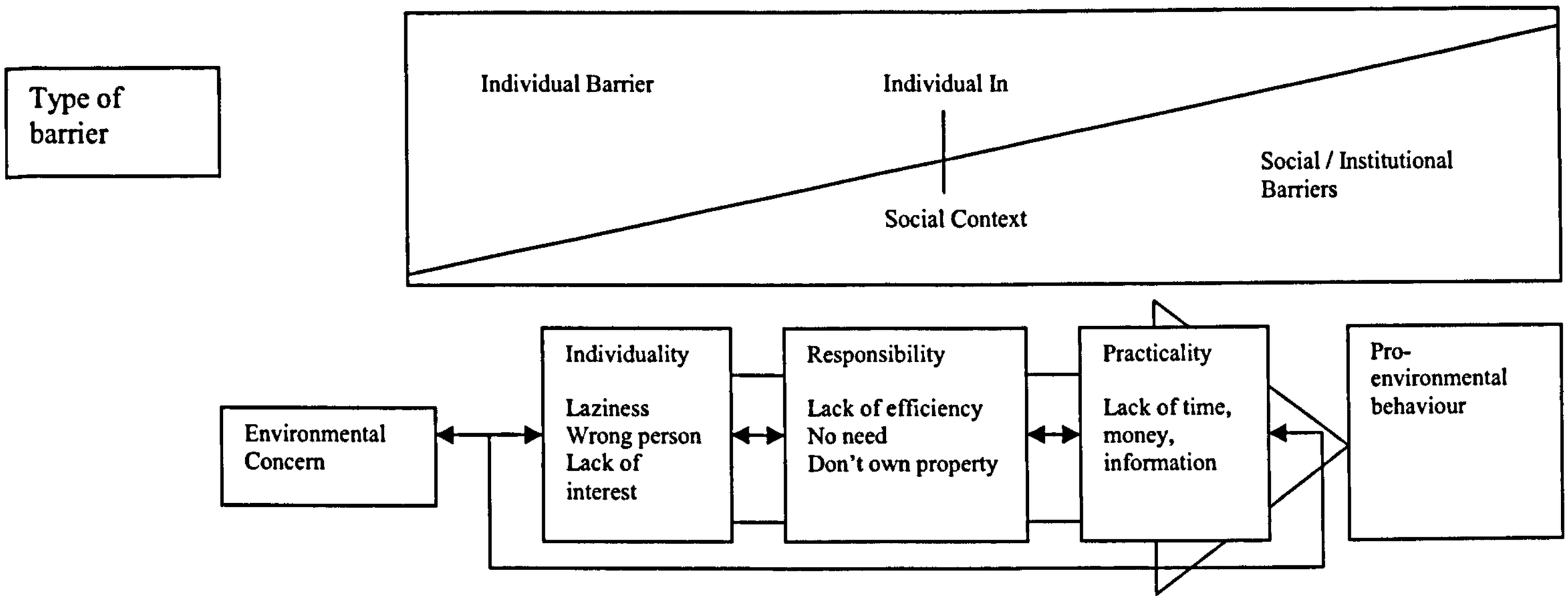

Figure 2.9 Barriers between Environmental Concern and Action

(Blake 1999:267)

Darnton (2004a; 2004b) suggests further barriers and drivers (Table 2.3). What is evident from Table 2.3 is that barriers and drivers vary depending on context. For example, information provision can increase apathy through information overload or, with specific targeting, increase concern and encourage behaviour. Similarly, cost can be prohibitive or an incentive to behaviour. This conceptualisation demonstrates the fluidity of the continued dialogue in people's negotiation of environmental sustainability, a process which Hobson (1999) refers to as rich moral conversations.

> Greater emphasis has been placed on qualitative and contextualised investigations of how people form views about the environment as they live their lives in different social situations. Research has shown that people do not have a fixed, rational and ready made set of values that will be activated by particular calls to action, rather people's values are negotiated, transitory and sometimes contradictory (Blake 1999:265).

Barriers	Drivers
Norms and habits	Norms and habits
Convenience	Infrastructure
Cost	Saving money
Psychological effects	Information
Agency	Key influencers
Terminology of sustainable development	Groups
Willingness to act	Role of government
Relative sustainability	Financial instruments

Table 2.3 Barriers and Drivers to Pro-environmental Behaviour

Adapted from Darnton (2004b:16-25)

Stryker (1994) theorised that individuals hold multiple identities and will choose between them to suit their interests depending on social context. Therefore, although one may express a general orientation towards pro-environmental behaviours, this is only representative of one competing identity and may not serve self interest in a particular situation (also Midgley 1978). Similarly, Eden (1993:1448) suggests that what is beneficial for the individual may not be for society and vice versa.

> This gap is one that needs to be understood at the systematic level, at the level of social structures and patterns that make it rational at some lower level in the social-ecological system for a person to behave in ways that are irrational at the larger eco-system level (Courtney-Hall and Rodgers 2002; also Hardin's (1968) Tragedy of the Commons).

These ideas suggest that significant fluctuations present within individual ability, situational variables and the wider sociological environment must also be taken into account when researching pro-environmental behaviour.

2.4.1 International Comparison

Stern's arguments about coherency raise queries about applicability in different scenarios. Stern points out that behaviour is dependent on an amalgamation of influences from various variables, but to what extent this remains consistent across spatially, culturally and socially divergent populations is an important consideration[21]. It is certain that differences exist between populations and there are common hypothesis as to why this is. Nyberg and Stø (2001:35-6) suggest that variations between countries can be explained by any/all of three hypotheses. The economic/technological hypothesis whereby, 'the satisfaction of basic economic needs is a pre-condition for the establishment of the surplus energy needed for people to focus on less immediate physical concerns', countries are then expected to vary in their environmental priorities depending on their economic and technological development. Also the social/cultural hypothesis whereby the social structure can explain 'variations in trust in different political institutions and society in general', and finally the political culture hypothesis. This is based on the assumption that countries with democratic cultures will differ in their approach to environmental problems than those with more authoritative political traditions. It is also evident that different cultural and social groups almost inevitably have different views of the environment and of environmental issues' (Loughland *et al.* 2003; Stables and Bishop 2001).

International comparisons of pro-environmental behaviours research have recently become more common. The most influential until now remains the project 'Emergent Environmentalism' directed by Joy Palmer at Durham University (Palmer 1992). Her work utilises SLE methodology to assess childhood influence upon adult

[21] The application of policy is usually at the level of nation state, so any national differences in interpreting influences of pro-environmental behaviour are of direct interest to policy makers although of course heterogeneity extends below the state level.

environmentalism (also Chawla 1998a; 1998b; Peterson 1982; Tanner 1980). The research demonstrates that the same events and processes remain influential across nationalities in constructing active environmentalism in adults[22] (also Dunlap *et al.* 1993). 'The fact that the same cluster of results emerge under most conditions suggests that, across countries and cultures people understand the sources of their environmental attitudes and actions in similar ways' (Chawla 1998b: 385). This would offer greater prospects for relatively unified strategies to encourage environmental sustainability and behaviour. However, despite commonalities in responses to SLE research, other evidence hints that cultures and regions have markedly different perceptions of, and attitudes about, environmental problems and pro-environmental behaviours (Boehmer-Christiansen and Skea 1991; Eurobarometer 1999; 2002; Gooch 1995; Kilbourne *et al.* 2001; Milbrath 1989; Skrentny 1993). Pierce *et al.* (1987) point out that the small amount of comparative work on environmental attitude and concern has demonstrated differences in the bases of environmental concern between states. Regions and cultures also have differing infrastructure and opportunities: 'cultures not only differ with respect to environmental concern, values, beliefs and morals, but also with respect to structural opportunities, facilitating or inhibiting environmental behaviour' (Tanner 1999: 155). Despite the advances in knowledge about different societies and environmental sustainability, current understandings are far from comprehensive and there is still much to be gained by continuing to conduct research using multiple case studies.

[22] Palmer *et al.* (1998b) report the top group of influences mentioned by nationalities of nine countries. The most important influences reported were (in order); childhood experience of nature, close family, tertiary education, pollution, adult experience of nature, secondary school, and older friends.

2.5 Sustainable Lifestyle

Considering the literature discussed in this chapter, a framework for study is needed which provides reasonable coherency in studying influences on pro-environmental behaviour among young people in different socio-spatial contexts. Recent research has sought to explore the concept of sustainable lifestyles rather than individual behaviours (Oskamp 2000). 'The concept of sustainable lifestyles suggests an attempt to join up the sustainable development agenda with the lives of the general public as they are lived today' (Darnton 2004b:14; Shove 1999). Sustainable lifestyles have been defined by Bedford (2003) as patterns of action and consumption that people use to affiliate and differentiate themselves from other people, which meet basic needs and bring a better quality of life. Bedford further identifies thirteen behaviours which she proposes constitute a sustainable lifestyle[23], the majority of which are accessible to children, teenagers and young people.

There are several arguments for positioning this study within the concept of sustainable lifestyles. To date there has been scant (but increasing) research on lifestyles in the context of sustainability. Harrison and Davies (1998) describe how research about sustainable lifestyles has hitherto concentrated on consumption, leisure and identity, with most empirical work focused on ethical consumption (Holdsworth 2003) and the collective identities of environmental activists (Routeledge 1997). There is widespread support for this lifestyle as consumption thesis, 'consumption provides the framework and means for most forms of social interaction and cultural interchange' (Fien and Skoien 2001:50; also Clammer 1997; Segger 1999); however, people do not only form

[23] Bedford's definition of behaviours is tentative but useful in providing a framework for sustainable lifestyle study. They are: domestic energy use, transport energy use, water use, waste, food consumption, general household consumption, housing, tourism, leisure, banking, participation, volunteering, and neighbourliness. In totality, these behaviours are reflective of the broader sustainability agenda; however, they all also have relevance to environmental sustainability.

their identity through consumption. People are also moral and political actors and their lifestyles reflect all of these different processes.

> Contextual investigations into the construction and meanings of lifestyles have suggested that they are not simply a collection of cognitive thoughts and discrete actions, but instead are networks of recursive physical and discursive practices, replete with personal meaning and histories, that form the individual's life world (Hobson 2001:192, also Giddens 1991).

Hobson further observes that lifestyles were also replete with meanings, habits, preferences and memories and that 'new behaviours were often rejected on the grounds of going against the interviewees' beliefs about the right way to live' (2001:198). The lifestyle perspective, therefore has the potential to reveal the multiplicity of causes and effects that individuals experience in their negotiation of environmental sustainability as well as the socio-cultural plurality of societies (Reusswig *et al.* no date).

Lifestyles and Embodiment of Environmental Interpretations

Lifestyle research is also useful in exploring some of the ways individuals come to interact with the environment. Macnaughten (2003) explores ways in which the environment is being embodied, experienced and valued in an array of social practices. Through leisure, sports, animals and tourism people come to value the environment through interaction and these practices, as part of a lifestyle, contribute to 'human' and 'relational' views of the environment (Blake 1999; Hicks and Holden 1995: Macnaughten 2003). Bixler and Morris (1997) describe how they found students who participated in water sport had nature experiences that socialised them into interpreting nature in positive or meaningful ways (also Chawla 1998a). Lifestyle choices that involve the individual in nature can therefore significant in encouraging positive orientations towards sustainability issues:

> The likelihood that behavioural and attitude change founded in beliefs, convictions, and experience of the environment as meaningful to the person concerned is more likely to last in the long term than behaviour that has changed solely in response to externally imposed regulations and incentives (Maitney 2002:304).

Myers (1998) argues for a focus on the construction of environmental experiences as a key issue for future research. 'Emotional involvement and experience are central to sustained pro-environmental values and behaviour. It is important to recognise the relationship between experience and the framing of experience' (Maitney 2002:305). This emphasises the role of personal experience since for many people 'concern about the environment begins with personal experience. The environment is commonly experienced, not simply as a set of physical issues, but tangled up as part of social life' (Macnaughten 2003:80).

Lifestyle and Identity

The lifestyle concept is also useful when studying young people, as lifestyle choices are a public manifestation of personal values and identity. There exists a burgeoning literature about young people and identity (Beck and Beck Gernstein 2002; Payne 2002a; Valentine 2000; 2003)[24] and how environmental considerations fit into identity composition may be revealing in terms of why many youth remain apathetic towards environmental sustainability. 'For the vast majority of young people identity issues are utterly entangled in the lifestyle preoccupations and consumptive imperatives of a technologically replete, image driven post-modernity' (Payne 2000:74), suggesting that the common drivers of identity among young people contradict sharply with those of environmental sustainability. How environmentalism is constructed and perceived is

[24] Typical examples of the youth and identity literature are; 'the construction of childhood' (children as consumer, agents etc) (McKendrick *et al.* 2000; Valentine 2000; 2003; West 1996), 'children and globalisation' (Aitken 2001; Desforges 1998; Massey 1998; Miles 2000) and empirical work on identity (Evans 2002; Mayall 1994).

pivotal to its success. 'Labels like 'greenie', 'activist' and 'tree hugger' are not very helpful identity signposts' (Payne 2000:72; also Morris and Schagen 1996).

Nyberg and Stø (2001:31) found that 'having a lifestyle compatible with that of one's friends seems to be important to young people, they also appear to be more materialistically orientated....their identity is constructed with the help of material commodities' (also Fien and Skoien 2001; Lury 1996). Opting for a more sustainable lifestyle involves a rejection of the processes and objects which help to compose our identities, a process which Aldridge (1994:899) calls one of the 'fundamental dilemmas of social identity.' Even when situations have been engineered where the majority of the obstacles which obstruct pro-environmental behaviour are removed, 'identity remains geared to individualistic discourse' (Darnton 2003b:9). It generally remains that the most dominant message to young people is consumerism (Bowers 1995), 'fitting in as it does so neatly between individualisation and the demands of the economy' (Loughland *et al.* 2003:14). Indeed, it remains in general that normal lifestyles are consumer led lifestyles (Bedford 2003) and there is evidence of a private resistance to sustainability which 'continues to ensure lifestyles remain unchanged' (Harrison and Davies 1998:3, also Blake 1999; Eden 1993), more than likely due to the cultural assumption that materialism equals freedom and progress (Fien and Skoien 2001:50).

Lifestyle Research as an Alternative Episteme

Finally, there is an epistemological benefit to basing this project within lifestyle research. The recent interest in lifestyle and situational research within the social sciences offers alternative qualitative, embedded, discursive approaches which counter the epistemology, methodologies and political assumptions that underlie much of the

positivist psychological research previously dominant in pro-environmental research (Hobson 2001).

The tentative view put forward here is that lifestyle research is able to reflect much of the necessary multidisciplinary and multi-dimensionality of the environmental sustainability agenda. 'The emergence of lifestyle research...., forge[s] alternative theoretical frameworks based in discursive and reflexive approaches from sociology, anthropology and geography' (Harrison and Davies 1998:3) and reflects the varied contexts in which people come to know and interact with environmental issues. 'There are many different environments, each connected to people's particular concerns, priorities, social relationships and responsibilities' (Macnaughten 2003:75).

2.5.1 Visualising a Methodology

These observations raise intriguing questions about how lifestyles are constructed for young people. The literature clearly points to a dominance of consumer-based lifestyles for young people, yet it is also recognised that animals and play in nature are considered suitable subjects for younger children[25] (Myers 1998). Why does this cease to be so for older children and young adults? Payne (2000) writes of 'sovereign hyper-individuals' choosing between unlimited identity alternatives (also Stryker 1994, Giddens 1991) but most young people live within constraints of infrastructure economy, family and peers, all of which mold and direct development (Burgess *et al.* 2003). It is likely, therefore, that these influences pervade all aspects of identity and lifestyle formation forms an apposite framework within which to explore the idea of sustainable lifestyles amongst young people.

[25] Activities known for their positive contribution of environmental development (Palmer *et al.* 1998).

2.6 Chapter Summary

This chapter has provided a synopsis on some of the extensive literature on influences upon individual pro-environmental behaviour. The discussion of common frameworks used to study this subject has also demonstrated the fallibility of educational, psychological and situational approaches alone to explain individual environmental attitudes and behaviour. Through an evaluation of research on educational, attitudinal, personal, contextual and habitual variables upon behaviour, a framework for coherency (Stern 2000) seems appropriate as a meta-framework for this study. Harrison and Davies (1998:8) suggest that,

> the spaces significant for understanding environmental lifestyle choices might range from the body as a new site for environmental concern, through the importance of the household, the workplace, schools as common resources, consumer organisations, political institutions as well as the role of virtual spaces and imagined communities.

These spaces are where interactions with environmental sustainability are produced will feature as referents in the methodology (chapter 3). In the case of young people, it is often the school which is the official motivator for engagements with environmental sustainability and a common denominator of a population otherwise divided by class, race, gender and ethnicity. Although it has been demonstrated that education is not a panacea to environmental problems, it provides essential building blocks upon which student's disposition towards the environmental is built. This foundation is then interpreted through psychological and situational influences and becomes part (or not) of individuals' lifestyle choices. The tensions between the knowledge and skills provided by education and the requirements of living in a modern, developed society are important and form the focus of this study.

Thus, the framing of environmental behaviour within a structure that encompasses social and political context as well as personal and institutional constraints provides a clear way of achieving coherency in the analysis of young people's environmental awareness, concern and behaviour. With this in mind, the next chapter describes the methodology with which these issues are explored.

Chapter 3

Methodology

3.0 Introduction

Two main literatures inform the methodology, the first is concerned with the study of young people as a particular research group and the second with the multitude of methodological approaches to studying participation in pro-environmental behaviours.

The methodology chapter is structured into six sections. Section 3.1 begins by introducing teenagers as a specific research group and reflects on the methodological implications of working with them. It then examines some common methodological approaches to researching pro-environmental behaviours, outlining the main (dis)advantages of these approaches. Section 3.2 describes the overall research strategy. It begins by reiterating the research aim and objectives before introducing the methods and research themes. Section 3.3 describes the rationale and benefits of using case studies to investigate how teenagers in different geographical locations negotiate and reproduce environmental sustainability. It introduces the policy context of the study by examining relevant EU Directives, particularly those which relate to the United Nations Economic Council for Europe (UNECE) Aarhus Convention (1998). It then explains how the concept of post-materialism helps to create research assumptions by which the sample populations in Devon and Malaga can be compared. The focus then narrows to consider the particular circumstance of teenagers by examining how education abut the environment is structured, evaluated and maintained in England and Spain before brief descriptions of the case study areas are provided. Section 3.4 describes the sampling strategy, 3.5 outlines and discusses ethical considerations and the limitations of the

methodology and finally, section 3.6 provides a brief summary of the chapter.

3.1 Research Informing the Methodology

As stated above, the methodology is informed by two distinct literatures. That which documents young people and appropriate ways to study them, and that concerned with approaches to studying drivers and barriers of pro-environmental behaviours. Although (as indicated in chapter 2) researchers have explored the relationships between age and participation in pro-environmental behaviours for correlating phenomena, there has been an emphasis on variances between age groups with less explanations of the processes and events which are influential within a given age group (Soutar *et al.* 1994; Wiidegren 1998). The task here is to seek out and combine elements of these distinct literatures with which to create a robust methodology to pursue the aim and objectives of study.

3.1.1 Researching Teenagers

The concept of youth is difficult to define. Technically, childhood lasts from 0-18 years but the majority of 16+ year olds are unlikely to consider themselves 'children' outside of certain defined legal contexts. Valentine (2003: 38) describes how the terms youth or adolescent 'are popularly used to describe those between 16 and 25, a time frame that bears no relation to diverse legal classifications of adulthood'. Elsewhere, adolescence is defined as the period of physical and psychological development from the onset of puberty to maturity and youth as the period between childhood and maturity (Lexico 2007). Such definitions are mutable and can be based on performance and biological criteria. As the sampling frame used here includes those who are legally children (<18 years) and legally adults (>18 years), and to classify the rather open criteria used in other research for defining youth, for the purposes of this research the term teenager is

used to describe those between 13 and 18 years old.

The study of children, teenagers and adolescents has become increasingly salient within geography during the last ten years. This is largely due to the cultural turn within the social sciences, which recognises that society does not consist of an 'isolable, unitary, internally coherent whole' (Amit-Talai 1995:223). Instead, transects which divide society (race, gender, age) have been recognised as determinants of individuals in their experiences of society. Within the developed world 'youth' is a period of life that exists within very specific circumstances and involves particularly strong tensions between notions of guidance and independence. '(Young people's) lives are strongly circumscribed by adults; they experience spatial restrictions on the basis of age...; and their independence and mobility is restricted by spatial concerns; a lack of their own money, and access to transport' (Valentine 2003:38). They also experience legal constrictions such as minimum age requirements for marriage, driving, employment and political inclusion. Indeed, Bunge (1973) describes those below 18 as our 'largest minority', emphasising the power imbalance between adults and minors. However, this relationship is justified by the idea that children and teenagers are still learning about the world and the processes of everyday life, and that their understanding is not considered sufficiently complete to allow full independence until they reach adulthood. 'We each possess the innate ability to comprehend the world around us which simply increases with experience' (Mathews 1986:23).

Historically, the study of children, teenagers and adolescents has depended on period-specific effects such as political climate, social idiosyncrasies, technological invention and information dissemination. Traditionally, a core assumption underpinning this body of research has been the conceptualisation of these groups as relational to adults, often

as 'adults in waiting'. More recently, it has been argued that this relational status is not necessarily representative of a lack of social agency. It is rather that these groups constitute active social agents with differing competencies[1] and that these differences should be addressed within the research process (James *et al.* 1998).

There are many reasons why teenagers are important research subjects. As noted in chapter 1, a common theme is that they are often considered tomorrow's generation (Meinhold and Malkus 2005), so an assumption exists that by understanding teenage perspectives, suggestions can be made about how future populations will perceive phenomena. Period specific effects also shape teenage perspectives; no generation or cohort is exposed to the same social events so continued study of this group (among others) is vital for contemporaneous understandings of present and future societies.

> Societies change because different cohorts or generations hold different values and attitudes. Cohorts[2] hold different values because they experience a different 'slice of history'. Historical events that occur during a birth cohort's formative adolescence and early adult years create a unique 'collective memory' (Schuman and Rieger 1992), which in turn has an enduring effect on cohort members thinking and orientation. In this way the replacement of older cohorts by younger ones, with different orientations, becomes a transforming social force (Kanagy *et al.* 1994:803-05).

Recent years have witnessed a growth in the number of researchers interested in studying youth with qualitative methodologies. Hill (2006) maintains that this interest reflects the growth of a participatory rights perspective and the social study of childhood combined with the perspective of minors as active agents who experience and shape their own lives (Christensen and James 2000; Greene and Hill 2005; Holloway and Valentine 2000).

---

[1] Similar observations have been made of other minority groups, a commonly cited example being women.
[2] Albeit rarely discreet and clearly bounded.

In considering qualitative research methods for working with minors, some have emerged out of specific methods which were developed to suit children and include mental maps, photography, drawing, writing (Darbyshire *et al.* 2005) and playing (Gurevitz 1997). The underlying assumption is that they allow minors to express themselves in ways which maximise their capabilities. However, if artistic and written skills are required then individual ability will effectively limit what they can contribute. These particular methods (with the exception of photography) are better suited to younger children (Harden *et al.* 2000).

Traditional methods of inquiry are also often used with teenagers. Harden *et al.* (2000:3) discuss the advantages of participant observation in understanding the worlds of minors whilst outlining the inherent difficulties with this approach.

> Participant observation is problematic in a culture where children are used to seeing adults as different and, therefore, unlikely to accept them as one of themselves or to ignore their presence. Even observation is constrained by practical issues of access. For example, it would be very difficult, if not impossible, to undertake sustained observation in a household context in Britain given the privacy associated with family life.

Due to these constraints they advocate the use of interviews as a way to explore the worlds of younger people and children but place emphasis on the conscientiousness of the researcher by advising them to examine 'the relationships between the methods used, the assumptions behind them and the data collected' (Harden *et al.* 2000:3). In this case, research has shown that teenagers' attitudes towards the environment start to develop at a very early stage (Bryant and Hungerford 1977; Chawla 1988; Miller 1975) and that by the time they reach adolescence, they have acquired a sufficient level of understanding of environmental issues, such as ecology, sustainable development, economics and technology, to be able to form their own world views on these issues

(Iozzi 1989; Kinsey and Wheatley 1980). Within this study teenagers are assumed to differ from adults due to their relative social positioning but are considered to be competent social agents with the ability to talk about their relationships with environment and sustainability.

This discussion of benefits of qualitative approaches to studying minors is not intended to discredit alternatives. Quantitative methods such as questionnaires are also widely utilised in research with minors (Hill 2006; Lightfoot and Sloper 2002a). The task of the methodology however should reflect certain criteria including the research questions, overall design, number of participants and ethical considerations. This study is concerned with understanding teenagers' perspectives of the environment and sustainability and how they experience social agency in relation to pro-environmental behaviours. The emphasis on experience, interpretation and meaning suggests a qualitative approach is an appropriate one with which to explore these themes.

3.1.2 Researching Pro-Environmental Behaviours

Of the numerous studies informing research on public interpretations of environmental sustainability and pro-environmental behaviours, many have utilised a quantitative framework focusing on operationalising discreet concepts which comprise environmental attitudes and pro-environmental behaviours in order to develop explanatory frameworks such as environmental citizenship (Bognor 2000; Bognor and Wiseman 2002; Dunlap and van Liere 1978b; Hawthorne and Alabaster 1999; Morris and Schagen 1996). These are then subject to statistical analysis to generate assumptions about the wider population. Although these studies have been discussed in chapter 2 their methodological pertinence to this thesis is now summarised.

The main assumption underlying quantitative research is that the social world can be understood using the same intellectual and practical approaches used in the natural sciences. The philosophical underpinnings of quantitative epistemology originate from positivism which, in terms of methodology 'entails a belief that only those phenomena which are observable, in the sense of being amenable to the senses, can validly be warranted as knowledge' (Bryman 1995:15). In quantitative research into pro-environmental behaviour, a realist stance has dominated and behaviour is the measured output of a series of quantifiable indicators (including knowledge, attitude, demographics and behaviour changing strategies). By way of social and attitude surveys this research base has identified common trends in public negotiations of environmental sustainability and pro-environmental behaviours cumulating in numerous theoretical models of explanation; Rational Choice (Scott 2000; Zey 1992), cognitive models such as the Theory of Reasoned Action (Azjen and Fishbein 1980; Fishbein and Azjen 1975) and the Theory of Planned Behaviour (Azjen and Madden 1986). Ecological Value Theories (Schwartz 1973; 1977) including the New Environmental Paradigm scale (Dunlap and van Liere 1978b), Norm Activation Theory (Hopper and Nielson 1991; Schwartz 1977; Vining and Ebreo 1990) and Value Belief Norm Theory (Gardner and Stern 2002; Stern 2000). Although inconclusive in absolute terms, these studies have produced a vast body of empirical evidence which constitutes the majority of the literature in this field which has highlighted the importance of: (i) socio-demographic variables (Samdahl and Robertson 1989; van Liere and Dunlap 1980), (ii) psychological antecedents of behaviour (Kolmuss and Agyeman 2002; Meinhold and Malkus 2005), (iii) knowledge (Jensen 2002; Kaiser and Fuhrer 2003; Lyons and Breakwell 1993) and (iv) ESD (Palmer and Neil 1994). In turn, these literatures have had considerable impact on policy, supporting the perceived intention of individuals to act rationally, since 'behaviour is governed by economic efficiency rather than equity or ethics' (Harrison

and Davies 1998:3).

Despite the volume of quantitative studies in this field[3], the diversity with which operationalisation of concepts which make up an individuals' environmental perception renders comparison between studies difficult. A relevant example is the concept 'personal norms' which is used in numerous studies. In Azjen and Fishbein's (1980) 'Theory of Reasoned Action' (Figure 2.3), personal norms are informed by the perception of how others believe the behaviour should be performed, acknowledging a social influence on behaviour. However, in Schwartz's (1977) Norm Activation Theory, personal norms are the expression of internal values 'without regard for ...social and material reinforcements' (op cit 1977). Disparities such as these are common and have resulted in what Eden (1993:1733) describes as 'lax terminological distinction' and a broad but largely inconclusive research base.

> Numerous theoretical frameworks have been developed to explain the gap between the possession of environmental knowledge and environmental awareness and displaying pro-environmental behaviour. Although many hundreds of studies have been undertaken, no definitive explanation has yet been found (Kolmuss and Agyeman 2002: 239; also Lyons and Breakwell 1993).

One explanation for the difficulties experienced by this body of work in producing conclusive findings may be that studies which operationalise concepts informing behaviour rarely 'go on to measure actual behaviours as well as intentions. Rather, intentions have generally been taken as being good predictors of behaviour' (Jackson 2005:35). Behaviour is difficult to measure both due to practical (gaining access) and ethical (observation) considerations. For these reasons, where behaviour is reported in this study attention is paid to the methodological limitations of such an approach.

[3] See Kolmuss and Agyeman (2002) for a concise review of the major contributors to the study of pro-environmental behaviours.

> The ways in which environmental behaviours are measured (i.e. actual, reported or intended) have consequences for empirical research. Because it is easier to report than to practice it, and because it is tempting to retrospectively oversee the commendable, more people will report practicing behaviour than actually do so (Ollie *et al.* 2001;188).

It is relevant that approaches which focus on quantifiable determinants of behaviour have not always encompassed the broader influences of social, cultural and personal experiences upon environmental perception and development. This nettle has instead been grasped by proponents of qualitative approaches, with their epistemological bases grounded in the philosophical traditions of phenomenology, *verstehen*[4], naturalism and symbolic interactionism (Bryman 1995). Although each tradition has its own distinct approach to how knowledge about the social world should be constructed, they share common characteristics which form the basis of qualitative enquiry. The most fundamental of these is the 'express commitment to viewing events, actions, norms and values from the perspectives of the people being studied' (Bryman 1995:61) and embedded within this commitment is a strong focus on process and interpretation. Blumer (1969:2) explains their relevance to qualitative understanding in his depiction of symbolic interactionism.

> The first premise is that human beings act towards things on the basis of the meaning that the things have for them...The second is that the meaning of such things is derived from, or arises out of the social interaction that one has with one's fellows. The third premise is that these meanings are handled in, and modified through, an interpretive process used by the person in dealing with the things he [sic] encounters.

From this perspective meanings are fluid and susceptible to social and cultural context. The meaning individuals' invest in objects, processes and events is dependent on their

[4] The German adjective used to describe understanding and interpretation of meaning in Interpretative Sociology. It was brought into social science by Wilhelm Dilthey (1833-1911) and Max Weber (1863-1920) to describe a process in which an outside observer of a culture relates to an sub-cultural group on their own terms, rather than interpreting them in terms of his or her own concepts. Verstehen therefore involves a kind of empathic or participatory understanding.

position within social, cultural and structural constructs; there is no ubiquitous perspective or world-view within subjective human experience, and this is what qualitative enquiry seeks to demonstrate. The form and consequence of constructs will vary but they remain central to understanding the individual *in situ*. Addressing these criteria within academic work requires 'a style of research in which the meaning that people ascribe to their own and others behaviour has to be set in the context of values, practices and underlying structures of the appropriate entity' (Bryman 1995:63).

Qualitative studies exploring public perception of environmental sustainability and participation in pro-environmental behaviours are to date less numerous than those from a quantitative tradition. However, the increasing recognition of benefits associated with psycho-situational approaches to this area of study and the necessity for methodological innovation when investigating epistemologically complex phenomena has resulted in a blossoming of qualitative and mixed methodologies being utilised. A relevant example is Eden's 1993 account of individual environmental responsibility and its role in public environmentalism. In the study, she used interviews to 'elucidate the issues involved in articulation and ascription of environmental responsibility, [and] the complexities of the translation of perceived responsibility into actual pro-environmental behaviour' (1993:1753), and the strictures governing them. Her methodology revealed participants' interpretation of what it means to be environmentally responsible. She concludes that, methodologically, the inconsistencies highlighted in quantitative research occur because 'values operating in different contexts are being measured...in the same context; what may be perceived by society to be good is not good for the individual' (1752). She identifies a relationship between environmental responsibilities and personal experiences of agency and efficacy. These conclusions directly inform this research, which assumes that teenagers as a group experience limited agency in comparison to

adults (also James *et al.* 1998).

Several researchers (Chawla 1998; Palmer 1998; Peterson 1982; Tanner 1980) have explored the relevance of SLEs to individuals who have chosen to work in environmentally related occupations. The majority of studies investigating these have adopted a broadly similar methodological approach, qualitative analysis of people's autobiographical recollection (Chawla 1998). Despite differences in the conceptualisation of themes between research projects about SLEs, the findings of these studies are remarkably consistent in demonstrating the importance of interaction with the physical environment through experience and the social medium through which interaction takes place (i.e. family, peers). The research has highlighted the importance of personal experiences but does not engage with this within a broader framework by considering other influences that may also be relevant (ability, level of education, geographical location).

A further example is the work of Macnaughten (2003), who examines how pro-environmental behaviours are embedded in everyday lived experiences. He used focus groups to explore the ways in which people value their personal environments, not as part of generalised abstractions, but when connected to particular everyday practices and leisure pursuits. He concluded that, for many people, concern about environmental problems begins with personal experience. 'The environment is commonly experienced, not as simply a set of physical issues, but tangled up as part of social life, people come to the issues through particular things that matter to them' (2003:80). His qualitative methodology allowed for the 'things that matter' to people to be described and understood.

Similar attempts to explore meaning and interpretation of environmental sustainability for people's lifestyles have also employed qualitative, discursive and reflexive approaches. McGregor (2005) utilised focus groups to explore how nature discourses were used to empower particular perspectives and silence others and the ramifications of this for behaviour. Harrison and Davies (1998) emphasise the necessity of understanding situated knowledge over cognitive constructs and the important role of qualitative research in communicating these effectively and revealing knowledge embedded in everyday life. Shove (1999; 2000) used interviews and focus groups to establish the relevance of cleanliness, comfort and convenience for people's motivation to participate in pro-environmental behaviours and Bedford (1999) used focus groups to explore drivers of and barriers to ethical consumption.

These studies (from both epistemological camps) have investigated, described and evaluated many of the psychological, cultural and social processes which influence perceptions of environment, sustainability and participation in pro-environmental behaviours. They have deployed a wide range of methodological frameworks which have revealed different aspects of how and why people respond to environmental issues in the way they do. This methodological multiplicity is necessary in studying the complexities of influences informing pro-environmental behaviours.

Research which has specifically studied pro-environmental behaviours amongst teenagers and youth groups has employed different methodological approaches. Studies interested in the measurement and influence of determinants of pro-environmental behaviour have utilised large scale survey data collection and statistical analyses in researching relevant themes including attitude (Bognor 2000; Bognor and Wiseman 2002), education (Morris and Schagen 1996; Lyons and Breakwell), gender (Tuncer *et*

*al.*2005), worldviews (Macnaughten 1994) and consumption (Fien *et al.* 2000). There is less research that applies qualitative assumptions of age to understanding its influence on pro-environmental behaviour. Some authors have focused on play and nature as vehicles to understanding how children and other youth groups understand and negotiate sustainability (Gurevitz 1997). Others have explored the limitations minors experience when participating in sustainability (Schusler and Kransy no date) highlighting the importance of respondent participation in the research process and the benefits of critical reflection of methods employed. Overall, these studies have utilised a range of methods; interviews, focus groups, photography, drawing and observation to conduct participatory and consultation research with groups of minors.

From this review of the methodological nature of research informing this thesis, a mixed methodology comprising of questionnaires, interviews and focus groups is chosen to take this study forward. All these methods are useful tools for establishing general (self-reported) behaviour patterns amongst the sample. Furthermore, interviews and focus groups are suitable instruments with which to establish meaning, process and interpretation associated with behaviours amongst a group which research has acknowledged have valid and informed views about the environment and sustainability.

3.2 Research Strategy: Data Collection

To reiterate, the overall aim of the thesis is to establish in what ways the situational factors of ESD, families, peers and media influence teenagers' environmental awareness and participation in pro-environmental behaviour. Within this aim three specific objectives are addressed:

1. To explore how teenagers understand and value the environment and sustainability;

2. To determine key barriers and drivers of pro-environmental behaviour amongst teenagers including socio-demographic variables;

3. To evaluate the impact of differentiated power relations between adults and teenagers upon teenagers' participation in pro-environmental behaviours.

The overall research strategy is to explore themes identified in previous research as salient in determining pro-environmental behaviours but in the context of teenagers as a distinct sub-group within the overall population. Of central importance to this study is how teenagers' perceptions and experiences are translated into meanings and beliefs about environmental sustainability and ultimately, manifested in behaviour. This strategy requires that data are generated and analysed to best reveal process and interpretation indicating that a qualitative approach is the most suitable for the methodology. Within this ambit however several data lend themselves to quantitative analyses, therefore the methods employed for data collection are a questionnaire to establish socio-demographic information and certain behavioural patterns, with the bulk of the data generated by interviews and focus groups.

Employing mixed methods within an overall qualitative methodology can benefit this study as 'each method is a different line of sight ...[for] observing social and symbolic reality' (Berg 2007:5). Fielding and Schreir (2001) suggest that, as far as the description of lived experience is concerned, qualitative research allows for the complexity of the

situation to be uncovered whilst quantitative research is able to distinguish the differing extents to which a category of experience may be present. Combining approaches in this way is commonly known as triangulation and provides a medium by which findings can be confirmed and validated (Knafl and Breitmayer 1989; Leedy and Omrod 2001)[5]. These methods were used to explore the following research themes (Figure 3.1) which emerged from the literature review (chapter 2) and aim and objectives of study as those central to building understanding about the ways teenagers engage with the environment and sustainability.

Teenager's perception of environment and sustainability
ESD
Media
Peers
Family
Experience of environmental responsibility
Participation in pro-environmental behaviours

Figure 3.1 Research Themes

3.2.1 The Questionnaire

Questionnaires have been widely utilised in the study of pro-environmental behaviour to establish the relevance of attitudes, opinions, values and logistical constraints for participation in behaviour. They have been important tools in the development of scaled instruments such as the DSP and NEP and have provided comparable data sets across regions and nations (Eurobarometer 1999; 2002; 2005). Questionnaires are quicker and less expensive to administer than many qualitative methods and therefore are a valuable

[5] The multi-methods approach to triangulation is argued to be simplistic by some authors, who argue instead triangulation represents varieties of data, investigators, theories and methods (Denzin 1978; Fielding and Fielding 1986).

method of collecting a wide range of information from a large number of respondents.

The questionnaire created for this study was developed by defining which elements of the research themes were best collected and analysed in quantitative format. It consisted of 52 items structured into five sections over four double sides of A4 paper (Appendices 1-2). The sections were titled:

1. You, your home and family
2. Transport
3. Media
4. Money
5. You and the environment

The purpose of the questionnaire was to generate data on the following;

- Socio-demographics;
- Patterns of behaviour; transport, shopping, media use, NGO membership and vegetarianism;
- Awareness and concern of a range of environmental issues;
- Nature of engagement with ESD and self-reported environmental knowledge;
- How a range of influences affect general disposition towards the environment.

(i) Socio-demographics

The socio-demographic data established age, gender, school, family composition, social class and housing tenure (1.1-1.13). This information is useful to place the

individual within broader (if crude) social classifications and to provide references for comparative statistical analysis.

(ii) Behaviour

Transport

Participants were asked how many cars and bicycles were owned by their households (2.1-2) and how frequently they and their families used different transports (car, bicycle, local buses, coach, train and walking) (2.3).

Media

The media section ascertains which media forms were used by participants and their families. They were asked to indicate which were used (television, newspapers, radio, Internet, books, magazines and computer games) and how often (3.1). Participants were also asked to specify which media type they believed to be the most trustworthy in providing important information (3.2). Finally they were asked to indicate preferred viewing (soap operas, news, science, nature and holiday programmes, reality television, music television and documentaries) and how often they watched them (3.3).

Use of Open Spaces

The availability and use of gardens and parks by teenagers was explored by asking whether there was a park close to their home and what activities they participated in there (sports, playing with friends and gardening) (1.12-3).

Lifestyle Indicators

Reported participation in selected private sphere environmentalism and environmental activism (Table 2.1) which can be motivated out of a conscious and deliberate concern

for the environment (Eden 1993; Stern 2000). Participants were asked to indicate whether they were vegetarian (1.18), if they purchased green goods (1.17), their awareness and membership of environmental NGOs (3.3-5) and if they donated money or time to environmental causes (3.3-6).

Participation in Decision Making

Participants were then asked about decision making and consumption patterns within the home (1.16-1.19) and for transport use (2.1-2.3). Teenagers' experiences of participation in formal decision making processes were also investigated by asking whether participants had ever sat on a youth or school council (5.8-5.10). Further questions were asked about whether they received their own money and what they liked to spend it on (3.1-3). This question was followed up in the interview and focus group sessions by asking about opinions regarding consumer issues.

(iii) ESD and Environmental Knowledge

ESD was addressed by asking participants to identify in which school topics they were taught about the environment (5.5) and to provide an example of a recent environmental topic they had been taught about (5.6). They were also asked to indicate whether they had heard of, and if they were worried about, a list of 22 common environmental problems ranging from global issues to local ones (5.11) and to indicate how they rated their overall environmental knowledge (5.3).

(iv) Influences

Question 5.4 asked participants to indicate how different phenomena made them feel

about the environment by choosing options along a five-point Likert Scale[6] . The phenomena were keeping pets, parents, teachers, religion, outdoors, education, organisations, media, travel abroad, environmental issues, friends, books and magazines.

Analysis of Questionnaire Data

The analysis of the questionnaire generated data had several purposes. As well as providing data about the above themes for the total sample, the analyses sought out significant differences in the data based on age, gender, social class and geographical location. As the questionnaire was administered before the interviews and focus groups took place it performed the additional function of introducing the respondent to the themes that would be discussed in the qualitative sessions.

The questionnaire data was analysed in the software 'Statistical Package for the Social Sciences' (SPSS) version 11.5. The data set was primarily subject to description and then analysed with inferential (Chi-square and Mann Whitney) and correlation (Spearman) applications as these techniques lend themselves to comparative analyses. Results are presented in chapter 4.

3.2.2 Interviews and Focus Groups

Interviews are commonly used as a data gathering technique within the social sciences, Holstein and Gubruim (1997:113) even go so far as to claim that 'it has been estimated that 90% of all social science investigations use interviews in one way or the other'. Despite the popularity of interviewing, as a method it is subject to numerous common critiques. The interview cannot be considered a neutral exchange of data (if this is ever

[6] Makes me care about the environment, makes me feel concern for the environment, don't know, does not make me care about the environment, totally disinterested.

attainable), that the interviewer is a 'positioned subject' (Rosaldo 1989), that the interviewer, interviewee and interview are 'historically and contextually located' (Fontana and Frey 2005: 696) and the interview process is humanised, subjective and difficult to replicate. There are further issues of power relations between the interviewer and interviewee and the potential for this to pollute the validity of the interview data and the analysis; 'it is the researcher who ultimately cuts and pastes together the narrative, choosing what will become part of it and what will be cut' (Fontana and Frey 2005: 697). These critiques have resulted in variable levels of acceptance outside the community of practitioners who use and advocate the interview method. However, due to calls for rigour in interview data collection and analysis (Baxter and Eyles 1997) there is increasing guidance for the researcher whose research question necessitates the use of interview methods (Baxter and Eyles 1997; Denzin and Lincoln 2005), and parallel recognition that interviews are powerful tools within qualitative analysis and are vital to understanding multiple perspectives and highlighting marginalised and 'other' voices (Berg 2007; Taylor and Bogdan 1998).

In this case semi-standardised interviews (Figure 3.2) were used to explore the identified research themes (Figure 3.1) with individual participants. Semi-standardised interviews were preferable as they allow for the adjusting of questions through changes in language or unscheduled probe questions which is useful when generating knowledge inductively, and when working with vulnerable groups

More or less structured
Wording of questions flexible
Level of language may be adjusted
Interviewer may answer questions and make clarifications
Interviewer may add or delete probes to interview between subsequent subjects

Figure 3.2 The Semi-Standardised Interview

(Adapted from Berg 2007:93)

Despite the usefulness of interviews for investigating individual perspectives on the research themes, interviews are a less astute method for exploring inter-personal communications and influences relevant to this study. Therefore, focus groups were utilised to explore the relationships between participants and to observe the norms and conventions that cultivate the way concepts of environment, sustainability and pro-environmental behaviours are constructed and articulated in normal dialogue. McGregor (2005: 325) advocates the use of focus groups for these purposes.

> Researchers in geography have rarely employed small groups as a means of exploring the processes of interpersonal communication. Only participant observation, which is still under-utilized within geography (see Herbert 2000), provides the same opportunities for researchers to observe the ways in which people socially interact and converse with one another. This important attribute allows researchers to analyse the social dynamics governing discussions and focus upon the socially accepted norms and rules that dominate, shape and restrict debates. As Burgess *et al.* (1988b, 358, original emphasis) observed, 'the *content* of conversations in a group, is inseparable from the *social structures* and the *processes of communication* within which it is spoken'. A discourse-centred approach utilizes the interactive nature of focus groups to analyse the shifting social structures impacting on social communication. Elwood and Martin (2000) have noted that the social and physical context in which research takes place, or the 'micro-geographies of interview locations', influence what, how and why things are said. In employing small groups the micro-geography of the interview is one dominated by social interaction, thus allowing the processes of social interaction, rather than the isolated knowledges of individuals to be observed. Myers and Macnaghten (1998:351). have remarked, 'even under these relatively artificial conditions [a one off focus group], we saw important aspects of talk

> that are glossed over in surveys and even in interviews; there is every reason to think that they have implications of the way people talk about the environment in pubs and markets and buses'. The discussions are products of the research, but the processes of communication and interaction are likely to reflect the norms and social conventions of the participants themselves.

In creating a repertoire of questions for the qualitative events the same question structure was used for interviews and focus groups (Appendix 3) and was developed to contain a catalogue of core, probe and extra questions. However, as the events were semi-standardised, unplanned questions were asked where appropriate. The core themes covered in these sessions were:

- Teenager's perceptions of the environment and sustainability
- ESD
- Media
- Peers
- Family
- Environmental responsibility
- Participation in pro-environmental behaviour

Each event began by thanking participants for completing the questionnaire and reiterating their role in the research process. This was accomplished by explaining that the research explored their thoughts and feelings about the environment and environmental issues and that there were no wrong or right answers. They were reminded that their contribution would remain confidential and that they were free to withdraw from the project at any time. Each interview or focus group lasted between 30 minutes and 2.5 hours. The groups were made up of between three and eleven participants (mean=8). Events typically took place in a classroom, office or library and always within the school grounds but no supervisory school personnel were present at

any of the interviews or focus groups. At the end of each event participants were given the opportunity to question or comment upon any aspect of the research.

(i) Teenagers' Perceptions of the Environment and Sustainability

The first theme explored in the interviews and focus groups was meanings the term environment held for teenagers. The reason for this was that the term environment is problematic, having evolved to symbolise both natural and sociological processes. In order to ground the complete data set in the context of a teenager perspective it was essential to understand what meaning the term held for participants. Participants were asked about positive and negative associations they had for 'environment', and whether and why they felt it was important to protect it. They were also asked what they felt was important about the environment to gauge how far they perceived the environment in anthropogenic terms i.e. as a resource base, or as having intrinsic values, or as an amalgamation of both views.

(ii) ESD

In the interviews and focus groups participants were asked if they were taught about environmental issues only, or also solutions to issues and whether they were interested in the topics covered. An important element to this discussion was different types of education approaches, and participants were asked about classroom versus experiential ESD as well as the applicability of school-based ESD to activities outside of school.

The importance of school policies and key individuals such as teachers was also explored. Participants were asked whether school staff were enthusiastic about the environment and the perceived importance of this as a factor in motivating values which

favour environmental and sustainability issues and pro-environmental behaviours. School policies have been found to influence behaviour (Morris and Schagen 1996) but this often depends on their comprehensiveness and enforceability.

(iii) Media

The media form most discussed in the interviews and focus groups was television. Participants were asked about their viewing of environmental programmes focusing on what they liked or disliked about them, who they viewed this type of television with, and how the environment was represented. They were further asked which media forms they used to obtain information about the environment, and whether this information was actively sought.

(iv) Peers

Participants were initially asked about the general interests and activities of their peer groups. They were then asked about friends who were interested in the environment; the nature of their interest, and if the environment was ever discussed amongst peers outside of the educational setting. Finally participants were then asked whether peer groups felt threatened by environmental problems and what activities (if any) peers took to address this.

(v) Family

Participants were asked which environmentally significant behaviours were practiced pro-environmentally at home; by whom and the ways they were reinforced. They were further asked about family members and events which were particularly influential to their environmental development. The focus groups were useful in highlighting

contrasts and commonalities between their experiences and for discussing reasons for this.

(vi) Responsibility

Forms of individual environmental responsibility were explored by asking if participants felt it was important to protect the environment and reasons for their responses. The relationship between responsibility and behaviour was also discussed to ascertain the extent to which pro-environmental behaviours were undertaken as a result of perceived responsibility. Reasons why environmental issues should be important to teenagers and the kinds of power they had to address them were explored by asking how their opinions and concerns about the environment were received by other people. This involved ascertaining who listened to them, whether they felt their opinions were valued and how much efficacy they believed their actions had.

Social environmental responsibility was also explored by asking participants to identify social groups and sectors they believed caused and solved environmental problems and to deliberate on their own contribution to furthering environmental and sustainability agendas. This involved discussing the unequal levels of agency and power held by different actors and organisations and their own position relative to these structures as minors.

(vii) Pro-environmental Behaviours

Participants were asked which pro-environmental behaviours they practised and in what context. The decision to collect the majority of these data through interviews and focus groups addresses the problem inherent with reported behaviour noted by Ollie *et al.* (2001) and Ipsative theory (Tanner 1980). They suggest that individuals only consider

behaviours they are aware of and that behaviours are set within a broader context of constraints. It is therefore important to understand what behaviour is considered pro-environmental and why it is practiced. This is noted by Jurin and Fortner (2002:387), 'It must be stressed that reported behaviour is based on how pro-environmental people see themselves and what their reasons are for perceiving themselves as environmentally concerned'. As the focus of this project is to explore influences on teenagers' perceptions and negotiations with environmental sustainability and not to accurately report levels of pro-environmental behaviours, this less empirical approach is (justifiable and) useful in revealing the priorities teenagers have when negotiating behaviour. Different behaviours were explored, usually beginning with low-level private sphere environmentalism normally taking place within the home (Shove 1999) and perhaps school, before moving on to discuss activism and non-active public sphere behaviours (Stern 2000).

Analysis of the Interview and Focus Group Data

The textual material for Devon and Malaga were analysed separately and although the majority of the themes were applicable in both cases, themes particular to each data set were also allowed which aided the identification of distinctive trends. The purpose of the analysis was to not only identify meaning, process and interpretation common to teenagers who participated but to reveal and explore the effects of age, gender and geographical location upon their experiences and beliefs. In addition to these categories evidence of relationships between categories were sought, especially those which affected perceptions or participation in behaviours.

The interviews and focus groups were analysed in the same way. The data were initially

transcribed into Microsoft Word and then entered into the software 'NVivo 6'[7], where they were subjected to non-statistical content analysis; 'the careful and systematic examination and interpretation of material to identify patterns, themes, biases and meanings' (Berg 2007:306). The analysis was modelled upon a general interpretive orientation which allowed for social interaction and human activity to be treated as text; thus coded, organised and reduced as part of a qualitative analytical process (Figure 3.3).

The coding frame which emerged as relevant to this analysis was formulated by both inductive and deductive process (Abrahamson 1983; Strauss 1998). The inductive approach involved the author studying the data to identify meaningful themes, whereas the deductive approach used categories suggested by other theoretical perspectives. The development of inductive categories enabled the analysis to 'ground...categories to the data from which they derive' (Berg 2007:312) resulting in theory tailored to the particular context as advocated in a grounded theory approach[8] (Glaser and Strauss 1967). The final stage in the analysis process was to consider the findings in the context of the three key literatures informing this thesis; those describing barriers and drivers to pro-environmental behaviours, literatures on teenagers and the environment and those developing the emerging concept of sustainable lifestyle.

---

[7] NVivo 6 is suitable for network and organisational analysis, action or evidence-based research, discourse analysis, grounded theory, conversation analysis, ethnography, literature reviews, phenomenology and mixed methods research (QSR 2007).

[8] Glaser and Strauss (1967: 2-3) suggest in their description of grounded theory that 'to generate theory the best approach [is] an initial, systematic discovery of the theory from the data of social research. Then one can be relatively sure that the theory will fit the work. And since categories are discovered by examination of the data, laymen involved in the area to which the theory applies will usually be able to understand it, while sociologists who work in other areas will recognise an understandable theory linked with the data of a given area'.

Data are collected and made into text (e.g. field notes, transcripts)
Codes are analytically developed or inductively identified in the data and affixed to sets of notes or transcript pages
Codes are transformed into categorical labels or themes
Materials are sorted by these categories, identifying similar phrases, patterns, relationships and commonalities or disparities
Sorted materials are examined to isolate meaningful patterns and processes
Identified patterns are considered in light of previous research and theories and a small set of generalisations is established

Figure 3.3 Standard set of Analytical Activities for Qualitative Analysis

(Berg 2007:306)

3.3 Case Studies

Section 3.3 introduces and provides a rationale for the case studies used to conduct this study. As discussed in chapter 2, determinants of pro-environmental behaviours are multiple, complex and sensitive to context. The case studies were therefore chosen to provide an opportunity for useful study of contextual determinants of pro-environmental behaviours on teenagers within two distinct European locations. The justification for using two case studies within Europe is underpinned by the EU's increasingly prominent advocacy of sustainable development and the increasing interest in public responses to sustainable development in both conceptual and policy terms. The case study locations chosen were Devon in England and Malaga in Spain, descriptions of which are provided later in this section. The collective case study methodology (Stake 1994; 2000) has proven useful in testing the validity of phenomenon where multiple

explanations exist as is the case with identifying determinants of pro-environmental behaviour (Hopkin 2002), and is advantageous to use within an EU context where singular policy objectives will be met by a range of responses throughout diverse sovereign states.

3.3.1 Setting the Context - The Role of the EU

The EU is a supranational and intergovernmental union charged with organising selected relations between its Member States and their populations. It is founded on a series of treaties[9] which are agreed and ratified by each Member State. The treaties then form a base for legislation affecting the Member State. Initially, the main objectives of the EU were to promote security by encouraging trade and prosperity between Member States. However, its responsibilities have increased and it now deals with a range of activities which include citizen's rights and environmental protection. Since 1967[10], the EU has set environmental standards for Member States, which over time have broadened (Treaty on European Union 1992), and increased through improved legislation.

The framework for EU environment policy has been its Environmental Action Programmes (EAPs). The first programme ran from 1973-1976 and included a range of measures designed to deal with urgent pollution problems. This first EAP defined principles such as the Polluter Pays Principle (PPP) and recognised that prevention was better than cure, themes that have continued throughout the six programmes (Daemen

[9] The Treaty establishing the European Coal and Steel Community (ECSC) 1952-2002; The Treaty of Rome, which established the European Economic Community (EEC) in 1958; The Single European Act (SEA) 1987; The Treaty on European Union 1992, renamed the EEC to the European Community and introduced inter-governmental co-operation, creating the European Union (EU); Treaty of Amsterdam 1997; Treaty of Nice 2001; Treaty establishing a Constitution for Europe 2004 (yet to be ratified).
[10] 1967 saw the first Environmental Directive (67/548) under the European Community, on classification, packaging and labelling of dangerous substances (European Commission 2002).

2003). Recommendations from the 5th EAP (1992-2000) claimed that despite progress, the state of the environment would continue to deteriorate unless stakeholders and citizens took more ownership of efforts to protect the environment[11] (European Commission 1993). This led to an emphasis in the 6th EAP (2001-2010) on public awareness of environmental issues and participation in sustainable development. The 6th EAP therefore specifies access to information as a sound method to influence public opinion, and advocates citizen involvement in policy-making[12]. Formal commitment to sustainable growth is also evident in the 1992 Treaty on European Union (also know as the Maastricht Treaty), and to sustainable development in the Amsterdam Treaty of 1997.

Running parallel to these events was the adoption and implementation of the UNECE Aarhus Convention in 1998[13] by the EU. The origins of the Convention stem from the requirements of Principle 10 of the Rio Declaration, which advocates transparency in the processing of environmental information. The Convention is founded on three pillars; access to information, public participation and access to justice. The transposition of Aarhus onto EU policy repealed the 1990 Directive 'Freedom to Access on Information on the Environment' (90/313/EEC) through the 2003 Directive 'Public Access to Environmental Information' (2003/4/EC), which grants general rights (over freedom) to environmental information. Also relevant is Directive 2003/35/EC, the objective of which is to provide for public participation in environmental matters, and

[11] The Dobris Assessment for the 5th EAP stresses better access to information, citizens' participation in the political process and access to environmental justice as vital in promoting sound environmental policy (European Commission 2000).
[12] The 6th EAP identifies four areas that require urgent action; climate change, protecting nature and biodiversity, health and quality of life and managing natural resources and tackling waste. There are seven further areas of concern; air pollution; waste recycling; management of resources; soil protection; urban environment; sustainable use of pesticides and marine environment (Europa 2002).
[13] The Convention's full name is 'Convention on Access to Information, Public Participation in Decision Making and Access to Justice regarding Environmental Matters'. It came into force on the 30th October 2001 and is signed by all EU members as well the EU itself.

the further proposal of a Directive to enable the process of environmental justice[14]. Once ratified these 'will play an important role in 'democratising' environmental management' (European Commission 2000:25). Both Spain and the United Kingdom signed the Aarhus Convention in 1998. In Spain this resulted in '*El Ley Derecho de Acceso a la Información en Materia de Medio Ambiente*' (55/1999), and in the UK the 'Environmental Information Regulations 2004' were developed from the 'Freedom of Information Act 2000'.

3.3.2 National Contexts: Ideologies, Policies and Strategies in England and Spain

An ideological framework helpful in exploring the possible influence of historical events upon contemporary public negotiations of sustainability in England and Spain is post-materialism (Inglehart 1977; 1990; chapter 2). If proponents of post-materialist type theories are correct, then, broadly speaking, evidence of post-material views on environmental sustainability will be observable in both populations but will be stronger in the Devonian sample since democracy and economic development are pivotal requirements of enabling post-materialistic values and Britain was the first country to industrialise (1790 onwards), with democracy beginning to develop from 1832[15]. In contrast, the current democracy was not achieved in Spain until 1977; Spain lurched between monarchy and republic until 1936 when it entered a forty year dictatorship under General Franco which did not end until his death in 1975. The types of political participation that democracy brings are important in socially reproducing environmental values as normative values. Figure 2.7 describes the 'rise of elite challenging issue-

[14] The EU is currently proposing a Directive which aims to establish a minimum requirement for access to judicial and administrative proceedings in environmental matters (Hamer no date). This Directive will complete EU provision for the three pillars proposed at Aarhus.
[15] The 1832 Reform Bill gave voting rights to the aristocracy though full democratic rights were not achieved until 1928, when Lloyd George gave full adult suffrage to all, including women.

orientated groups', which have been vital in the emergence and mainstreaming of environmentalism. Evidence suggests that weak mobilisation of public opinion results in a weak environmental agenda (Dalton 1994; Rohrschneider 1988).

Environmental NGOs have been active in lobbying their cause in Britain for a sustained period of time and are pivotal in raising awareness of environmental issues and environmental justice. In Spain, NGOs have yet to achieve a comparable level of success. Börzel (2000:160) describes:

> ..the level of domestic mobilization in Southern European countries, where environmental organizations and citizens groups are have only limited resources, and where environmental awareness is only just emerging. As a result, domestic mobilization is often diffuse, and hence, less effective (also Eurobarometer 2002.)

Börzel (2000) develops a push and pull model to explain variations in compliance to EU environmental policy between EU states. Her model lends credence to the post-materialist emphasis on public political participation as well as emphasising the juncture of difference between the UK and Spain. In the model, states are constrained by 'push' and 'pull' factors (Figure 3.4), which converge to determine success in implementing EU environmental policy. The model exemplifies the importance of civil society in pressurising governments through political parties, environmental organisations, 'watchdogs', and powerful interest groups (pull factors), and proposes that non-compliance is most likely to occur when low levels of domestic mobilization exist. She uses the model to dispel the stereotypes that have cast Southern European states,[16] including Spain, as laggards in protecting their environment, yet admits to the common problems caused by shallow domestic environmental mobilisation.

[16] Greece, Spain, Italy and Portugal.

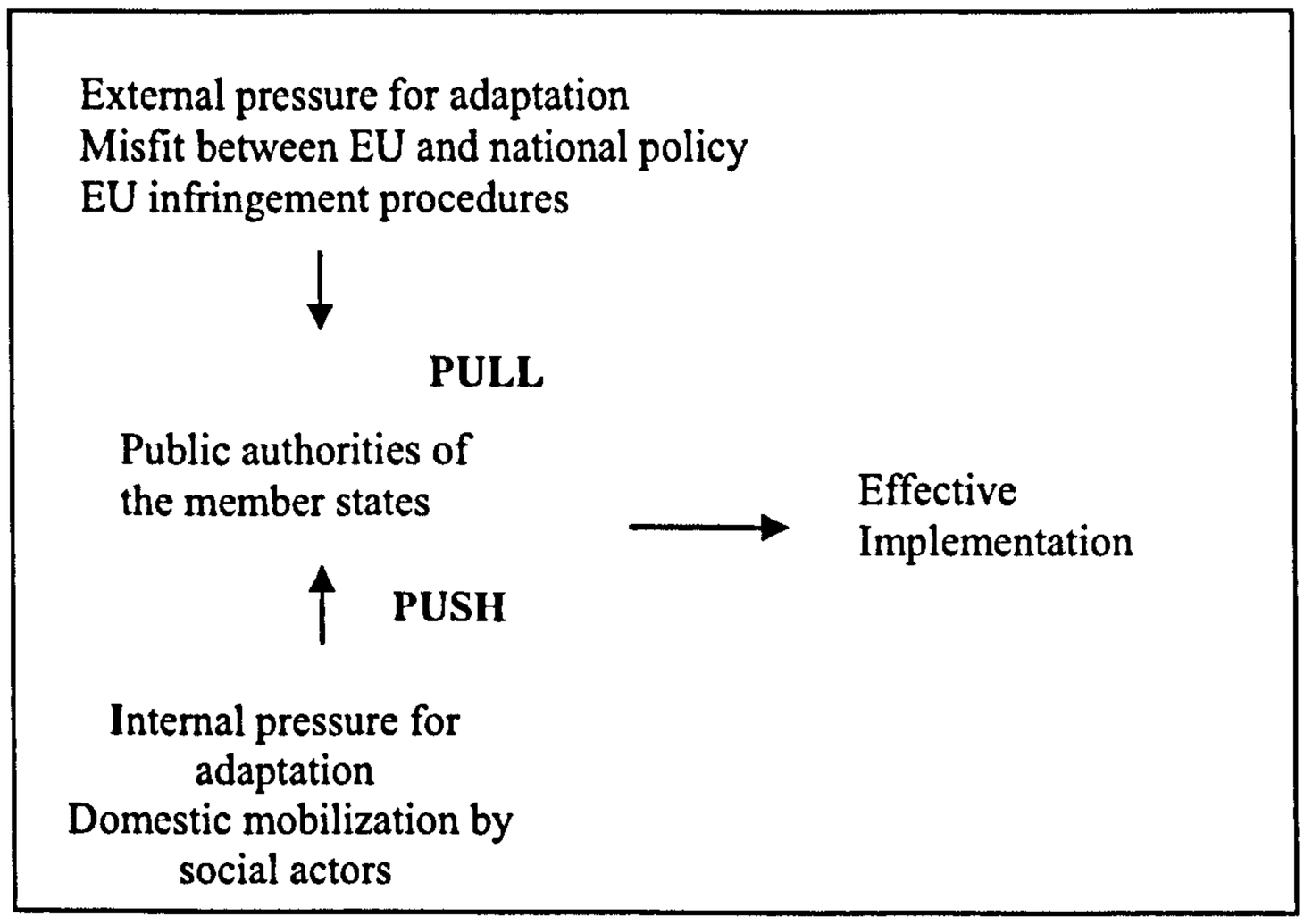

Figure 3.4 The Push- and- Pull Model of Implementation

(Börzel 2000:228)

However, large scale mainstreaming of environmentalism into public and political culture is occurring in Spain (Garzón and Seoane 1991; Herrera 1992; Jiménez 1999). Table 3.1 shows that Spain, like the UK, is moving towards a post-materialist majority and through the implementation of the Aarhus convention, Spain is increasingly well equipped to raise public awareness of environmental issues.

Country	1981	1990	Change
Spain	-41	-6	35
United Kingdom	-13	0	13

Note: The index is the percentage of post-materialists less percentage of materialists

Table 3.1 Post-materialism Index[17]

(Adapted from Scruggs (2003:106))

[17] This measure of post-materialism relies on a battery of questions. See Scruggs (2003) for full details.

Positioned somewhere within these figures are children and young people, for whom post-materialist influence is arguably normalised by their immersion and socialisation into their surrounding cultures. Ingleghart (1977) expects the differences in values across a nation's age groups to reflect that nation's history during the lifetime of the people in the sample. Therefore, according to this parameter the argument stands that the UK sample population may hold some advantage in pro-environmental views and be better socialised into a political culture which advocates participation and transparency in environmental matters, than their Spanish counterparts.

There are few sources which provide statistics on pro-environmental behaviour in the UK and/or Spanish populations (Defra 2007: Eurobarometer 2008) and at the time of writing this thesis only one reputable source for comparable statistics could be located. The series of Eurobarometer surveys on attitudes of European citizens towards the environment (1999; 2002; 2005; 2008) provides comparable figures for the EU as a whole and for individual member states. Table 3.2 presents some of the data from the 2008 survey which is relevant to this study and clearly demonstrates that individuals in the UK report that they are more likely to undertake pro-environmental behaviour for environmental reasons. This data supports other Eurobarometer findings which indicate that whilst 92% of UK individuals believe they can play a role in protecting the environment, only 84% of Spanish individuals feel they same way (Eurobarometer 2008:17).

Behaviour	UK %	ES %
Average of actions[18]	*3.0*	*2.1*
Separate waste for recycling	74	52
Cut down energy consumption	50	33
Cut down water consumption	35	37
Reduce consumption of disposable items	44	24
Chose environmentally friendly way to travel	30	26
Choose locally produced products	30	12
Buy environmentally friendly labelled products	23	11
Used my car less	18	10
None of these	8	11

Table 3.2 Comparative statistics on pro-environmental behaviours in the UK and Spain

(Adapted from Table 'Have you done any of the following in the past month for environmental reasons?' (Eurobarometer 2008:22)).

The data set is however, restricted on what it can divulge about teenagers in relation to other age groups. However, Table 3.3 does demonstrate that for the EU overall, the 15-24 years old age group are less likely to have undertaken pro-environmental behaviour for environmental reasons than other age groups. The survey concludes that individuals who tend to refrain from participating in the actions listed in Table 3.3 are more likely to be 'young, and linked to this, a student; [have] spent a shorter time in fulltime education; may be unemployed and; feels uninformed about environmental issues' (Eurobarometer 2008:23).

[18] The average of actions was calculated by adding up the number of actions each respondent has done and dividing by the total number respondents in the 2008 Eurobarometer sample.

Age	Many actions	Some actions	A few actions	No action
15-24	1	15	68	13
25-39	3	23	63	9
40-54	4	26	61	8
55+	3	24	61	9

Table 3.3 % Actions taken in the last month for environmental reasons

(For EU 27 Adapted from Eurobarometer 2008: 23)

Table 3.2 lends anecdotal support to the assumptions this thesis makes about the influence of post-materialist values on pro-environmental behaviour of UK and Spanish populations and the data in Table 3.3 supports the suggestions made by Darnton (2004b) and Morris and Schagen (1996) that young people are reluctant to participation in pro-environmental behaviours.

Directly related to EU policies to enable public participation in environmental sustainability, and of obvious relevance to the study, is education. Although Aarhus and subsequent EU Directives are not explicit about the role of education[19], education is one strategy to achieve its objectives. The Directives instead leave scope for transposition into domestic legislation, which has implications in terms of how Directives are interpreted, reproduced and finally received by recipients of education.

(i) England

In England, ESD is controlled by the Department for Education and Skills (DfES). In response to the ratification of the Aarhus Convention, the Sustainable Development

[19] Although the Rio Declaration (UNCED 1992), upon which Aarhus was based, does directly maintain education about the environment as a key strategy.

Education Panel (SDEP) (1998-2003) was set up inter-alia, to promote ESD. The work of the Panel led to the increased profile of ESD in the 2000 revision of the national curriculum. This defines ESD as:

> Education [which] enables people to develop the knowledge, values and skills to participate in decisions about the way we do things individually and collectively, both locally and globally, that will improve the quality of life now without damaging the planet for the future (QCA 1999: no page).

ESD was thereafter made a statutory requirement in geography, science, design and technology, and citizenship (RGS 2005). To accompany this, the SDEP identified seven interrelated concepts to be used by stakeholders to simplify the complexities associated with ESD[20]

In 2003 DfES launched the 'Sustainable Development Action Plan for Education and Skills', which sits within the wider UK Sustainable Development Strategy. The plan is organised around four key objectives:

1 All learners will develop the skills, knowledge and value base to be active citizens in creating a more sustainable society;

[20] **Interdependence:** understanding the connection between our lives and other people at global and local levels; **Citizenship and Stewardship** recognising we have rights and responsibilities to participate in decision making and that everyone has a say in what happens in the future; **Needs and rights of future generations** learning how we can live lives that consider the rights and needs of others, and that what we do has implications for the future; **Diversity** understanding the importance and value of diversity in our lives, culturally, economically and biologically, and that our lives are impoverished without it; **Quality of life** recognising that for any development to be sustainable it musty benefit people in an equitable way; **Sustainable Change** understanding there is a limit on development, and that the consequences of unsustainable growth are increased poverty and hardship, and further degradation of the environment; **Uncertainty and Precaution** understanding that we should be cautious, precautionary principle (QCA 2002).

2 We will pursue the highest standards of environmental management across all properties owned and managed by the department;

3 We will encourage and support all publicly funded educational establishments to help them operate to the highest environmental standards;

4 We will make effective links between education and sustainable development to build capacity with local communities.

(DfES 2003:7).

The approach targets action at all levels of the educational system and has direct implications for the Learning and Skills Council (LSC), the Teacher Training Agency (TTA), the Qualifications and Curriculum Authority (QCA), the National College for School Leadership (NCSL) and the Sector Skills Development Agency (SSDA).

Despite these moves to mainstream ESD many responsibilities are delegated to individual schools. Each school must write development plans and policies to implement ESD. The Office for Standards in Education (Ofsted) and the QCA offer advice as to how this should be done and set out a framework for schools to follow including 'a checklist for school self-evaluation' (Ofsted 2003). However, the emphasis on processes such as value and behavioural change make maintenance and evaluation difficult. Many of the desired outcomes of ESD cannot be measured through traditional academic assessment; instead schools are expected to produce innovative strategies and

maintenance systems for monitoring awareness, understanding, values and behaviours[21].

To combat these problems in 2003 Ofsted published 'Taking the First step Forward....Towards an Education for Sustainable Development', to report on good practice in primary and secondary schools. It recommended a whole school commitment (preferably with a dedicated ESD coordinator), a well-planned curriculum with the inclusion of experiential learning, the active involvement of students in environmentally sustainable behaviours within the school and local community, and giving students' responsibility for the school environment. Schools are encouraged to integrate ESD into all policies in order to influence the curriculum and target a range of sustainable practices[22].

(ii) Spain

Spain consists of 19 '*communidades autónomas*' (autonomous communities), each governed by its own statute of autonomy, and having a political structure based on a unicameral legislative assembly headed by a president. The Spanish Constitution (1978) proclaims the 'indissoluble unity of the nation', whilst recognising the right to autonomy. It delegates power over matters to either the state or community; for example, education is centralised but environmental protection is de-centralised[23].

---

[21] Some of the more successful schools have adopted humanities (and, within humanities, ESD) as a special status. There are currently 10 specialist status options available for secondary schools: arts, business and enterprise, engineering, humanities, languages, maths and computing, music, science, sports and technology. All specialist schools are required to teach the curriculum; however, alongside this they 'provide enriched learning opportunities in their chosen subject areas' (SSAT 2006). The government hopes that by 2008 all schools will have specialist status awarded by the Specialist Schools and Academies Trust (SSAT).

[22] Green travel and transport for staff and students, energy and water savings and managing the waste products of school life (QCA 2002).

[23] For detail of the exact distribution of responsibility between state and community refer to www.igsap.map.es.

In 1990 the Spanish education system was re-evaluated by legislation, *'La Ley Orgánica de Ordenación General del Sistema Educativo'* (LOGSE 1990). Through this law *Educación Ambiental* (Environmental Education) (EA) was first incorporated into formal education and defined as, *'la relación con el entorno social, económico y cultural, asi como la formación en el respecto y defensa del medio ambiente'* (Artìculo 2 LOGSE 1990). Following this, Spain's ratification of the Aarhus Convention in 1998 led to the modification of legislation governing freedom to environmental information (*Ley* 38/95) to that of rights to information (*Ley Derecho de Acceso a la Información en Materia de Medio Ambiente* 55/1999) (The Law of Rights to Access Environmental Information and Material). This led to the re-evaluation of EA through the White Paper *'Libro Blanco de la Educación Ambiental en España'* (White Paper for Environmental Education in Spain), published in 1999 by *the Ministerio de Educación y Ciencia* (MEC) , which describes the strategy by which EA is to be promoted throughout Spain. Its recommendations include:

1 To raise the profile of EA from isolated initiatives to an ethos for all educational institutions;

2 To strengthen and improve EA through better training of teachers

3 To contemplate EA in the buildings, structure, planning and organisation of the school system;

4 To procure the necessary funding and resources to enable EA;

5 To form new ways to participate and co-operate throughout society in respect of EA and;

6 To utilise social programmes to aid the formation of EA.

(MEC 1999:73-76)

In Spain, the minimum curriculum content is determined at state level. The autonomous communities then establish their own curriculum based on this and schools interpret the curriculum to their own context (Eurydice 2000). Normally, between 55% and 65% of schools hours are spent teaching state established curriculum (Pereyra 2002). In reality, only minor differences exist between community strategies and these are normally to do with language, history and culture. EA is delivered at secondary level as a cross curricular theme[24]. The *Libro Banco de la Educación Ambiental en España'* (MEC 1999) contains several objectives for the curriculum:

- To increase awareness of local and global environmental problems;
- To increase the capacity for people to critically analyse environmental information;
- To facilitate understanding of the social, cultural and economic processes inherent in understanding the environment;
- To promote pro-environmental attitudes and values;
- To promote an ethic of environmental protection;
- To promote alternative solutions to socio-environmental conflicts;
- To participate in pro-environmental behaviour;
- To promote responsibility for the environment;
- To consider sustainability as part of daily life.

(MEC 1999:11-12)

The recommendations of the *Libro Blanco de la Educación Ambiental en España'* are supported by *El Centro de Educación Ambiental* (CENEAM), part of the *Minsisterio de Medio Ambiente* (MMA). The objective of CENEAM is to increase citizen

[24] Other themes are taught this way, health and consumer education are two prominent examples.

responsibility for the environment through EA and to provide a reference point for all stakeholders. Planning for ESD in school development requires consultation of the *Libro Blanco de la Educación Ambiental en Espaňa'* (1999) to give schools a clearer idea of how to teach EA. Evaluation of EA takes place as part of the mainstream curriculum, internally, as part of normal, annual internal school evaluations, and externally by the *Cuerpo de la Inspectores de Educacion* (CIE), which visits schools ensuring state curriculum has been successfully translated at the regional and school level.

From these descriptions, it is evident that official stances and approaches in both locations are similar. Although no specific evaluation of EA has yet taken place in Spain (as in the 2003 Ofsted report), the 1999 *Libro Blanco* has concretised EA within the national curriculum. Despite the reality that many outcomes of ESD and EA are difficult to observe or to measure, and that ESD/ EA policies are still developing frameworks to accommodate this, England and Spain have both developed strategies for increasing environmental awareness and encouraging pro-environmental behaviours.

3.3.3 Devon and Malaga

Devon is one of England's thirty-six counties (Figure 3.5). It is a predominantly rural county with three major urban centres (Exeter, Plymouth and Torbay) from which the majority of those who participated in this study originated. Key industries are manufacturing, health and social care sectors, tourism and agriculture. Despite a rising gross domestic product (GDP) the Devon economy lags behind the UK average GDP (DCC 2006)[25]. However, unemployment is generally low; in 2001 it stood at 2.5% (Urban Audit 2001). Population figures for the sampled area are outlined in Table 3.4.

[25] According to Devon County Council (2006), in monetary terms, Devon's GDP per head is £9636.00, the average UK GDP per head id £12,548.

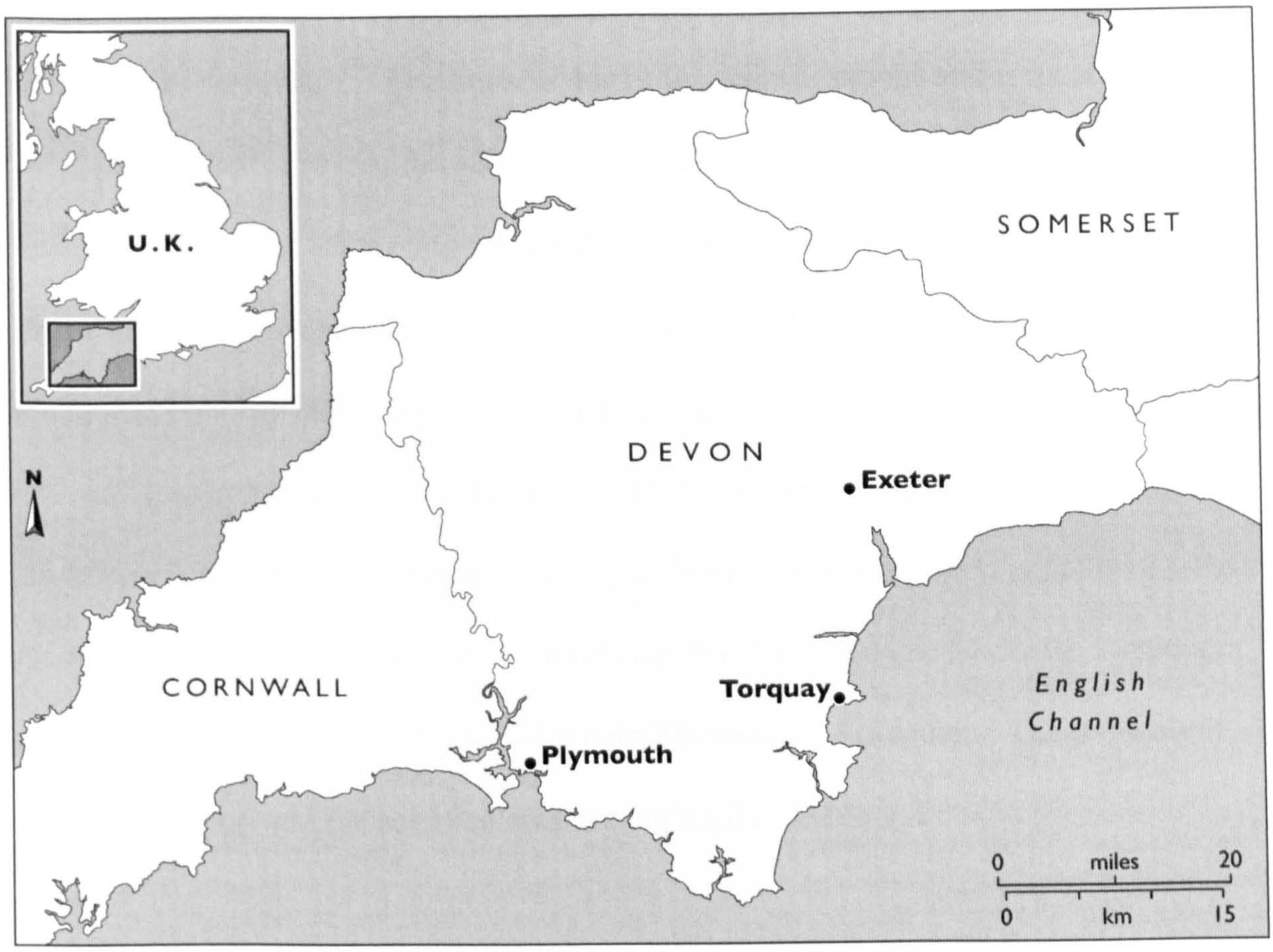

Figure 3.5 Map of Sample areas in Devon

Country Population	England	58,789,194	(2001)
	Spain	41, 286,390	(2004)
Region Population	Devon	704,493	(1991)
	Malaga	1, 300,560	(2001)
City Populations	Plymouth	241,633	(2001)
	Torbay	122,855	(2001)
	Exeter	101,395	(2001)
	Malaga	534, 207	(2001)
	Antequera	49117	(2001)
Population aged 10-19	Devon	85, 200	(1991)
	Malaga	68, 507	(2001)

Table 3.4 Population Information for Case Studies

(*Junta Andalucia* 2004; National Statistics (2001); Urban Audit 2001; World Bank 2004)

The *comunidades autonomas*[26] which make up Spain are officially distinct in culture, ethnicity, and language[27]. Andalusia is one of the largest regions and is located on the Southern coast. It is one of the less developed areas of the EU with a GDP per capita less than 75% of the EU average (Casa 2006) and for this reason attracts large amounts of EU funding. It is comprised of eight provinces[28] including Malaga (Figure 3.6). Malaga's economy is based primarily on tourism, construction, agriculture and services, with some light industry in electronics and mobile phones. Unemployment across Andalusia is the highest in Spain, reaching 21% in 2001 (*Junta Andalucia* 2004; Urban Audit 2001). Within Malaga, the main urban centres are Malaga, Marbella, Antequera and Ronda. Participants were located within Malaga and Antequera. The population figures for Spain and the sampled area are outlined in Table 3.4.

Figure 3.6 Map of Sample areas in Málaga

[26] Andalusia, Aragon, Asturias, Baleares, Ceuta, Canarias, Cantibria, Castilla-La Mancha, Castilla y Leon, Cataluna, Communidad Valencian, Extramadura, Galicia, La Rioja, Madrid, Melilla, Murcia, Navarra, Pais Vasco.

[27] The following languages are officially recognised in Spain: Castilian Spanish (recognised nationally), Catalan, Galician and Basque (recognised regionally).

[28] Almeria, Cadiz, Cordoba, Granada, Heulva, Jaen, Malaga and Seville.

These particular locations were chosen as they are not dissimilar in size and population and many of the characteristics which make them distinct within their national context (economic status, reliance on agriculture and tourism sectors and proximity to coastal environment) are representative. Devon and Malaga are nevertheless distinct geographically, culturally, socially and politically and, as with any regional case study research, an element of randomness remains. However, both the global requirement of sustainability and the nature of case study research: defining topics broadly, covering contextual conditions and the phenomenon under study and relying on multiple sources of evidence (Yin 1993; 1994; 2003), suggest that studying public interaction with sustainability in multiple contexts is important both in furthering understanding salient issues and developing and strategies to ameliorate them.

3.4 Sampling

Descriptions of the sampling procedure are given separately for each location beginning with Devon.

(i) Devon

Sampling in Devon took place within its three major urban areas of Plymouth, Torbay and Exeter (Figure 3.5), and participants were drawn from secondary and FE institutions. Students between the ages of 13 and 18 were selected and were split into two age groups:13-13 and 17-18 years to evaluate the influence of level of education and increased level of personal agency (associated with increasing years (Mathews 1986)) on the themes identified in Figure 3.1.

All public secondary, grammar and FE institutions within each local council area were contacted by obtaining institutional details from the telephone directory. Head of year for years 9, 10, 12 and 13 were contacted by letter explaining the research project and

asking for their co-operation. Data collection took place between October and December 2003. Participation rates are shown in Table 3.5

Devon	Contacted	Participated	% Sample
Plymouth	13	7	53%
Torbay	7	2	28%
Exeter	5	1	20%
TOTAL	**25**	**10**	**40%**

Table 3.5 Participation Rate for Devon

Schools which responded positively were sent copies of the interview rubric and a questionnaire before final agreement to participate was established and access to students arranged. The data was collected in two stages; the first was the completion of the questionnaire which was administered remotely. Schools were sent packs for each participating student, the contents of which are listed in Figure 3.7. The second was to undertake interviews and focus groups with the same students who completed the questionnaire. This normally took place within two weeks of participants completing the questionnaire. Each institution provided an office or classroom for the interview or focus groups to take place. Most of the sessions were restricted by the school timetable to about one hour maximum per lesson; this was sufficient time for the core questions to be asked and for extended discussion of salient topics.

Packs included:

A letter of introduction to the student describing the research and participation process

A consent form for students to complete and return

A letter of introduction to the students' parental guardians introducing the research project

A consent form for parental guardians to complete and return

The questionnaire, to be self-administered by students and collected when the interview or focus group sessions took place

(All available in appendices 1-8)

Figure 3.7 Packs for Students in Devon and Malaga

In recruiting individual students to participate, the final choice was left to the discretion of the school contact. However, in each school a sample was requested which represented both genders and a range of abilities and interests. Different schools recruited students in different ways. Some chose high achieving pupils and other pupils were preceded by warnings about attitude, concentration and behaviour. Some schools provided a more even mixture of personalities. The schools which participated varied from grammar schools for selected students[29] to those serving lower social economic areas. Overall, this strategy enabled a snapshot of different lifestyles, living conditions and opportunities which provided a sample which was representative of the myriad conditions in which teenagers live out their daily experiences. Descriptions of each participating school (school type, number of students, details of school contact, how students were sampled and other comments) can be found in appendix 10.

[29] Grammar schools typically intake only the most academically able students (top 10-25%).

The sample in Devon was originally stratified by age, gender and educational ability, all of which have been identified in previous work as contributing to environmental concern (although studies have disagreed to the extent and even direction of influence Dwyer 1995; Palmer 1998) (Table 3.6). Students of both sexes completed the questionnaires and took part in the interviews and the focus groups (these consisted of same and mixed sex groups). Ability proved difficult to ascertain. Participants were asked in the questionnaire which stream (ability) they were in for three core subjects; English, Maths and Science. However, this proved difficult to conceptualise as different schools had different systems for streaming students and this was further compounded by the tendency of many participants to simply tick the boxes rather than to indicate the set. As ability was also difficult to ascertain in the Malagueño sample, the total sample was not ultimately stratified by ability.

Age	Sex	Interviews	Focus Groups	Questionnaires
13-14	Male	5	6	50
	Female	6	3	31
	Mixed Sex	-	2	-
	TOTAL 13-14	**11**	**11**	**81**
17-18	Male	2	0	10
	Female	1	1	22
	Mixed Sex	-	5	-
	TOTAL 17-18	**3**	**6**	**32**
	TOTAL Devon	**14**	**17**	**113**

Table 3.6 Devon Sample Totals

(ii) Malaga

Originally, the Malagueño sample was to include schools from the three major urban

areas of Malaga, Antequera and Ronda within Malaga province (Figure 3.6). However, the schools approached in Ronda were unwilling to participate therefore the final sample was obtained from Malaga and Antequera. These locations were chosen as being representative of the region and able to provide a broad selection of schools and students from different socio-economic backgrounds. Within the Spanish school system there are three main types of school. Privately funded schools make up the minority and were not included in the sample (private schools were not included in either location to reduce variability in educational and socio-economical influences). The remaining two types of schools, publicly funded state schools and '*Concertados*' (where nominal fees are payable but the schools are also funded by the local government) were used to source participants. Although they have no equivalent in the UK, *'Concertados'* were included since their presence throughout Spain is common enough to consider them mainstream in education provision.

All *Institutos de Educacion Secundario* in the main Malaga area and Antequera were contacted by letters addressed to *El Director/ La Directora del Estudios* introducing the research and asking for their co-operation (Appendix 6). The response rate for schools is in Table 3.7. Contact information for schools was obtained from the *Ministro de Educacion y Cultura* website (www.mec.es).

Malaga	Contacted	Participated	% Sample
Malaga	65	5	7%
Antequerra	5	1	20%
Ronda	5	0	0%
TOTAL	**75**	**6**	**8%**

Table 3.7 Participation rate in Malaga

Schools which agreed to participate were sent a Spanish language version of the packs described in Figure 3.7 and arrangements were made to carry out the data collection which took place between February and May 2004. All questionnaire respondents also took part in the interviews and focus groups. Descriptions of each participating school (school type, number of students, details of school contact, how students were sampled and other comments) can be found in appendix 10.

In line with the Devon data collection the sample was stratified by age and sex. Educational ability again proved difficult and contentious to ascertain as none of the schools in the sample streamed students by ability. Again the only indicator of ability was teachers' subjective opinion, which was not always available. As a result, the Malagueńo sample could not be stratified. Schools provided a classroom or the library for interviews and focus groups to take place. Some of the sessions in the Spanish sample lasted longer than an hour as the schools did not restrict access to timetabled class duration. However, the majority of the events took around an hour and none took more than 2.5 hours. There is a marked difference in the levels of response achieved in the two locations (Tables 3.5 and 3.7). Several schools in both locations gave negative responses, however a large percentage of the schools contacted in the Malaga (90%) area did not reply despite being re-contacted on two further occasions. There is no known reason for this low reply rate. Within the schools that participated, the sampling of students worked as it did in the Devon sample. Often access was granted through a single gatekeeper in which case it was mainly to their own classes.

The final sample totals for Devon and Malaga are presented in Tables 3.6 and 3.8. Focus groups averaged at 8 participants although this ranged from a minimum of three to a maximum of eleven.

Age	Sex	Interviews	Focus Groups	Questionnaires
13-14	Male	5	2	42
	Female	6	3	61
	Mixed Sex	-	3	-
	TOTAL 13-14	**11**	**8**	**103**
17-18	Male	1	1	9
	Female	2	3	7
	Mixed Sex	-	0	-
	TOTAL 17-18	**3**	**3**	**16**
	TOTAL Malaga	**14**	**11**	**119**

Table 3.8 Malaga Sample Totals

The sampling strategy for this thesis has focused on certain criteria; the population sampled are from two age referents (13-14 and 17-18 years old), are recipients of mainstream secondary and FE education and representative of different socio-economic status' and the sample was stratified by age and gender. Although there is danger of sampling bias at the point of recruiting schools (only those with interest agreed to participate), and in recruiting individual students (teachers were ultimately responsible for choosing students), the number of participants overall (n=232) and the emphasis of the question rubric on meaning and interpretation means that despite a lack of true representativeness (if this is ever achieved), the study generates a credible quantity of data which provide valuable insight about the relationship teenagers have with sustainability and pro-environmental behaviour.

3.5 Ethics

The ethical guidelines informing this research originate predominantly from the University of Plymouth's 'Ethical Principles for Research Involving Human Participants'. In line with these principles, informed consent was obtained from all participants and their parental guardians. Confidentiality was ensured by the use of a pseudonym for each participant, and all participants were advised of their right to withdraw from the research process at any point. An enhanced level criminal records check was obtained from the UK based Criminal Records Bureau (CRB) and available for inspection by school staff, parents and participants.

These ethical precautions were taken with a common sense approach to undertaking research with teenagers as advocated by (Kvale 1996:35). 'The interviewer should be conscious of the interpersonal dynamics within the interaction and take them into account in the interview situation and in the later analysis of the finished interviews'. The ages of the sample, 13-18 years included both adults and young children and it has been noted that younger teenagers can be anxious when faced with a one-to-one situation with an unfamiliar adult (Matthews *et al.* 1998). To minimise anxieties interviews began by asking the participant to talk a little about themselves, acclimatising them to the interview-interviewee relationship. Miller and Glasner (1997) argue that building rapport is essential to minimising the impact of social distance on the interviewee. This involves encouraging the interviewee to feel comfortable and competent to talk freely in the interview. All participants were offered the opportunity to ask questions about the research at the end of each session.

3.5.1 Language, Power Relations and Social Distance

The ethical dimensions of research that needed to be considered especially carefully when researching teenagers (amongst other vulnerable groups) were the effects of comprehensible language and power relations. These are significant in any research but particularly so with younger participants who can be considered vulnerable.

(i) Language

The data collection was carried out in English and Spanish and throughout, the language used to ask questions and discuss ideas remained clear and comprehensible to ensure participants were not excluded by inappropriate language. Any questions, terms or concepts which emerged as difficult for participants to understand or discuss were either re-formulated or dropped from the interview and focus group schedule.

In terms of the bi-lingual element of the study the author is English but has learnt Spanish informally since 1996 and is a proficient speaker; however, she has little experience reading and writing in Spanish. Subsequently, although all written texts in English were prepared by the author, the Spanish texts were prepared by the author and a Spanish speaking assistant. The interviews and focus groups were undertaken by the author without any external assistance but transcription of the Spanish interviews and focus groups was undertaken by an Argentine national and native Spanish speaker. Participants in Malaga were encouraged to indicate when they had not understood the researcher. These incidences were confined to the first few interviews, after which the author became comfortable with the Malagueńo dialect and local colloquialisms. A Spanish speaking assistant was available to help with the non-statistical content analysis of the interview and focus group data but the author became adept at this and able to undertake the majority of this work.

(ii) Power Relations

Research with children and teenagers often stresses the centrality of an adult-child dichotomy of power relations characterised by between-ness and difference. Removing or reducing the impact of these characteristics is typically addressed through the adoption of open, empowering and participatory research relations and practices (Beresford 1997; Holt 2004; Weller 2006). It was therefore made clear to participants from the outset that the research was consultatory ensuring participants were aware their contributions would inform knowledge making but that they would only be party to generating data. It was furthermore made clear that the researcher considered them to be competent social agents and that their own definitions, representations and categorisations would be central to analysing the data and formulating findings. Such clarifications are important when the usual power relations are reinforced by generational status (Hill 2006; Holt 2004).

3.5.2 Limitations

There are several common critiques of qualitative research. It is often criticised for ontological individualism; its over-reliance on interpersonal interactions without relating them to structure, for epistemological idealism in its rejection of objective knowledge and for polluting the research-researched boundaries with personal involvement in the research process (Muntaner and Gomez 2003). Unsurprisingly therefore, criticisms of qualitative methods also exist and encompass issues of social desirability bias (SDB), representativness and replication not to mention those of scale and expense.

In the case of this study the general critiques of qualitative methods need to be taken into account. In using semi-standardised interviews and focus groups there is always the danger of variance in the questions asked, of drifting off topic and that any subsequent interpretation of the data may be less robust than that generated by other methods. In this case it was further relevant that many participants had little practice at interview situations or of talking about the environment and perhaps more time to prepare would have produced different responses. There were also differences within and between the two populations in those participants who were confident and able to interact more easily with the research process than others and this inevitably had a result on the conversation and outcomes.

Despite these criticisms, there are numerous reasons why qualitative research into perceptions of sustainability and pro-environmental behaviour in this age group is valuable. In general terms, there is a lack of quantitative or qualitative research on this age group outside of a pedagogical context suggesting a lack of background knowledge or data with which to generate research hypotheses, two issues which qualitative research is well-equipped to ameliorate (Muntaner and Gomez 2003). Furthermore, notwithstanding criticism of ontological individualisation there is empirical evidence and academic support of the situatedness of knowledge which is relevant to exploring the impact of power relations between adults and teenagers for participation in pro-environmental behaviour, and finally, because qualitative approaches offer the potential for representing human agency; initiative, language and emotion, processes which are of critical interest to this study (Froggat and Chamberlayne 2004).

Finally, it should be noted that the views of teenagers in Devon and Malaga cannot be taken as representative of teenagers in other locations. This had consequences for theory

which can have only limited applicability until applied successfully in additional situations through the process of analytical induction.

3.6 Summary

This chapter has summarised the methodology used to structure and undertake this research. In an effort not to replicate traditional ways of conceptualising influences on environmental attitude and behaviour, and to offer an alterative framework in which to explain those components, this research is grounded in qualitative assumptions of how the social world can be studied, and seeks to understand the life-worlds of participants in their own words using a mixed methods approach.

By considering the methodological frameworks utilised in other research, the approach adopted here is beneficial in two ways. Firstly, it builds on existing qualitative research by expanding upon the subject focus of previous work. Second, it provides an opportunity for the opinions of teenagers to be expressed in their own words, which is pertinent both in terms of their less powerful position in society and the research process itself. In applying this methodology to the context of teenagers, special considerations have been given to the ethical principles that guide researching them, ensuring a comprehensible, open and honest approach to data collection which offers the opportunity for participants to ask questions and comment upon the research.

The chapter also introduces the case studies by providing an overview of England and Spain in the context of public awareness of sustainable development. Through descriptions of EU policies to raise environmental awareness, national approaches to ESD, and regional economic and social characteristics, it has clarified the geographical contexts in which the sample populations used in this study exist. Post-materialism has

been used as a framework to conceptualise differences (and likenesses) between perceptions of, and approaches to, environmental sustainability in young people in Devon and Malaga. Although this study is *not* an investigation of post-materialist perspectives per se, post-materialism is useful in explaining the advance of environmentalism in Western societies and provides justifications for the choice of case studies. With the methodology established, chapter 4 presents the analysis of the questionnaire data. The qualitative data are then evaluated in chapters 5 and 6.

Chapter 4

Statistical Analysis of Questionnaire Data

4.0 Introduction

Chapter 4 presents the results from the questionnaire data generated to accompany core interview and focus group material (discussed in chapters 5 and 6). Each individual participating in the qualitative sessions completed a questionnaire in the two weeks prior to the interview session. The questionnaire had several aims: to gain a basic understanding of the socio-demographic identity of those participating in the study; to describe behaviour patterns for transport and media use; to gauge respondents' level of exposure to ESD; and to determine what kinds of events and processes influenced environmental perception, concern and behaviour.

As the questionnaire was designed to accompany the core qualitative material, the data generated indicates general trends which compliment the interviews and focus groups. Importantly, the questionnaire only asks briefly about participation in selected pro-environmental behaviours. This is because providing a list of behaviours would dictate which behaviours were deemed to be important, whereas the focus of the study is on respondent perception of pro-environmental behaviours[1]. This method also helped to reduce SDB and over-reporting of participation in behaviour (Jurin and Fortner 2002; Ollie *et al.* 2001; Tanner 1980; chapter 3).

The chapter focuses on demonstrating difference and similarities in trends between Devon and Malagueño respondents but also investigates the influence of gender, age and social class on behaviour. It is structured into six sections; section 4.1 describes the

[1] Behaviours are discussed further in chapters 5 and 6.

general characteristics of the respondents in terms of age, gender, social class, family composition and housing tenure. Section 4.2 discusses the data generated for general behaviours relevant to teenagers' roles within the family and pro-environmental behaviours: transport and media use, participation within family decision making and use of open spaces. Section 4.3 then examines lifestyle indicators used to gauge the extent of respondents' direct participation in pro-environmental behaviours; vegetarianism; purchase of green goods; membership of environmental NGOs and donation of money and time to environmental causes. Section 4.4 explores respondents' experiences of ESD, namely breadth of ESD in the curriculum, levels of environmental knowledge, and the influence of educational influences on environmental development. Section 4.5 then explores a range of influences which can affect respondents' feelings about the environment such as parents, friends, teachers and media. Section 4.6 reviews the chapter findings. Although at points throughout the chapter explanations for the observed trends are proposed, the bulk of the theorisation takes place in subsequent chapters when the questionnaire, interview and focus group data are analysed and theorised as parts of a whole.

It is important to point out at this stage the analyses used and the types of inference possible are constrained by the data types. The majority of the data are nominal and ordinal with limited interval data. Therefore Chi square[2], Mann Whitney and Spearman Correlation[3]are used, while occasional use is also made of Mean differences as these do not require interval or normally distributed data.

[2] Reported as X^2 (df, n) = X, P.

[3] Only results with a correlation of >0.400 and above, and p<0.01are considered significant (indicated by **). This is because the large size of the data set meant that even quite low correlations produced p<0.05 results; therefore there was a need to provide a subjective filter to focus on the most significant relationships.

4.1 General Description of Respondents

4.1.1 Age Distribution

The total sample consisted of 232 individuals, 113 (49%) in Devon and 119 (51%) in Malaga. The sample was sourced from two age groups; 13-14 and 17-18 years old, and was spread over four school year groups (Table 4.1).

Age Group	Year Groups			
	Devon		Malaga	
13-14 years	Year 9	Year 10	Eso 2	Eso 3
	53.1%	14.2%	84%	1.7%
17-18 years	Year 12	Year 13	Bachillerato 1	Bachillerato 2
	15%	13.3%	8.4%	5.9%

Table 4.1 Age Distribution by Year Group

The data shows there is difference in the distribution of respondents between the two locations by age group ($X^2(1, n= 232) = 8.093, p<0.05$), indicating that the lower age group is better represented overall. This uneven representation of the two sample groups was dictated by restricted access to the 17-18 year olds due to their academic commitments. This has obvious implications for representativeness.

In the interviews and focus group sessions those from the 17-18 age groups were asked in what ways they felt their views about the environment and participation in pro-environmental behaviours had evolved as they grew up. Possible causes, including the influence of ESD were then discussed.

4.1.2 Gender Distribution

The sample was made up of 48.7% males and 51.3% females and Chi-square analysis revealed no significant variation between male and female respondents by location, ($X^2(3, n= 232) = 3.346, p=0.67$).

4.1.3 Social Class

Social class was generated using the highest social class, as indicated by occupational class for mother or father[4] (Table 4.2). Chi-square analysis revealed no significant variation between social class for Devon and Malaga (X^2 (3, n=220) = 8.312, p= 0.40). However, Table 4.2 demonstrates that difference did exist between categories in each location with less representation of higher social-economic groups in both cases. This difference was used in seeking and understanding relationships evident within the questionnaire data but was less applicable when undertaking the interview and focus group sessions, as these were not stratified by social class.

Location	N	Blue Collar Unskilled	Blue Collar Skilled	White Collar	Not Economically Productive	Total
Devon	104	36.5	32.7	26.9	3.9	100
Malaga	116	50.0	35.3	14.7	0.0	100

Table 4.2 % of Respondents in Selected Social Class by Location

4.1.4 Family Composition

Family composition was constructed through two variables, 'how many adults' and 'how many children' at home. The data shows that the difference in number of adults at home is significant (X^2 (4, n=231) = 15.768, p= 0.03) (Table 4.3), with a mean number of adults in Devon of 2.14 and 2.49 in Malaga. It is also noteworthy is that 17% of the Devon sample originated from one parent families compared to only 4.2% of those in

[4] This is a crude measure and can only be used as a rough indication of social class.

Malaga. There was no significance found for the number of children at home (X^2 (5, n=229) = 2.200, p= 0.821).

Location	N	Number of Adults at home					Total
		1	2	3	4	5	
Devon	112	17	59.8	15.2	8.0	0	100
Malaga	119	4.2	57.1	26.9	9.2	2.6	100

Table 4.3 % of Number of Adults at Home by Location

4.1.5 Housing Composition

Housing composition was assessed using two variables; 'housing tenure' and 'if there was a garden at home' (Table 4.4). When analysed by location, Chi-square analysis for housing tenure was significant (X^2 (4, n=231) =144.379, p<0.01), as was having a garden at home (X^2 (1, n=231) =96.075, p<0.01). A closer examination of the tenure data revealed that the Devon sample lived predominantly in semi-detached housing (41%), followed by detached housing (28%) and terraced housing (25%), with 92% of respondents having a garden at home. In Malaga the majority of respondents lived in flats (80%) and only 29% of the sample had a garden at home[5]. Clearly, housing tenure and garden provision is associated.

Location	Housing Tenure						
	Detached House	Semi-Detached House	Terraced House	Flat	Other	Total	Garden at Home
Devon	27.7	41.1	25.0	2.6	3.6	100.0	92.0
Malaga	18.4	5.9	5.0	67.3	3.4	100.0	29.0

Table 4.4 % of Respondents Housing Tenure and Garden at Home

[5] Apartment living is more commonplace across continental Europe than in the UK. Therefore, it cannot be assumed that this distinction reveals any trends associated with social class.

The evidence from the preliminary analysis suggests that the samples drawn from each location are similar, but not identical in socio-demographic identity. There is an equal representation of both genders and the majority of the sample is 13-14 years old. Despite the marked difference in housing occupation and the higher levels of single parent families in Devon, the data indicate an even distribution of social class. These findings mean that social variances which can affect views about the environment (van Liere *et al.* 1980) have been minimised in the sampling process.

4.2 Behaviour[6]

The behaviours analysed relate to transport, media use, participation in family decision making and use of parks. In the majority of studies on pro-environmental behaviour, it is considered a product of a range of influences. However, in this section, behaviours are used to enhance the description of respondents' lives. Their role as a product of influence is discussed in subsequent chapters.

4.2.1 Transport

The data for transport behaviour were generated through four questions. Respondents indicated how many cars and bicycles were owned by their household and specified how frequently they and their families used selected modes of transport. Spearman Correlation revealed no significant difference for numbers of cars owned per household between locations or by social class (Devon $p=0.281$, Malaga $p=0.137$). However, there was significant difference for bicycle ownership between locations (X^2 (1, $n=231$) = 14.102, $p<0.01$) with Devon households being more likely to own a greater proportion of bicycles (Table 4.5).

[6] It is important to note that the data represent unverified reported behaviour and may therefore over or under represent actual behaviour.

Location	% Car ownership	Mean no of cars	% Bicycle ownership	Mean no of bicycles
Devon	93.4	1.7	88.4	2.76
Malaga	92.4	1.92	80.7	1.69

Table 4.5 % of Ownership for Cars and Bicycles per Household

The frequency of the following transport types was also investigated: car/motorbike, bicycle, local buses, coaches, trains and walking[7]. The only significant variance for respondents was use of buses (X^2 (3, n=227) = 23.598, $p<0.01$), with higher use of buses daily and weekly in Devon[8]. Throughout the sample, trends for daily transport use were similar. Table 4.6 shows that respondents walk most frequently, followed by cars and then buses. Car use appears preferable to buses despite age restrictions on driving of 17 years in the UK and 18 in Spain. This preference for car use is well documented (Tanner 1999).

The data suggest that although household bicycle ownership is generally high throughout the sample (84.4%), it is not a preferred mode of travel. The Devon households had highest ownership of 3+ bikes and were more likely to use them as a family unit (3, n=227) = 23.598, $p<0.01$) indicating that cycling may be a family-based leisure activity in Devon.

[7] Buses were defined as local with a travelling distance of 20 miles or less, coaches were used to travel more than 20 miles.
[8] Many children in Devon travel to school by bus which may have influenced these results.

Rank	Transport Type Devon	Transport Type Malaga
1	Walk	Walk
2	Car	Car
3	Bus	Bus
4	Bike	Coach
5	Coach	Bike
6	Train	Train

Table 4.6 Ranking of Daily Transport Use

4.2.2 Media

The data for media use were constructed through four questions. Respondents were asked to indicate how frequently they and their families used a list of media types. Respondents were then asked to specify which media they most trusted and to rank selected television genres according to frequency of use. There were significant differences between the two locations for frequency of use of media types by respondents (Table 4.7) and their families (Table 4.8).

These findings illustrate that the respondents and their families in Devon use newspapers, radio, the Internet and magazines more frequently than their Malagueño counterparts. There is also some correlation between respondent and family use of certain media types; in Devon television (0.597**, $p<0.01$) and newspapers (0.412**, $p<0.01$), and in Malaga television (0.610**, $p<0.01$), radio (0.526**, $p<0.01$), and Internet (0.581**, $p<0.01$). This demonstrates that although television emerges as the most trusted (Devon 59%, Malaga 58.1%) and frequently used, it is not the only media type commonly used by respondents and their families. This suggests that family units are utilising similar media communications which may inform them about environmental issues.

Media Type	Location	N	Mean	U	Asymp. Sig (2 tailed)
Newspapers	Devon	108	1.91	3496.500	p<0.01
	Malaga	117	2.84		
Radio	Devon	113	1.58	4827.500	p<0.01
	Malaga	118	2.15		
Internet	Devon	111	1.93	5316.000	p<0.05
	Malaga	118	2.36		
Magazines	Devon	113	1.96	5218.000	p<0.05
	Malaga	116	2.32		

(1=daily, 2=weekly, 3=monthly, 4= never, only significant relationships shown. Mean=minimum 1, maximum 4, lower score =higher frequency of use)

Table 4.7 Significant Differences in Frequency of use of Media by Respondent

Media Type	Location	N	Mean	U	Asymp. Sig (2 tailed)
Newspapers	Devon	108	1.34	4592.500	p<0.01
	Malaga	118	1.85		
Radio	Devon	109	1.35	4411.500	p<0.01
	Malaga	118	2.00		
Internet	Devon	108	1.99	5108.500	p<0.01
	Malaga	117	2.36		
Computer Games	Devon	110	2.64	5024.500	p<0.05
	Malaga	117	3.16		
Books	Devon	109	1.81	5108.500	p<0.05
	Malaga	118	2.22		

(1=daily, 2=weekly, 3=monthly, 4= never, only significant relationships shown. Mean=minimum 1, maximum 4, lower score =higher frequency of use)

Table 4.8 Significant Differences in Frequency of use of Media by Families

Television use was explored by specifying which television genres[9] respondents watched and their frequency of viewing. There was very little difference between the two locations for preferred television watching (X^2 (3, n=225) = 1.173, p=.759). Table 4.9 demonstrates the preference in both cases for entertainment-based programmes over educational ones or those with a possible environmental theme, with the noteworthy exclusion of news programmes, which were watched daily by 49% of the Devonian and 60% of the Malagueño sample. These results may indicate skewed viewing schedules, where items like the news and soap operas often have regular daily slots compared to other genres. When investigated for weekly use, information-based programmes fared better, appearing in the top four ranking positions and indicating that for many they were part of regular television watching. However, science and nature programmes were most likely to be watched monthly or less frequently in both locations. These preferences are supported by Spearman Correlation analysis, which demonstrated that that those who watched documentaries were more likely to watch science (0.457**) and nature (0.566**) programmes. This suggests that such programmes are watched out of personal interest. This is of note considering that, in general, European people prefer television and documentaries as sources of information about the environment[10] (Eurobarometer 2005).

The data about media demonstrate similarities in use across the sample. Media are primarily used for entertainment and, in general, material with a possible environmental component is less sought out as preferred media use (with the exception of the news). This indicates that although media are important disseminators of environmental information, this information does not necessarily attract respondents. This hints at the

[9] Soap operas, the news, science programmes, reality TV, nature programmes, music TV, drama serials, and documentaries.

[10] According to the Eurobarometer study (2000:20) Europeans (of 25 countries) prefer (in order) television, newspapers, documentaries, magazines, radio, and, finally conversations for sources of environmental information.

construction of youth as a period of leisure and entertainment, but more importantly, questions how strongly respondents' experience media as an influence on environmental perception when they prefer not to use it for this purpose. This suggests that the information they do glean from media is persuasive, yet is constructed in a way that teenagers perceive as uninteresting, supplementary or irrelevant. Therefore, despite the potential of media to provide information about environmental issues, the majority of teenagers who participated in this study were only passively influenced and did not use media to actively seek out information.

Rank	Devon	Rank	Malaga
1	News	1	News
2	Soap operas	2	Music TV
3	Music TV	3	Soap operas
4	Drama	4	Reality TV
5	Reality TV	5	Drama
6	Nature programmes	6	Documentaries
	Documentaries	7	Nature programmes
8	Science programmes	8	Science Programmes

(Highest by frequency)

Table 4.9 Daily Television Use

The influence of television as an important disseminator and communicator of environmental information was also assessed. Morris and Schagen (1996) reveal how television was the main contributor to Year 11 student[11] opinions about the role of individuals in environmental matters, while Eurobarometer (2002) report high levels of influence attributed to television. The analysis of a Likert scale question on the

[11] Year 11 students in the UK are 15 and 16 years old.

influence of television[12] suggests that television fosters more influence for those in Malaga, with a mean of 1.38, than for Devon, with a mean of 0.90[13]. These results were confirmed significant by Chi-square analysis (X^2 (4, n=223) 17.548, $p<0.05$). Unfortunately, the design of the questionnaire prevented analysis of which programme genres are responsible for influencing respondents in this way.

4.2.3 Participation in Family Decision Making

Respondent's level of agency to participate in everyday decision making within the home was also investigated. This type of participation is an important component of environmental development, since many ESBs are located within the home (Bedford 2003; Hobson 2001). Respondents were presented with a list of domestic activities related to leisure (holidays, family outings and buying clothes) and routine tasks (waste disposal, transport use, energy use and food shopping) and asked to indicate if, and to what extent, they contributed to decision making about these activities.

For the sample as a whole, respondents reported that they were able to participate in family decision making about leisure-based activities more often than domestic activities (Table 4.10). However, when split, the results demonstrate significant differences between Devon and Malaga for four activities. For the leisure-based activities of holiday choices and family trips out, Devonian respondents reported higher levels of participation, whereas for the task-based activities of transport and energy use, the Malagueño sample experienced higher levels of participation (Table 4.11).

[12] Coding frame for influence question: +2= makes me care about the environment, +1 makes me feel concern for the environment, 0=don't know, -1=this does not make me care about the environment, -2=totally disinterested.
[13] Mean -2 - +2.

Activity	Mean	Mode
Clothes shopping	1.56	2
Family outings	1.41	2
Holidays	1.38	2
Grocery shopping	1.22	1
Transport use	1.17	2
Energy	1.15	2
Waste disposal	0.95	0

(0=no, 1=sometimes, 2=yes)

Table 4.10 Ranking of Means for Participation in Family Activities and Tasks

Activity	Location	N	Mean	Mode	U	Asymp. Sig (2 tailed)
Clothes Shopping	Devon	111	1.65	2	5645.000	p=0.033
	Malaga	118	1.47	2		
Holidays	Devon	110	1.48	2	5402.000	p<0.01
	Malaga	118	1.29	1		
Family Outings	Devon	109	1.53	2	5030.000	p<0.05
	Malaga	118	1.29	1		
Food Shopping	Devon	109	1.17	1	5983.500	p=0.314
	Malaga	118	1.26	1		
Waste Disposal	Devon	108	1.07	1	5302.500	p=0.021
	Malaga	118	.84	0		
Transport Use	Devon	111	.95	0	4686.000	p<0.01
	Malaga	118	1.38	2		
Energy Use	Devon	109	.69	0	2929.000	p<0.01
	Malaga	118	1.58	2		

(0=no, 1=sometimes, 2=yes)

Table 4.11 Participation in Family Decision Making about selected Activities

These differences in participation suggest that for the total sample leisure-based activities are deemed preferable over task-based activities for teenagers, a finding

supported by other literature describing the current construction of Western youth as a time of leisure and apart from adult responsibilities (Griffin 1993; James *et al.* 1998; Valentine 2000). This is further supported by the low influence of friends on environmental perception; environment and sustainability are not favoured by teenagers as socially interesting or relevant (section 4.5).

When analysing agency variables by gender using Mann Whitney, only transport was found to be significant ($p<0.01$), with a mean of 0.95 for males and 1.37 for females. Analysis by age group revealed that clothes shopping was significant ($p<0.01$), suggesting that the older age group participated more in personal clothes shopping. This is to be expected as teenagers will normally take greater responsibility for clothing as they develop. No significance was found for social class.

4.2.4 Use of Parks

The use of outdoor areas has been deemed important in research about influences on pro-environmental behaviours (Palmer and Neil 1994). Considering the variance in garden space between the locations, provision of parks was analysed. Having a park close to home (within walking distance) was relatively evenly distributed between the two locations (Devon 92%, Malaga 89%), as was their use (91.8% in Devon and 82.4% in Malaga). Parks were investigated for a range of uses, of which playing sports (X^2 (1, n=225) = 25.163, $p<0.01$), pets (X^2 (1, n=214) = 24.683, $p<0.01$), and gardening (X^2 (1, n=213) = 30.003, $p<0.01$) were most significant, with Devonian respondents reporting higher usage.

4.3 Lifestyle Indicators

To gauge the extent to which respondents participated in pro-environmental behaviours requiring a conscious lifestyle commitment, questions were asked referring to vegetarianism, the purchase of free-trade and organic products[14], awareness and membership of NGOs, and donations of money and time to environmental causes. Although this does not provide a comprehensive list of this type of behaviours it is likely that they are motivated by a discursive commitment to environmental sustainability rather than embedded within habit or other motivation[15].

4.3.1 Vegetarianism

Levels of vegetarianism amongst respondents were low across the sample (Devon 3.4%, Malaga 3.9%) with no significance for respondents between the locations (X^2 p=0.665). For family vegetarianism there was a significant difference (X^2 (1, n=231) =14.102, p<0.01), with 13.4% of respondents families in Devon containing at least one vegetarian (Malaga 0.8%).

4.3.2 Purchase of 'Green' Goods

The family purchase of green goods differed significantly between the two locations (X^2 (2, n=232) = 76.428, p<0.01) with a mean of 0.96 for Devon and 0.89 for Malaga[16]. This indicates that the Devonian sample purchased green products more frequently. This finding is supported elsewhere; the 2005 Eurobarometer survey reported that Spain

[14] Operationalised collectively under 'green goods.'
[15] Hobson (2001) describes much pro-environmental behaviour as operating below practical consciousness and therefore 'hidden' from everyday decision making. The decision making chosen to be operationalised in the lifestyle index is more likely to involve active consideration of the environment. Also see Stern (2000) for a comprehensive categorisation of behaviour types (Table 2.1).
[16] Coding 0=no, 1=sometimes and 2=yes.

purchased the lowest volume of green goods[17] in the EU25. There was no significance found for the purchase of green goods and social class.

4.3.3 Awareness and Membership of NGOs

Respondents were asked if they were (i) aware and (ii) members of five environmental organisations: three international high profile organisations (Greenpeace, Friends of the Earth (FoE), and the World Wildlife Fund (WWF)) and two national ones (Table 4.12). The results for the international organisations demonstrated difference between the two case studies. The significance between locations was X^2 $p<0.01$ for all international NGOs, with higher levels of awareness and membership in Devon. Greenpeace was the only NGO credited with widespread awareness in both locations. There was no significance between social class and membership of NGOs.

NGO	Location	% Awareness	% Member	% Family Member
Greenpeace	Devon	86.6	1.8	1.8
	Malaga	61.3	0.0	1.7
FoE	Devon	72.1	7.2	0
	Malaga	10.9	0.0	0.0
WWF	Devon	83.0	5.4	3.6
	Malaga	15.1	0.8	0.8

Table 4.12 Awareness and Membership of International NGOs

The two national organisations in Devon were the Royal Society for the Protection of Birds (RSPB) and the National Trust (NT)[18] and in Malaga, *Sociedad Espana de Orniotologia* (SEO)[19] and ADENAT[20]. Although not directly comparable they are

[17] 29% of the Spanish population indicated that they would 'purchase ecologically friendly products for daily use even if [they] have to pay a little more for them' (Eurobarometer 2005:49). This ranked 25/25. The UK scored 29%, ranking them 20/25.
[18] The NT is concerned with the conservation and preservation of British heritage and countryside.
[19] SEO is a bird awareness and conservation society.
[20] The Nature Defence Association for Spain.

useful in highlighting the difference in general awareness of national NGOs in the locations (Table 4.13).

NGO	Location	% Awareness	% Member	% Family Member
NT/ ADENAT	Devon	69.0	13.3	8.8
	Malaga	3.4	0.0	0.0
RSPB/ SEO	Devon	71.4	8.0	2.7
	Malaga	4.2	0.0	0.8

Table 4.13 Awareness and Membership of National NGOs

Membership of national NGOs mirrored the trends observed for international NGOs, with those in Devon being more likely to belong to such an organisation. Membership of national organisations was also higher than for international organisations in Devon and respondents were more likely than their family to belong to such an organisation.

4.3.4 Donation of Resources to Environmental Causes

Respondents were asked to indicate whether they had ever donated money or time to an environmental cause. Table 4.14 shows that Malagueño residents were more likely to donate time, the majority of which was donated for tree planting, a common school activity (Calvo *et al.* 1998). However, Devonians were more likely to donate money, particularly to animal causes. This may be due to the higher levels of awareness and membership of NGOs in Devon and a consequent raising of the Ipsative opportunities to donate money. Importantly however, Devonians also had higher amounts of money for personal use (Table 4.15) which makes monetary donations less expensive in relative terms and perhaps preferable to spending time on environmental projects. It was not possible to ascertain whether monetary contributions were regular or one-off events.

	Donated Time	Donated Money
Devon	34.3%	71.9%
Malaga	65.7%	28.1%
X^2	X^2 (1, n=228) = 7.360, $p<0.05$	X^2 (1, n=230) = 17.002, $p<0.01$

Table 4.14 Donation of Time and Money to Environmental Causes

	£ per week Mean	£ per week Mode
Devon	19.17	10.00
Malaga	5.35	3.41

Table 4.15 Personal Disposable Money per week[21]

4.3.5 Lifestyle Index

The data for vegetarianism, purchase of 'green' goods, membership of NGOs, and donation of time and money were collated to provide a lifestyle index[22]. The index demonstrated that 68.4% of the overall sample participated in one or more behaviour. Table 4.16 shows that Devonian respondents participated more in these behaviours whilst Table 4.17 illustrates the distribution of behaviour across the sample.

Lifestyle Choice with Possible Environmental Component	Location	N	Mean	Mode	U	Asymp. Sig (2 tailed)
	Devon	112	1.37	1	5198.000	$p<0.005$
	Malaga	119	0.93	0		

Table 4.16 Lifestyle Index by Location

[21] The Malagueño responses were converted from Euro to at a rate of £1= € 0.68.

[22] Each respondent received a score of 1 for participation in each activity except the purchase of 'green products' which was coded 1=sometimes, 2=yes. Although the compilation of this index is subjective, it does provide a useful overview of the data.

No of Behaviours	Devon (n=112)	Malaga (n=119)
0	14.3	47.9
1	50.9	13.4
2	24.1	36.2
3	6.3	2.5
4	3.5	0.0
5	0.9	0.0
Total	100	100

(Vegetarianism, purchase of 'green' goods, membership of NGOs, and donation of time and money)

Table 4.17 % Uptake of Behaviour by Location

There was no significance for the index when analysed by gender (X^2 (5, n=231) = 7.082, p=.215) or age[23]. However, the distribution of behaviour for these variables is worth mentioning. Table 4.18 demonstrates that males participate more than females and that the majority of the sample only participates in up to 2 behaviours and Table 4.19 shows that the older age group participate slightly more[24]. However, the significant distinction is the high proportion of Malagueños' who either do not participate or participate in two behaviours, compared to the Devonians of whom 50.9% undertake only one.

Chi-square analysis confirmed significant variation in the results for social class (X^2 (15, n=219) 33.486 $p<0.05$). The difference in means for this variance is presented in Table 4.20, which demonstrates a linear relationship between social class and the lifestyle index in each location (with the unexpected exception of the non-economically

[23] By age group X^2 (5, n=231) = 10.439, p=.064.
[24] The Mode is the better figure to represent this as the sample population is skewed in favour of the younger age group.

productive group in each case[25]). These findings lend support to the proposals of Hawthorne and Alabaster (1999) that social class affects personal agency, and Boyce (2002), that as societies become wealthier, individuals have greater income and spare time to divert towards environmental concerns.

No of Behaviours	Male (n=112)	Female (n=119)
0	25.0	37.8
1	35.7	27.7
2	30.4	30.3
3	6.3	2.5
4	1.8	1.7
5	0.9	0.0
Mean	1.27	1.03
Mode	1.0	0.0

Table 4.18 % of Behaviour Uptake by Gender

No of Behaviours	13-14 yrs (n=176)	17-18 yrs (n=55)
0	35.8	18.2
1	27.7	43.6
2	29.5	32.7
3	5.1	1.8
4	1.1	3.6
5	0.6	0.0
Mean	1.10	1.29
Mode	0.0	1.0

Table 4.19 % of Behaviour Uptake by Age Group

[25] The high mean average for the non-economically productive group can be explained by the small number of respondents (which reduces the reliability of the mean), and the large standard deviation in the Devon sample, which indicates a large range of results.

Location	Social Class	N	Mean Lifestyle Index Score	Standard Deviation
Devon	Not Economically Productive	4	2.00	1.147
	Blue Collar Unskilled	38	1.18	0.730
	Blue Collar Skilled	33	1.42	1.1226
	White Collar	28	1.71	0.810
Total		**103**	**1.44**	**.977**
Malaga	Not Economically Productive	1	2.00	
	Blue Collar Unskilled	57	0.68	0.869
	Blue Collar Skilled	41	1.12	1.053
	White Collar	17	1.35	0.931
Total		**116**	**0.95**	**0.977**

Table 4.20 Means Comparison of Lifestyle Index by Social Class

Another immediately apparent feature of the index is the few numbers of pro-environmental behaviours undertaken across the sample. Although the Devonian sample reports more participation in behaviours overall, out of a possible score of 5, the mean averages were 1.37 for Devon and 0.93 for Malaga.

Sections 4.2 and 4.3 have discussed distinct behavioural typologies; routine low-level domestic behaviours and those which require a conscious commitment, as described in the lifestyle index (Hobson 2001; Shove 2000). The data for low-level behaviours indicate that Malagueño respondents participate more in transport and energy choices and this may be helpful in explaining the greater levels of environmental awareness, knowledge and concern reported by them (Table 4.34). Decisions about energy supply, transport use and waste management are important skills which are often not tackled explicitly in the formal sphere. They are also behaviours that are repeated frequently, familiarising the individual with pro-environmental behaviours and sustainability ideas.

The opportunity to participate at home therefore helps to nurture environmental development.

For behaviours located within discursive consciousness, the data shows a general low level of behaviour across the sample but Devonian respondents report higher levels of participation. This may be due to provision, for example, they are able to donate money to, and be members of, environmental NGOs due to the availability of NGO organisations in Devon. This may also be the case for the purchase of 'green' goods. From the behaviours collated in the lifestyle index, the Devonians ranked higher on green purchases, donation of money to NGOs, NGO membership and the Malagueños higher on donating time to environmental causes.

4.4 ESD

The next set of questions gauged the breadth of ESD provision in the school curriculum, self-reported environmental knowledge, and the influence of educational factors on respondents' feelings about environmental issues.

4.4.1 Breadth of ESD across the Curriculum

Respondents were asked to indicate from a list of twelve core school subjects which provided information about the environment. Results for this analysis are ranked in Table 4.21. For both Devon and Malaga geography, biology and chemistry are present in the top four ranking positions. However, in Devon geography ranks highest, suggesting that both the scientific and social aspects of ESD are taught, whereas the data for Malaga indicate the majority of ESD is taught through biology indicating a focus on scientific aspects of ESD. Also evident is the difference in percentage levels for ESD content, where Devonian respondents consistently reported higher levels of

ESD content. These results are confirmed using Chi-square analysis (X^2 (12, n=173) =57.681, $p<0.01$), with $p<0.01$ for the Mann Whitney test (Table 4.22).

Rank	Subject Devon	%	Rank	Subject Malaga	%
1	Geography	69.4	1	Biology	55.9
2	Biology	61.2	2	Geography	21.1
3	Citizenship	36.0	3	History	12.0
4	Chemistry	27.9	4	Chemistry	7.6
5	English	21.6	5	English	6.8
6	Physics	20.9	6	Physics	5.0
7	Art	20.2	7	Physical Education	3.3
8	IT	18.7	8	Art	3.1
9	History	13.5	9	IT	1.2
10	Physical Education	12.6	10	Drama	0.0
10	Design Technology	12.6	10	Design Technology	0.0
11	Drama	5.4	10	Citizenship	0.0

Table 4.21 Ranking of Subjects in which the Environment is Discussed

Location	N	Mean	Mean Rank	Sum of Ranks	U	Asymp. Sig (2 sided)
Devon	109	3.28	104.82	11436.00	1535.000	$p<0.01$
Malaga	64	1.19	56.48	3615.00		

(Mean=out of a maximum of 12 subjects)

Table 4.22 Breadth of ESD Provision in the curriculum

Table 4.22 indicates that ESD is discussed in a broader range of subjects for Devonian respondents than in Malaga. However, Table 4.23 demonstrates that respondents do not perceive a broad environmental basis within their respective curricula. Although the data should be treated with caution as they represent respondent perceptions rather than official curriculum content, many respondents recognised no ESD within their

education. Even if the data are unrepresentative, they suggest that communication of these topics is variable.

Number of Subjects	Devon	Malaga
0	14.7	26.6
1	6.4	46.9
2	22.9	17.2
3	17.4	4.7
4+	38.6	4.5
Total	**100**	**100**

Table 4.23 % of Respondents who Discuss the Environment in 3 or less Subjects at School

Respondents were asked to indicate which subject provided most information about the environment. Due to the national differences in curriculum design these data cannot be directly compared[26] but are useful for descriptive purposes. In Devon respondents elected geography (24%), biology (9.6%) and earth science (4.8%) as most informative, while in Malaga, the majority elected '*ciencias naturaleza*' (natural sciences) (44.7%)[27]. These subjects represent traditional fora used to communicate ESD.

4.4.2 Environmental Knowledge

Environmental knowledge was self-reported on a 5 point scale[28]. Table 4.24 shows that Malagueño respondents self-reported higher levels of environmental knowledge, a finding found significant by Chi-square analysis (X^2 (4, n=228) = 34.845, $p<0.01$). No significance was found when analysing environmental knowledge and gender (X^2 (4,

[26] Chapter 3 discusses educational and curricular differences between the two locations.
[27] A mixed discipline incorporating biology, chemistry, geography and geology, which focuses on physical rather than social approaches to environmental problems.
[28] The coding frame used was; 1=excellent, 2=good, 3=medium and 4=not good. Don't know (9) was omitted from Mann Whitney analysis as the higher figure would distort the results.

n=228) = 4.203, p=.379), age group (X^2 (4, n=228) = 5.896, p=.207) or social class (X^2 (12, n=218) = 4.937, p=.960).

Rate of Knowledge	Devon	Malaga
Excellent	1.8	7.7
Good	31.5	58.1
Medium	45.0	27.4
Not Good	14.4	0.0
Don't Know	7.3	6.8
Total	100.0	100.0

Table 4.24 % Rating of Self-Reported Environmental Knowledge

To accompany these data, awareness of a range of environmental problems was assessed. Table 4.25 demonstrates that overall awareness is high and that, in the majority of cases (90.9%), Malagueño respondents reported higher levels of awareness.

There were significant differences in awareness for five of these issues (Table 4.26) where, in each case, Malagueño respondents reported higher awareness. It is unlikely that these differences are entirely due to ESD, and alternative explanations certainly exist. Despite the emergence of a 'global environment' and 'global environmental problems' (Macnaughten 2003), many environmental issues are manifested at the local level (Rohrschneider 1988). In Spain, water quantity and desertification (arguably related issues) have been long-standing problems due to climate and intensive agriculture (CIA 2003; Jimenez 1999; Newman 2001). In Malaga in particular, the *Costa del Sol* resorts have caused considerable environmental pressure and, despite the designation of national parks and wildlife reserves, planning authorities have been reluctant to curb new development. It is likely, therefore, that local contexts play some part in raising awareness of these particular issues.

Topic	Devon (D)	Malaga (M)	Difference +ve= M>D -ve=D>M
Chemical Pollution	98.2	100.0	1.8
Sewage	97.3	97.4	0.1
Radioactivity	92.0	93.2	1.2
Ozone Depletion	94.6	98.3	3.7
Oils Spills	94.0	99.1	5.1
Loss of Wildlife	96.4	100.0	3.6
Litter	96.4	98.3	1.9
Overpopulation	94.6	94.0	-0.6
Loss of Rainforests	98.2	94.0	-4.2
Noise	91.1	97.4	6.3
Non-renewable Resources	95.5	95.7	0.2
Water Quantity	81.1	96.6	15.5
Pesticides	89.2	98.3	9.1
Acid Rain	91.0	94.9	3.9
Dogs Mess	91.9	99.1	7.2
Traffic Fumes	92.8	98.3	6.1
Greenhouse Effect	95.5	100.0	4.5
Desertification	70.3	93.2	22.9
Factory Fumes	94.6	98.3	3.7
House Building	88.3	99.1	10.8
Access to Countryside	82.0	95.7	13.7
Overdevelopment	86.5	94.0	7.5

Table 4.25 % Awareness of Environmental Issues by Location

Issue	% Awareness		X^2
	Devon	Malaga	
Water quantity	81.1	96.6	X^2 (1, n=228) = 14.018, p<0.01.
Use of pesticides	89.2	98.3	X^2 (1, n=228) = 8.187, p<0.05.
Desertification	70.3	93.2	X^2 (1, n=228) = 20.239, p<0.01.
House building	88.3	99.1	X^2 (1, n=228) = 11.650, p<0.01.
Access to countryside	82.0	95.7	X^2 (1, n=228) = 11.022, p<0.01.

Table 4.26 Significant X^2 Results for Awareness of Environmental Issues

4.2.3 Influence of Teachers and Education

The influence of teachers and education on respondents' feelings about the environment was explored. Tables 4.27 and 4.28 shows the results for these analyses and demonstrate that, in general, the influence of both teachers and education was stronger for Malagueño respondents, a finding confirmed by Mann Whitney analysis (Table 4.29). These variables were then correlated with other possible variables[29], and demonstrated higher correlations overall in Devon (Table 4.30), whereas in Malaga, the influence of education is strong in relation to other factors (Tables 4.29 and 4.30).

Strength of Influence	Devon	Malaga
Makes me care about the environment	33.3	52.2
Concern	28.7	29.4
Don't Know	20.4	13.4
This does not make me care about the environment	15.7	2.5
Totally Disinterested	1.9	2.5
Total	100.0	100.0

Table 4.27 Influence of Teachers on Respondents' Feelings about the Environment (%)

[29] Keeping pets, parents, religion, outdoors, organisations, media, travel abroad, environmental issues, friends and books.

Strength of Influence	Devon	Malaga
Makes me care about the environment	44.4	70.9
Concern	35.2	18.8
Don't Know	13.0	7.7
This does not make me care about the environment	7.4	0.9
Totally Disinterested	0.0	1.7
Total	100.0	100.0

Table 4.28 Influence of Education on Respondents' Feelings about the Environment (%)

Influence	Location	N	Mean	Mean rank	U	Asymp. Sig (2 tailed)
Teachers	Devon	108	0.76	98.76	4780.000	p<0.01
	Malaga	119	1.26	127.83		
Education	Devon	108	1.17	97.31	4623.000	p<0.01
	Malaga	117	1.56	127.49		

(2= makes me care, 1= concern, 0= don't know, -1= does not make me care, -2=totally disinterested

Table 4.29 Influence of Teachers and Education on Respondents

Relationship	Devon	Malaga
Parents and Teachers	0.607**	0.411**
Education and Outdoors	0.533**	0.384**
Education and Teachers	0.468**	0.378**
Education and Books	0.414**	0.194*
Education and Parents	0.445**	0.229*

Table 4.30 Correlation of Teachers and Education against other Possible Influencing Factors[30]

The consensus of research and policy thus far has recommended ESD delivery as a cross-curricular theme (Palmer and Neil 1994). However, there is little evidence of this in the sample, with the majority of ESD delivery taking place in three or fewer subjects.

[30] ** = sig.<0.01.

The Malagueño respondents reported receiving significantly less ESD than their Devonian counterparts; however, they reported higher levels of environmental knowledge, awareness and concern, and were highly motivated by teachers and education compared to other influences. One explanation for this may be that there are possibly more opportunities for experiential learning in Malaga[31], a process advocated by many experts as more effective than class-based education in encouraging emotional and practical engagement (Hammond and Collins 1993; Hart 1997; Hutchison 1998; Jones 2003; Palmer 1998; Palmer and Neil 1994; Scott and Gough 2003; Sterling 2001).

When exploring these results alongside other influences which combine to promote environmental sustainability[32], it emerged that despite experiencing higher levels of ESD, NGO presence and contact with media (variables known to induce higher levels of environmental knowledge, awareness, concern and participation in pro-environmental behaviours (Kolmuss and Agyeman 2002)), self-reported knowledge, awareness and concern were all lower for Devonian respondents (Table 4.34).

4.5 Influences upon Environmental Development

Respondents were asked to indicate on a Likert scale how a range of possible influences made them feel about the environment (Makes me care about the environment (+2)-totally disinterests me (-2)). Table 4.31 demonstrates that, in each case, the mean was higher for Malaga than Devon[33], suggesting that, in general, these influences made the Malagueño sample want to care for the environment and feel concern to a greater extent than their Devonian counterparts. However, Table 4.32 demonstrates that when the strength of influences were ranked, the order of ranking is similar, indicating that

[31] An example of which is tree planting.
[32] Others explored here are: environmental issues, environmental NGOs, travel abroad, books, friends and religion, although this list is not exhaustive (see Kolmuss and Agyeman (2002) for a concise discussion of influences).
[33] In most cases this was significant at $p<0.01$, no significance was reported for religion, outdoors and organisations. Significance for environmental issues was reported at $p<0.05$.

although Malagueño respondents claimed to be influenced more strongly by these factors, respondents from both samples drew on influences in comparable ways.

	Devon		Malaga	
Influence	Mean	Mode	Mean	Mode
Keeping Pets	0.92	2	1.62	2
Parents	0.88	2	1.50	2
Teachers	0.76	2	1.26	2
Religion	-.19	0	-.03	0
Outdoors	1.24	2	1.44	2
Education	1.17	2	1.56	2
Organisations	0.60	1	0 .69	2
Media	0.90	1	1.38	2
Travel Abroad	0.59	1	1.22	2
Environmental Issues	0.76	1	1.13	1
Friends	0.54	2	0.48	2
Books	0.56	1	0.60	2

Table 4.31 Mean and Mode for Influences on Respondent's feelings about the Environment

Correlation analysis (Table 4.33) revealed that, for the Malagueño sample, outdoors is the most frequently correlated variable.. This supports Palmer's (1992) conclusion that outdoor experiences were the most important influence on adult environmentalism. For the Devon sample, parents, education and books all figure prominently, with the most significant correlation being between 'teachers and parents', (see also Morris and Schagen 1996; Palmer and Neil 1994). There was no association of influencing factors with gender or social class, and only media proved significant when age groups were evaluated, indicating the younger age group (13-14 yrs) were more strongly influenced ($p<0.05$).

Rank	Devon	Rank	Malaga
1	Outdoors	1	Pets
2	Education	2	Education
3	Pets	3	Parents
4	Media	4	Outdoors
5	Parents	5	Media
6	Teachers	6	Teachers
	Environmental Issues	7	Travel Abroad
8	NGOs	8	Environmental Issues
9	Travel Abroad	9	NGOs
10	Books	10	Books
11	Friends	11	Friends
12	Religion	12	Religion

Table 4.32 Strength of Influence by Location (Ranked)

Concern for the environment was explored by presenting 22 items, from which respondents specified which issues they were (i) aware of and (ii) concerned about (Table 4.34). The data indicate that, in all but two cases[34], the Malagueño respondents reported significantly higher levels of concern for each issue. The results in Table 4.34 suggest that for the Malagueño sample, awareness of an issue resulted in concern for that issue. However, this was not the case for the Devon sample. The general consensus of ESD research is that awareness is a necessary, but not sufficient, component of environmental development (Kolmuss and Agyeman 2002) and is essential for emotional investment in environmental issues (Fliegenschnee and Schelakovsky 1998; Preuss 1991), yet here awareness appeared to facilitate an emotive response to a greater extent in Malagueño respondents.

[34] Loss of Wildlife; Radioactive Waste.

Correlation	Devon	Malaga
Teachers & Parents	**0.607****	**0.411****
Outdoors & Education	**0.533****	0.384**
Education & Teachers	**0.468****	0.378**
Education & Parents	**0.445****	0.392**
Environmental Issues & Organisations	**0.536****	0.246*
Friends & Parents	**0.589****	0.269**
Friends & Travel	**0.462****	0.172
Outdoors & Books	**0.404****	0.126
Books & Education	**0.414****	0.194
Books & Organisations	**0.452****	0.184
Education & Organisations	**0.511****	0.237*
Outdoors & Organisations	**0.434****	**0.420****
Outdoors & TV/Media	0.251**	**0.422****
Outdoors & Environmental Issues	0.392**	**0.513****

(Bold indicates significant results p>0.400, **=sig. <0.01, *=sig. <0.05)

Table 4.33 Correlation Relationships for Influences upon Environmental Development

There was little variance found by gender[35]; however, there was evidence of significant difference when analysed by age group (Table 4.35), with the younger group expressing more concern about noise pollution, water quantity, factory fumes, access to countryside and over-development. There was no correlation found between concern and social class.

[35] The only significant result was for gender and radioactive waste, where males were more concerned than females ($p<0.05$).

Issue	Devon % Awareness	Malaga % Awareness	Devon % Concern	Malaga % Concern	X^2 Sig. between Devon and Malaga concern
Chemical Pollution	98.2	100.0	53.0	82.0	p<0.01
Sewage Pollution	97.3	97.4	54.0	82.0	p<0.01
Radioactive Waste	92.0	93.2	50.0	63.0	p=.025
Ozone Depletion	94.6	98.3	54.0	88.0	p<0001
Oil spills	94.0	99.1	58.0	87.0	p<0.01
Loss of Wildlife	96.4	100.0	59.0	87.0	p=0.39
Litter	96.4	98.3	44.0	75.0	p<0.01
Overpopulation	94.6	94.0	31.0	61.0	p<0.01
Deforestation	98.2	94.0	58.0	81.0	p<0.05
Noise Pollution	91.1	97.4	17.0	89.0	p<0.01
Non-renewable	95.5	95.7	46.0	66.0	p<0.05
Water quantity	81.1	96.6	36.0	78.0	p<0.01
Pesticide use	89.2	98.3	31.0	74.0	p<0.05
Acid Rain	91.0	94.9	13.0	81.0	p<0.01
Dogs Mess	91.9	99.1	36.0	74.0	p<0.01
Traffic Fumes	92.8	98.3	43.0	79.0	p<0.01
Greenhouse Effect	95.5	100.0	45.0	75.0	p<0.01
Desertification	70.3	93.2	29.0	69.0	p<0.01
Factory Fumes	94.6	98.3	45.0	77.0	p<0.01
House Building	88.3	99.1	23.0	61.0	p<0.01
Access to Countryside	82.0	95.7	29.0	68.0	p<0.01
Overdevelopment	86.5	94.0	26.0	54.0	p<0.01

Table 4.34 Awareness and Concern for Selected Environmental Issues

Issue	Age Group	N	Mean	Mean Rank	U	Asymp. Sig (2 tailed)
Noise Pollution	13-14 yrs	176	0.48	121.65	3494.000	p<0.05
	17-18 yrs	53	0.23	92.92		
Water Quantity	13-14 yrs	175	0.58	120.95	3509.500	p<0.05
	17-18 yrs	53	0.34	93.92		
Factory Fumes	13-14 yrs	175	0.65	120.76	3541.500	p<0.05
	17-18 yrs	53	0.42	93.82		
Access to	13-14 yrs	175	0.52	122.28	3276.000	p<001
Countryside	17-18 yrs	53	0.23	88.81		
Overdeveloping	13-14 yrs	175	0.42	120.21	3639.000	p<0.005
Areas	17-18 yrs	53	0.21	95.66		

Table 4.35 Significant Concern for Issues by Age Groups

Table 4.36 presents the ranking of environmental concern by issue. The issues are annotated to differentiate between those which are local and globally constructed[36] and suggest that, in general, global environmental issues foster higher levels of environmental concern across the sample. The same 'global' issues were also ranked most important in each location (loss of wildlife, ozone depletion and oil spills). The prominence of sewage as the most concerning local issue may be due to the coastal location of the majority of the schools that participated. These findings suggest that the way respondents in each location make sense of environmental issues is similar, and, despite the regional and national differences in environment and environmental issues, global concerns predominate.

[36] Global here refers to problems which are caused in a different location to their effects, e.g. global warming. Local environmental problems are those where the cause and effect both take place in a local area and the causal link is identifiable. Some categories arguably satisfy both these criteria and have been labelled as such. This depends on local context.

Rank	Devon	Rank	Malaga
1	Loss of wildlife***	1	Ozone depletion**
2	Deforestation**	2	Oil spills**
	Oil spills**		Loss of wildlife***
4	Ozone depletion**	4	Chemical pollution**
	Sewage		Sewage
6	Chemical Pollution**	6	Deforestation**
			Acid rain**
7	Radioactivity**	8	Traffic fumes
8	Non renewable resources**	9	Water Quantity***
9	Greenhouse effect**	10	Factory fumes
	Factory fumes		
11	Litter	11	Greenhouse effect**
			Litter
12	Traffic fumes	13	Desertification***
			Dogs mess
			Noise
			Pesticides
13	Pesticides	17	Access to countryside
14	Dogs mess	18	Non renewable resources
	Water quantity		
16	Overpopulation**	19	Radioactivity**
17	Desertification**	20	House building
	Access to countryside		Overpopulation**
19	Overdevelopment	22	Overdevelopment
20	House building		
21	Noise		
22	Acid Rain**		

** denotes global environmental concerns

*** denotes global issues likely to be experienced on a local scale

Table 4.36 Ranking of Environmental Concern by Location

4.6 Summary

The findings highlight important distinctions evident in the data. It appears that Devonian respondents are more likely to experience environmental sustainability theoretically and virtually through education and media with less personal experience of pro-environmental behaviours than the Malagueño respondents. Although they reported higher visibility of sustainability in education and society, their experiences were contained within class-based learning and exposure to NGOs, rather than participation in activities. Malagueño respondents combined higher levels of knowledge, awareness and concern with the practice of pro-environmental behaviours at home as well as experiential learning at school

It is possible that Malagueño students were keen to please a foreign researcher and subsequently reported higher levels of knowledge, awareness and concern. Yet the Malagueño data remain consistent across a substantial geographical area. It may be that higher levels of social environmental consciousness exist in Malaga, regardless of ESD provision and low NGO presence, and that environmental awareness, knowledge and concern stem also from these sources. Alternatively, it may be that public disposition towards questionnaires is unequal in the two locations, and results are reflective of social or cultural nuances. These questions remain to be re-examined in the context of the qualitative material in subsequent chapters.

The findings suggest that despite similarities in relative social identity and everyday behaviour, and being influenced by similar processes, it is the influence of home and experiential learning which tends to prompt higher levels of environmental concern. However, this is not necessarily transferable to a wide range of pro-environmental

behaviours. There must also be adequate provision of opportunities to participate. Although the results cannot be taken as providing clear answers, they provide valuable insights into the differing influences at work among the two samples. These findings are now combined with the qualitative analysis (chapters 5 and 6) to provide a more comprehensive account of influences affecting teenagers' mediation of environmental sustainability.

Chapter 5

Perceptions of Environment

5.0 Introduction

Numerous research projects exploring sustainability themes have commented on high levels of ignorance and misunderstanding amongst the general populace, especially concerning the terminology employed to discuss sustainability (Darnton 2004a: 2004b; Munton 1997)[1]. Therefore, to achieve greater understandings of how participants relate to environmental sustainability, it is essential to unpick the ways in which 'environment' is perceived. There is also the danger in any international comparison in assuming that meanings associated with concepts transcend language. Although the international fostering of sustainability suggests its significance is likely to be understood in similar ways across cultures, this needs to be explored to provide a sound base for subsequent analysis.

Following this introduction, section 5.1 presents qualitative findings in the form of interview and focus group extracts set out by theme: (i) the environment as nature; (ii) environmental problems; (iii) solutions; and (iv) environmental futures. The implications of these findings are discussed in the context of the existing literature in section 5.2 through the concepts of 'exploring nature' (5.2.1), and 'environmental problems and environmental pessimism' (5.2.2). The influences of media, education, language and youth on environmental perception are then explored in section 5.2.3 before the key findings of the chapter are summarised in section 5.3.

[1] If one considers the contested nature of sustainability within the academy, public uncertainty as to its definition and applications is unsurprising.

A wealth of qualitative data is presented throughout chapters 5 and 6. Single quotes are situated within the text; multiples are presented in Tables in which the interviewer's questions and comments are positioned in the left hand column and participant responses on the right. The gender and age group of the respondent are indicated in all cases and each contribution is coded so it can be located within the original transcript. All Spanish contributions have been translated by the author; the original dialogue is presented in end-notes after the chapter conclusions[2].

5.1 Teenage Perceptions of Environment in Devon and Malaga

In order to find out how participating teenagers perceived the environment, a series of questions were asked to ascertain what the term environment meant for them, how they were influenced in constructing its meanings, and what (if any) significance these constructions have for them. From these discussions, key themes emerged: the environment as nature; and the environment as a set of interrelated socially, economically and industrially induced ecological problems.

5.1.1 Environment as Nature

(i) Devon

Among Devon teenagers' nature was a popular perception of environment and was usually referred to as countryside. Although there was evidence of understanding that the environment was 'everything, the world', the idea of countryside was very powerful. Nature existed within countryside which was usually located external to participants' immediate local environment, although within the United Kingdom. A related popular conception was that of 'the natural environment', which was yet to be corrupted or polluted by human activity. This tended to be located in exotic locations abroad.

[2] A copy of the interview and focus group question structure is available in Appendix 3.

Nature was perceived as under threat from human activity but was generally viewed as expendable. Its most important role was as a resource base to human industrial activity and it was through this anthropocentric lens that human dependency upon nature was perceived. There was little evidence of an intrinsic worth associated with nature.

Language also emerged as important in how participants perceived nature. Although talking about the same ideas, processes and objects, teenagers of different ages used very different language referents. Younger participants were more likely to couch their perception of environment in terms such as countryside, animals, trees and plants, whereas the older participants were more likely to use scientific and technical terms to describe natural phenomenon: habitats, ecology, organisms, food-chains, food-webs, fertilisers, wet-lands (Table 5.1).

Interviewer	**Interviewee (s)**
What do you think of when you see hear the word environment?	Male 13-14: Places like where you live or something but not like towns or cities.
OK, can you expand on that?	Male 13-14: Like forests, woods. Male 13-14: The wildlife. Male 13-14: Yeah, stuff like that, just like the whole world. Male 13-14: Yeah kind of thing, you know. Male 13-14: The landscape around us like rivers and cliffs and everything..... Male 13-14: I think of animals and plants (FGUK01138).
What do you think of when you see this word environment?	Female 17-18: Different habitats and things like that.
Habitats, right.	Female 17-18: Wildlife. Male 17-18: Ecology. Female17-18: Conservation (FGUK0218).

Table 5.1 Perceptions of Environment (Devon)

The role of animals was often discussed and many participants talked about animal rights, using discourse associated with moral extensionism in which animals hold inherent rights to both existence and resources based upon their co-evolution on Earth, and are victimised by the pollution and degradation of 'nature' by human activity (Regan 1993; Singer 1976) (Table 5.2).

The mutual reliance between animals and people was recognised by most participants and often conceptualised as parts of a 'cycle'. However, the uneasy relationship between people and animals in competing for space and resources was recognised and, in most cases, the needs of humanity held precedence.

> Male 13-14: Well, although animals are important to keep the world going, your own species should be more important (I01UK87).

Interviewer	Interviewee(s)
Do you think that animals have a right to live outside of our necessity of them?	ALL: Yes. Male 13-14: Because they are also living on this earth and it is their Earth not just ours. Male 13-14: Most of them have probably been here longer than humans anyway. Male 13-14: They have evolved along with us so that gives them the same rights. Just because they haven't done their own things in the same way that we have done them like build cities and stuff does not mean that they have not done great things... (FGUK08228)

Table 5.2 Animal Rights

Animals were a popular focus for environmental protection, which was believed to be a necessary component to their survival in their relationship with humanity. Teenagers

sympathised with animals through personal experience of pets and through media which informed them of the plight of exotic fauna mainly from hunting activities.

(ii) Malaga

When initially asked what the term environment meant for them, the majority of Malagueño teenagers began with a description of nature; trees and forests, animals, plants, the sea and nature. Nature was again perceived to exist in the countryside and as a place not yet touched by humanity. The overall perception amongst the younger participants was that humanity was conceptually separate from animals and nature, and with older participants it was more generally felt that people were part of nature (Table 5.3).

Interviewer	Interviewees
What significance does the word 'environment' have for you?	Female 13-14: The countryside, the parks, trees, animals, fish.
And we, people, are we part of nature?	Female 13-14: No.
No?	Female 13-14: A little, but mostly it is the animals. Female 13-14: We are part of nature but not so much like the animals and that (ESFG0911)[i].
In your opinion is humanity part of the environment?	Female 17-18: In my opinion we form part of the environment (ESFG1525)[ii].

Table 5.3 Animals and Nature

(In Malaga) participants believed animals had the same intrinsic rights to exist as people, although they did not discuss the difficulties of animal existence in an anthropocentric society unprompted. They did, however, talk about the lack of respect for animals demonstrated both at an institutional level, via a lack of legislative

protection, and at the domestic level, where many pets were not allowed in homes, and dogs especially were often abandoned in the summer when families travelled. These disclosures demonstrated evidence of a basic understanding of the dependency of animals upon people. Although some participants did feel concern for environmental issues via their consequences for animals, a general dearth of interest in animals resulted in this being the exception and not the rule.

5.1.2 Environmental Problems

(i) Devon

Environmental problems were important to how teenagers in Devon visualised the environment. A range of issues were mentioned, the most frequent of which were deforestation (particularly of the rainforests), oil leaks at sea, the greenhouse effect, pollution, litter, habitat destruction and car fumes[3]. The types of environmental problems that Devon teenagers suggested were mostly 'global' in identity[4]. When asked how they learned about these types of issues, it became apparent that participants did not feel able to experience global environmental issues. Instead they learned about them through the media and, to a lesser extent, education. Global environmental issues were conceived as non-visible, with uncertain origins and consisting of complex processes, while further uncertainty existed about their exact implications for society (Table 5.4).

[3] Further to these participants mentioned the following environmental issues: Toxic waste, light and sound pollution, dumping of rubbish, global warming, dead animals, species loss, dogs mess, aeroplanes, smoking, vandals, industrial smoke, desertification, broken glass, landfills, sewage, pesticides, petrol, water management, marine pollution, overpopulation, homelessness, electric fumes, fireworks, bonfires, forest fires and mining waste.

[4] Global here refers to problems which are caused in a different location to their effects, e.g. global warming. Local environmental problems are those where the cause and effect both take place in a local area and the causal link is identifiable. These categories are not meant to be absolute and many issues satisfy the criteria of both, however, they do provide a useful structure with which to conceptualise the role of experience in teenagers' understandings and responses to environmental issues.

Interviewer	Interviewee (s)
Do you think there is a global pollution problem at the moment?	Female 13-14: No. Female 13-14: Well there is the pollution that travels on the breeze Female 13-14: Well, I don't see all this pollution, I can breathe properly Female 13-14: I don't think it is as good as it could be but it is not that bad (FGUK05189).

Table 5.4 Global Pollution Problems

However, there was an altogether different perception of local environmental problems that respondents had personal experience of. Whereas global problems were understood in abstract and scientific terms, social context was implicit in understanding local issues which were visible, part of the everyday, socially originated and, importantly, conceived as reversible. The local environment was where teenagers grounded their experiences and was the reference they used when talking about their lives.

Some of the linkages teenagers were able to make between local and global processes were questionable. Despite some evidence of declarative understanding about the nature of global issues, many teenagers were under the impression that rural areas were less polluted and experienced fewer environmental problems than urban ones, and this persisted across both age groups and different localities. Participants from villages felt that those who resided in the local town should be worried about the environment and those from the town thought it was the problem for those living 'up North', Birmingham or London.

> Male 17-18: I have never heard of any environmental issues here. Probably up-country (I13UK120).

Human activity was blamed for all environmental problems, the consequences of which were believed to affect humans, animals and nature but to different extents. Many participants believed that it was nature and animals that were, and would continue to be, worst affected by environmental degradation issues, yet society would continue unaffected for some time[5] (Table 5.5).

Interviewer	Interviewee (s)
Which issues are relevant to you? Which do you think about?	Female 13-14: Um, like when, sometimes they say like the ice melting from global warming and things, um I do feel sorry for like the polar bears and things because they might not have a home shortly so all the places that are going to get flooded because of the rising water so.
When that happens do you think it'll just be the polar bears that won't have anywhere to live?	- No there'll be all the fish and, I suppose not the fish but would the temperature of the water change though?
Perhaps	- Then only the different animals that are used to the climate will be able to survive.
Do you think it will affect people?	- Um I don't think, a lot of people at the moment don't really care I don't know whether they will then but I'm not sure (I05UK266).

Table 5.5 Global Pollution and Animals

(ii) Malaga

The majority of the environmental problems suggested for discussion by Malagueño teenagers were locally based issues, their knowledge of which appeared to be obtained primarily through direct experience. A wide range of local issues were suggested, the

[5] Possible dates for changes to society caused by environmental processes were wide ranging. There were minority instances of dates for running out of fossil fuels given at 12-24 months. The majority did not see life-changing resource depletion occurring within their lifetimes. Pollution issues were felt to be less threatening than resource depletion.

most common being litter, traffic fumes, factory fumes, water pollution (concern was usually focused on the dumping of rubbish into waterways) and forest fires[6]. *'Contaminación'* (general pollution) was frequently used to describe visible pollution problems such as illegally dumped rubbish and general littering, and this was alleged to be prominent at several key sites; the beach, the streets and in the forests.

> Female17-18: The forests, for me it's when people throw rubbish on the floor, personally this really bothers me, all of these issues with litter on the floor and these types of problems (ESFG1242)[iii].
>
> Female 17-18: In the summer there are days when you go to the sea to swim at the beach and it's full of filth and it's not worth getting wet especially in Malaga (ESFG1270)[iv].

Industry also figured prominently. Malaga Province was perceived as highly industrial and numerous factories were specifically mentioned[7]. Subsequently, pollutants from factories ranked highly in discussions of local environmental issues.

> Male 13-14: In another part of Malaga there is a glue factory that has an impact on the quality of the air (ESFG05108).
>
> Male 13-14: And the industry nearly all cause fog like she says, so much fog (ESFG0764).

The behaviour of people was often mentioned as responsible for local issues. People were seen to be knowledgeable about the benefits of a clean environment but unwilling to contribute through appropriate behaviour.

> Female 17-18: Because people go and eat on the beach and leave their rubbish there and no-one cleans up (ESFG05118)[v].

---

[6] Further to these examples, participants suggested deforestation, water pollution, smoking, sewage, the airport and noise pollution. Overall fewer suggestions of environmental problems were made amongst the Malagueño teenagers.

[7] Factories mentioned produced San Miguel beer, Coca-Cola, olive-oil, serviettes, paper, soap, cement and tobacco.

Female 13-14: They throw cigarettes and think that nothing happens. But if everyone throws them, the floor ends up being an ashtray (ESFG0690)[vi].

Global issues were also generalised through the use of *'contaminación'*. Specific global issues were not suggested as often as local ones by participants[8]; in cases when they were not suggested, the interviewer asked if they were aware of certain key global environmental themes[9] which then prompted a discussion. The majority of participants were able to describe how these problems were caused and the ways in which consequences were manifested. Many participants were also able to associate this knowledge with personal experience (Table 5.6).

Interviewer	Interviewee (s)
Do you think these issues [ozone depletion / greenhouse effect] have an effect on your daily life?	Female 13-14: It changes the temperature and every time you feel it more [it gets hotter]. Female 13-14: The plants every time die, they burn (ESFG08603)[vii].
Do you think these issues [ozone depletion / greenhouse effect] have an effect on your daily life?	Female 17-18: It is hotter. Female 17-18: The heat is tormenting, and the droughts, we endanger ourselves. Female 17-18: And it encourages illnesses and allergies. Female 17-18: Many of them Female17-18: And fever and all that, and it starts to be cold for only half a month in winter, half the winter you can wear short sleeves[viii] (ESFG12219).

Table 5.6 Direct Experiences of Global Warming

[8] Those which were mentioned included: air pollution, the greenhouse effect, climate change, ozone depletion, use of petrol, animal extinction, toxic residue, acid rain, nuclear power, bio-chemicals and consumption.
[9] Global warming and ozone depletion were the two commonly used to prompt participants.

Also noteworthy was the observation that increased heat was causing more forest fires which suggests a contextualised understanding of the relationship between global and local processes.

> Female 13-14: This summer in Spain there were many fires in many places throughout Spain because the countryside is dry, it happened a lot, it did not rain much and there was too much heat (ESI16426)[ix].

However, countering this was evidence that participants believed rural locations to be less polluted than urban ones. Interviewees from Antequera believed it was cleaner than Malaga, which they called the 'dirty capital', and those from Malaga referred to chronic air pollution in Madrid.

In contrast to experiential understandings of local issues, knowledge about global ones was obtained primarily through education and to a lesser extent the media. Thus these issues were discussed mainly in terms of declarative and social knowledge, similar to the findings for Devon respondents.

Leading on from the issues which teenagers in both case study locations perceived as problematic was a discussion of what solutions they envisioned to ameliorate them. This in turn led to dialogue about the future and how they perceived the future in environmental terms.

5.1.3 Solutions

It emerged from the data that environmental problems were not conceptualised as fixed entities but as issues which held important implications for the future. Participants in both locations suggested a range of solutions to environmental issues which, for the

purpose of analysis, are grouped into three categories; technological, behavioural and legislative[10].

(i) Devon

Technological solutions were suggested most frequently[11] amongst teenagers in Devon and focused on increasing energy efficiency and decreasing pollution levels. Although participants were generally confident about the ability of science to provide solutions to environmental problems, they were less trustful of capitalist business ethics which were perceived to control science, technology and invention (Table 5.7).

Behavioural solutions were suggested less frequently[12]. Participants generally agreed that human behaviour needed to be cajoled and, generally, technology was seen as a prerequisite or facilitator of this.

> Female 13-14: There might be robots that run on solar power to pick up the litter and that instead of people doing it (I14UK825).

There was little evidence that teenagers saw widespread behavioural change as a likely possibility in society and often this was because there was no perceived personal gain (Table 5.8).

---

[10] These categories are subjective but based on intuitive sense. Technology consists of all suggested technological solutions, legislative solutions of ideas that would require government legislation or regulation to function, behavioural solutions are those which require a change in everyday human activity. These categories are not mutually exclusive and many suggestions have technological, legislative and behavioural implications, yet separation is useful to explore the ways teenagers perceive solutions.

[11] Suggestions included: electric/ solar / hydrogen based transport and energy, science, sulphur eating bacteria, an enormous hoover, a miracle, wind farms, reduce pollution and traffic emissions, clean energy, inventions, energy efficient boilers, catalytic converter, bio-fuel, less power stations, recyclable carriers, biodegradable materials, dumping waste into outer space, noticeably there was no mention of nuclear power.

[12] Suggestions included: car share, cycling, alternative transports, birth control, solidarity and sharing of ideas, competitions to positively reinforce behaviour, preservation of fossil fuels, environmental gardens, to respect the earth, switch off lights at night, recycling.

Interviewer	Interviewee (s)
What solutions do you see as helping to sort this out?	Female 17-18: By everyone getting together, pitching their ideas in. Male 17-18: But you need that to be more than a minority and that is not the case. Male 17-18: We need more of a global network focussing on the problem. Male 17-18: As far as natural resources go we don't actually need them, we can have electric cars, solar cars, they can make cars run on water but essentially the petrol firms will lose out on so much money that they won't actually allow production but we need the input from the government to allow it all to work but they won't because they get so much income from it, they have it already, someone has invented a water conversion kit for about £200, it will just run on water, that would so easy. Female17-18: Yes. Female17-18: They have the technology but they do not want to use it 'cos they are too greedy.
So what you are talking about is power	Female 17-18: – They can use the science to help the environment but they only use those methods to help themselves (FGUK03490).
Do you think it [science and scientists] will offer us solutions?	Female 17: I don't think they offer solutions. When they make stuff they don't think. Female 18: They think how much money am I going to make here. Female 17: And they don't care about the future because they're not going to be here to worry about it (FGUK111134).

Table 5.7 Mistrust of Government

Interviewer	Interviewee (s)
Is there anything else that would make you want to look after the environment?	Female 17: Competitions with prizes.
OK	Female 17:Do you know I just think it's like things that you could be given in return for doing it. Female 17: You don't get anything in return for it do you? Female 17: You think nothing's going to happen to me or to make me better off so it's a waste of time (FGUK111134).

Table 5.8 Personal Gain and Pro-environmental behaviour

A particular conception of human nature based upon lethargy, sloth and self interest was often blamed for the slow uptake of positive environmental behaviour and action.

> Female 17-18: I don't think you need to be a scientist to know that if you recycle a bottle you'd be helping, and if you didn't drop your litter or didn't put oil in the sea. I don't think it takes a scientist for that, it's just common sense and laziness because everyone does it sometimes (FGUK131089).

The general consensus was that any behavioural change would require legislative support; however, these types of solution were suggested the least often[13]. Most of the ideas about legislation focused on government-led regulation for industry and public behaviour, where the government took a stronger role in leading and managing sustainability (Table 5.9).

[13] Suggestions included: a global network to focus on environmental issues (similar to the UN but with the ability to 'control' America), obligatory global regulations for environmental issues, stricter regulation on the criteria for inventions, fining McDonald's for rubbish, controlled economics, regulations on car use, price per bag on waste, less packaging as standard, rationing, laws against litter, obligatory gum posts, deposit returns on bottles.

Interviewer	Interviewee (s)
Do you think the government does enough?	Female 17: I think they try Female 18:I don't get the impression that they try Female 17: If they made it compulsory though then everybody would
Made what compulsory?	Female 17: Like recycling and gave you a minimum use of your car or something
Right ok	Female 17: And then like fined you if you didn't because like money is precious to everybody (FGUK09535)

Table 5.9 Legislative Solutions

(ii) Malaga

The range of technological solutions put forward by Malagueño respondents was more limited than those suggested in Devon[14]. Participants were generally familiar with wind and solar energy, both of which were already in widespread use in Andalusia. However, these energies were usually only used when mainstream energy resources were unavailable, so were not perceived to be a preferred choice. Technological developments with the potential to ameliorate pollution issues were seen as offset by the increasing numbers of energy-requiring products available for purchase and a common mistrust of the capitalist values associated with technology (Table 5.10).

> Female 13-14: Technology, I believe there are more electric things and more technological apparatus than ever. What happens is they pollute more all the time, because there are more electrical things, and more cars and technology causes more damage to the environment (ESFG08540)[x].

[14] Technological suggestions were: solar, wind and water power, nuclear power, filters on chimneys, inventions, to go and live underground and flying cars. Only a single mention was made of nuclear power.

Behavioural solutions were suggested very frequently[15]. Yet, despite this, there was negligible evidence that widespread public behavioural change was considered likely. Human nature was perceived as incapable of voluntarily accommodating pro-environmental behaviours as this required collaboration across social transects which normally separate people (nationality, race, and religion) (Table 5.11).

Legislative solutions were also popular. Fines were discussed frequently; however participants often retreated from supporting the idea of fines as effective agents of change due to the practical difficulties in policing and collecting fines. Older teenagers were particularly able to recognise more complex reasons for the ineffectiveness of fines (Table 5.12).

Political change was also discussed occasionally. This was usually conceived as a reaction to worsening environmental issues.

> Male 17-18: Little by little there are more problems, the people will protest more. Therefore to win votes the politicians will propose more things to change the environment (ESFG10672)[xi].

However, teenagers also thought that human nature and the general tendency for people to disagree would again hinder public and political change.

[15] Do not throw litter, recycle, use cars less, use less petrol and other non- renewable resources, do not use old cars, to produce only what is necessary, reduce packaging and consume less.

Interviewer	Interviewee (s)
To what extent do you think technology can help solve environmental issues?	Female 13-14: One thing is the technology, another thing is Man, and they are distinct causes (ESFG09198)[xii].
Do you think clean technology can be a solution?	Male 17-18: Right now it's convenient for us economically… Male 17-18: But there are solutions… they can invent more things that will contaminate less, like cars, they can make less cars that don't need petrol Male 17-18: But until they are profitable they are not going to make them Male 17-18:Also they are expensive
Do you think clean technology is used much in Spain?	Male 17-18: No (ESFG10 932-947)[xiii].
Do you think clean technology can be a solution? How?	Female 17-18: Yes. Female 17-18: Through innovation. Female 17-18: I believe that technology can be used to ameliorate the environment but what happens is that it is too expensive. Female 17-18: Like solar energy. Female 17-18: It saves energy. Female 17-18: But it is expensive to set up (ESFG15696)[xiv].

Table 5.10 Technological Solutions

In both locations teenagers reasoned that the implementation of known technological, behavioural and legislative solutions to environmental problems were fraught with difficulties. Yet, suggestions remained geared to existing solutions and there was no evidence of teenagers thinking 'outside the box' and suggesting alternative solutions. As discussions evolved into conversations about the future, it became apparent that the interrelated solutions for environmental issues suggested by teenagers have resonance for how they are able to perceive environmental futures. This is discussed further in the next section.

Interviewer	Interviewee (s)
What solutions can there be?	Female 13-14: If everyone works together to produce less. Female 13-14: But when it comes to the whole world there is always someone who thinks the contrary.
Do you think people can work together to facilitate solutions?	Male 17-18: No. Male 17-18: No.
Why not?	Male 17-18: They just can't. Male 17-18: They don't take it seriously.
But if you believe that people cannot work alone or together then what can be done?	Male 17-18: Nothing, there is no solution. Male 17-18: I do not believe anything can be done. Male 17-18: It is too difficult to get the world to agree (ESFG10799)[xv].

Table 5.11 Barriers to Solutions

Interviewer	Interviewees
What can the government do?	Male 17-18: The government can put fines but they are the first who will not comply. Male 17-18: It costs to put a filter on a chimney and if you put a fine, they pay because it is cheaper than putting the filter. Male 17-18: If it costs less to put the fine but the government wants them to put a filter the company will pay the fine. Male 17-18: And so for the fine they do not put the filter. Male 17-18: Right now this is convenient economically (ESFG10845)[xvi].

Table 5.12 Economic Solutions

5.1.4 Future Imaginations

(i) Devon

In general, teenagers felt that the environment was in a worse state than in the past and that it would continue to deteriorate (Table 5.13).

Interviewer	Interviewee (s)
In your opinion what is the current state of the environment?	Male 17-18- Um, I suppose it's getting worse all the time isn't it? It's in a much worse state than it has been definitely yeah (I07210).
In your opinion what is the current state of the environment?	Male 13-14: Um it is in a worse state because we are using more fuel and that than we used to do. A hundred years ago they would not have used all that so it would have been better then (I08140).

Table 5.13 Current State of the Environment

Despite widespread acknowledgment of the capabilities of science and technology to reduce environmental pollution[16], knowledge of environmental problems often resulted in pessimism about their own environmental futures (Table 5.14).

[16] There were instances where participants felt that technological advancement would improve the future. 'I think it will be better because a lot of the petrol driven cars will be gone' (FGUK03397). However these were in the minority.

Interviewer	Interviewee (s)
What do you see in the future? Let's say when you are in your fifties, what do you think the environment will be like?	Female 13-14: Houses, there will be houses everywhere. Male 13-14: Trees, the amount they are cutting down in our lifetimes, or they say they are, cutting down an area the size of Wales everyday and that's a very big plot and it's not going to last forever, perhaps not even 40 years. Male 13-14: Everything will be run by computers and people will start losing loads of jobs because we just won't be needing things so there will be a massive job crash. Female 13-14: I think we will be overpopulated, we'll eat everything else or kill everything else because there will be no room for it. Female 13-14: We'll just develop into greed and laziness, get greedier and lazier all the time, we are trying to improve stuff always so we don't have to put so much effort into things, that's us (FG03546).

Table 5.14 Imagining Environmental Futures

It emerged that participants commonly envisioned a future devoid of nature and countryside, brought about by the demand for resources and, in particular, house-building[17].

> Male 13-14: It's weird because all the concrete taking over the green stuff, it could be that in a couple of hundred years you are going to have a zoo for trees because no one will have seen a tree (FGUK03581).
>
> Female 13-14: If the environment is destroyed there won't be too many animals left, we'll only be able to see them in a zoo and not out in the wild (I14UK201).
>
> Male 17- 18: ...new houses that have been built in areas and people want to move to the countryside but they are destroying the countryside just by moving to the countryside which is a bit of a bit odd. I can see England kind of becoming one big city.... (I071367).

[17] House-building and a monopolisation of urbanity over the rural featured very prominently amongst participants visions of local future.

However, these eventualities were accepted by many participants, as no ultimate threat to civilisation was associated with the loss of nature. This threat was instead perceived to come from resource depletion and pollution.

> Male 13-14: Once we have used up the energy resources that we have we will start going to other parts of the earth and using up the resources they have for other things, if we run out of gas then we will start burning all the trees against the cold, like on Easter Island and look what happened there through chopping a couple of trees down (FGUK03443).

Sometimes dates for resource depletion were as close as 12-24 months but were usually positioned in the distant future. Threats were understood as likely to develop from global competition for resources resulting in a series of resource wars and possibly ending in thermo-nuclear war (Table 5.15).

Interviewer	Interviewee (s)
What do you think will happen if resources run out?	Male 13: I reckon it's mainly to do with like natural resources like coal and everything and lots of war will break out. Female 13: Right, someone's going to get the last bomb and it's going to be a humongous bomb and it's going to blow up the world apparently. Male: It is called thermo-nuclear, it's radiation that attacks heat and if anything is hot it will go to it and that's like humans (FGUK17856).

Table 5.15 Resource Wars

An alternate belief was that there would be 'help at the end', a crisis driven technological revolution which would emancipate humanity from environmental disaster. However, according to this view things would have to 'get worse before they get better'. The crisis was perceived as a critical part of the solution (Table 5.16). As in discussions of 'solutions', a particular construction of humanity was used to illustrate

why such a future could be allowed to happen (Table 5.17). The idea that people were ambivalent to environmental issues was pervasive amongst the sample and helped to maintain their preference for technological solutions.

Interviewer	Interviewee (s)
Well how do you think this will get sorted out in the future?	Male 17-18:-Probably it's too late, the ozone layer collapses.
Do you think there needs to be some kind of crisis before we can have an appropriate reaction to it?	Male 17-18: - Yeah we need something to kind of wake the world up to realise that something needs to be done bad. But they're not going to see that until something drastic happens.
Have any of you got any idea of any time scale we're talking about to have some kind of crisis?	Male 17-18: I don't know it's supposed to like kill us in like 2 years isn't it? Male 17-18: Christ (name) 2005. Male 17-18: 2006 we're all supposed to die. Female17-18 : (INCOMPREHENSIBLE) Male 17-18: Did you just say we're all going to die? Male 17-18: That's the old bible, that's the old religious, asteroid in 2003.
Do you think that it will be in your life time there'll be some kind of crisis?	Male 17-18: Yeah definitely. Male 17-18: Maybe we'll move to the moon or something like that.
Really? will we?	Male 17-18: And we'll destroy another planet. (FGUK14)
Do you think environmental problems will continue to get worse in the future?	Male 13: Well, I think they will either……something will either happen and it will get better 'cos people will think about them more or they will just carry on and get worse (I01UK122).

Table 5.16 Crisis

Interviewer	Interviewee (s)
	Male 13-14: I think in some respects it is going to get worse because at the minute some people are leaving it too late and it's going to become too much to handle, nature will....and it won't go right.
What do you mean by some people are leaving it too late?	Male 13-14: Well they say they are going to. Male 13-14: Yeah. Male 13-14: They say we'll do that, we'll do this, but they don't. They never really do much and if they do there is nothing to it. Male 13-14: No one can be bothered to do anything. Male 13-14: They won't be bothered and then it will become one big thing and it will be too hard to control (FG02410).
	Male 13-14: It's just that we can't be bothered really, we're all lazy, and we're all a bunch of lazy sods (FGUK06870).

Table 5.17 Human Nature

(ii) Malaga

The majority of Malagueño teenagers also believed the environment was on course for continued degradation through pollution and the rapid urbanisation of the countryside[18] (Table 5.18).

[18] Urbanisation was blamed on the tourist industry which has been responsible for unprecedented development in Southern Spain.

Interviewer	Interviewee(s)
What do you think will happen in the future?	Female 13-14: I don't know. I think about it a lot, if it will be better in thirty years time, if it will be disgusting. Because if all the time things are worse and now Spain is disgusting. Within thirty years it could be that there will be no rivers without contamination and no beaches that are clean or any countryside that has not had trees cut down (ESFG07803)[xvii].
How do you see the future?	Female 17-18: I think there will be a marked change in the climate. We will witness changes in the weather and the temperature. Female 17-18: I think in the structure too, in the form of things, how do you say, less natural, more industrial, more artificial and that. If there is all the time less natural resources then there is less for us to enjoy (ESFG12542)[xviii].

Table 5.18 A Less 'Natural' Future

However, many also (often simultaneously) believed that the combination of behavioural and technological solutions would be sufficient to prevent environmental catastrophe. Others believed that a sea-change in public attitudes and behaviour could only be achieved by a crisis situation and extensive public exposure to environmental problems (Table 5.19).

Interviewer	Interviewee
You have said that people do not do as much as they could. Why do you think this happens?	Female 13-14: Because people do not have a conscience. Female 13-14: We have to go to where there is a catastrophe for people to understand what it is to do something. Female 13-14: Until people don't have oxygen they won't realise and change (ESFG06128)[xix].
	Female 13-14: I think of my children, of my grandchildren, they will see the end of the world come if things carry on like this and the world will finish. Male 13-14: People believe this will pass and still they do nothing to change it. All the time it is worse. People say we don't know we are damaging it so let's not worry. People think we can end the world and then start again from nothing. (ESFG07803)[xx].

Table 5.19 Human Nature and Crisis

However, although fear and uncertainty about the future were commonplace, so was ambivalence about the relevance of environmental futures for them as young people (Table 5.20). This theme is expanded upon in subsequent chapters.

Interviewer	Interviewee (s)
	Male: 17-18: It's that when we are adults, we will be more aware and conscientious and think about it Male 17-18; Now we are dedicated to living life. Male 17-18: When we have a family that is when we will be interested (ESFG10629)[xxi].

Table 5.20 Growing up and Pro-environmental Behaviours

5.2 Discussion

The results show that teenagers who participated in this study in Devon and Malaga generally shared a vision of the environment as 'nature' and as a set of social and ecological problems. They learnt to conceptualise the environment in these ways through different media, personal experience and education. When considering solutions to environmental problems, they suggested a range of technological and behavioural solutions, all of which they felt were hindered by weak legislative support. However, when envisioning environmental futures, they imagined environmental pressures triggering some form of crisis in which legislative solutions lead technological and behavioural responses to alleviate environmental problems.

Undoubtedly a key finding of this chapter has been to establish that despite social, linguistic and geographical variances between the case study participants, teenagers in Devon and Malaga generally held similar perceptions of the environment, agreed on responses to environmental issues and imagine environmental futures in similar ways. As the results and previous studies have indicated, the main ways participants talked about the environment were through concepts of nature and environmental problems (Macnaughten 2003; McGregor 2004).

5.2.1 Exploring 'Nature'

The association of nature with the environment was common throughout the sample. The popularity of nature as a proxy for the environment has been discussed by a number of researchers in recent years, who have reached similar conclusions about nature's role within environmentalism[19]. McGregor (2004:593) surmises from this that nature has been 'reconstituted as the environment', embedding nature firmly in modern

[19] This trend has developed from the concept of the NEP (Dunlap and van Liere 1978b) in which humans are viewed as a part of nature.

constructions of environment and popularising it as a vehicle for public environmental concern. Support for nature and natural entities can be highly influential in directing social environmental action and considerable energies are expended in influencing the ways in which publics construct and sympathise with them. 'Public imaginations [of nature] are inherently political' (McGregor 2004:594; Also Anderson 1997; Beder 1997; Rowell 1996).

Shultz (2000) draws on theories of altruism and empathy to argue that the types of environmental concern people experience is associated with how they view themselves in relation to other people *and* nature (also Loughland *et al.* 2003). Using categories of value based environmental concerns suggested by Stern and Dietz (1994) and Baston (1994)[20] he argues that each value base requires different motivations for the individual to care for the environment. For example, in his depiction, egotist concerns would involve local issues with a direct impact on individuals, whereas biospheric concerns would provide a broader basis for behaviour involving local, specific and more abstracted global issues based on the value of all living things (also Myers *et al.* 2004). This genre of work has also received support from authors of individualisation and the risk society theses, who recognise the significance of the manner in which the environment confronts the individual in terms of health and quality of life (Adam 1998: Beck 1992: Dunant and Porter; Franklin 1998; Giddens 1994; Macnaughten 2003).

[20] Stern and Dietz (1994) suggest three categories for value-based environmental concern: egotistical, social-altruistic and biospheric. 'Egotisitcal concerns are based on a person's valuing himself or herself above other people and above other living things' (my health, my future, my lifestyle, me and my prosperity).....Social altruistic values lead to concern for environmental issues when a person judges issues on the basis of costs to or benefits for other people (people in my community, children, all people, my children). ...Biospheric environmental concerns are based on the value of all living things (plants, marine life, birds, and animals)' (Schultz 2000:392 and 401; Also Stern and Dietz 1994). Stern *et al.* (1993) contends that individuals simultaneously hold all three values: mainly egotistical, then social and, lastly, biospheric. Baston (1994) argues that pro-social behaviour is motivated by up to four different motivations: egoism, collectivism, altruism and principalism. Motives are 'defined as forces aimed at achieving an ultimate goal and it is individual differences in these ultimate goals that lead to different motives' (Schultz 2000:393).

Shultz concludes that those individuals with biospheric motivations are the most likely to support and progress environmental (and sustainability) agendas.

Petocz *et al.* (no date) emphasise the need for a better understanding of child and adult conceptions of the environment. Using phenomenological analysis[21], they explored adult conceptions of the environment[22] identifying hierarchical levels of object and relational environmental views relevant to perceptions of nature (Figure 5.1). The hierarchy is additive and they conclude that those individuals who were able to identify with relational conceptions were more likely to be engaged in their relationship with their environment.

Object Focus	Conception 1	The environment is a place
	Conception 2	The environment is a place that contains living things
	Conception 3	The environment is a place that contains living things and people
Relational Focus	Conception 4	The environment does something for people
	Conception 5	People are part of the environment and are responsible for it
	Conception 6	People and the environment are in a mutually sustaining relationship

Figure 5.1 Adult's Conceptions of Environment

(Petocz *et al.* no date)

In considering the present data in the context of these literatures, two salient findings emerge. The first highlights the role of animals and the biospheric orientations of teenagers who participated in the research. Despite similarities in the way teenagers

[21] A form of qualitative research which investigates how people experience, understand and ascribe meanings to a specific situation or phenomenon (Marton and Booth 1997). Phenomenology recognises individual experiences but focuses on differences between experiences across groups of individuals.
[22] This work stemmed from a previous study which used a similar approach with child participants (Loughland *et al.* 2002). The same phenomenological categories emerged for adults and children.

described environment as nature, when discussing animals there was a distinct divide. Although the use of moral extensionism was common amongst teenagers when discussing animals, younger teenagers spoke more intimately about animals and were more likely to be concerned about them. It was also apparent that, in general, teenagers in Malaga were less interested in animals *per se* and although they were aware of the animal rights agenda, this interest was tokenistic and rarely evoked concern for the environment. This could indicate that through a sympathetic relationship with animals, Devon teenagers and younger teenagers are more likely to have biospheric values.

The second finding using the Petocz *et al.* (Figure 5.1) idea of relational- objective conception is that teenagers generally believed that nature and wilderness[23] were located elsewhere; suggesting object-focus views were the most common. Yet amongst the samples in both locations, older teenagers better understood the mutual relationship between humanity and environment, indicating a relationship between length of education[24] and relational orientation. However, when compared with quantitative data on environmental concern, younger teenagers were more concerned about environmental issues (Table 4.35), including access to countryside and over-development (two issues with direct and observable impacts on local 'nature'). This suggests that despite the mainstreaming of nature as a tool for engendering concern, relational views of nature do not necessarily translate into concern, as Petocz *et al.* (no date) and Loughland *et al.*(2002; 2003) have argued. Instead, relational views are likely to be contextualised within egotistical, dispassionate and compartmentalised views about the environment. This is likely to be because information is not translated into value change, which is essential for the *adoption*, rather than *acknowledgment,* of relational, biospheric and broader sympathetic approaches to environmentalism. Similar

[23] A widely used term to describe areas as yet unaffected by human activity.
[24] Education has been specifically mentioned as including declarative knowledge required to understand human-environment relations are taught as part of secondary syllabuses in Devon and Malaga.

trends have been observed elsewhere, where increased levels of environmental knowledge statistically reduce the odds of the 'relational' concept of environment (Hicks and Holdern 1995; Loughland *et al.* 2003). In these cases, cause has been attributed to the dissemination of ESD without the parallel development of relational foci (Gonzalez-Gaudiano 2001; Hicks and Bord 2001). This correlation between increasing age and an relational but *unconcerned* worldview was prevalent in both case studies regardless of stronger biospheric views about animals amongst Devon teenagers. Therefore, it seems that animals can be valued separately from other environmental concerns.

Also important in how teenagers constructed ideas about nature was the role of language and again this would appear to have relevance for education. Whilst some younger teenagers used ideas associated with deep ecology and moral extensionsim[25] to describe nature and human-environment relationships, older teenagers lent towards the language associated with sustainable development, suggesting the normalisation of a sustainable development lexicon. This is an observation that has been made elsewhere by McGregor (2005:426) who found in a study of how Australian environmentalists used environmentalist discourses:

> The desire to be accepted and understood limited the diversity of terms to those that were considered to be socially well-known. The production of subsequent group narratives and knowledges becomes limited, or at least heavily influenced, by the vocabulary which is considered appropriate. These social, as opposed to individual vocabularies provide groups within society a shared linguistic framework through which both knowledge and identity can be constructed.

It appears that in adopting these ideas about the environment, some of the intimacy expressed by younger teenagers in their views about nature is lost. The use of technical-

[25] This is not to claim that respondents were prolific in their use of these discourses; rather that key ideas they held about the environment included the notion that all things that damaged the environment were inherently bad regardless of possible human benefits from those activities.

ecological terms coupled with increasing support for anthropocentric values overrode the emotive and biospeheric notions evident in discussions with younger teenagers[26]. In learning to think and talk about the environment through the framings common within ESD, a more utilitarian perspective was developed by many teenagers (Bowers 2001). This was exemplified in the acceptance of the demise of nature visualised by many of those who took part.

Despite these findings it is important to remember that education is only one of many media which inform young people about nature. Also well documented is the impact of experiencing nature (Leopold 1948; Schultz 2000), especially through play in childhood (Chawla 1998a; Palmer 1992; Palmer *et al.*1998 a; 1998b; Peterson 1982; Tanner 1980). The data from this study suggest that caring about the environment is influenced by a range of factors: outdoor experiences, education, pet ownership, the media and parents (Table 4.32). It is suggested, therefore, that it is not increased levels of environmental knowledge *per se* that is detrimental to nature-based biospheric and relational conceptions of environment, but perhaps the longer exposure to dominant thought systems and familiarity with 'social norms'. For maturing teenagers, exposure to these influences is coupled with increasing economic and social agency, which often values the individualistic and materialistic and, therefore, egoistical interests override relational ones (Bognor and Wiseman 2002). These postulations are explored further in this and subsequent chapters.

[26] Generally younger teenagers seemed more intimate with, and excited about, animals and nature, and were often more able to talk about natural places, dens and favourite haunts in parks and countryside than older teenagers.

5.2.2 Environmental Problems, Environmental Pessimism

It emerged from the data that for many participants, environmental problems represent a catalyst for lay and scientific beliefs about past, present and future human – environment relationships. Although there was some difference in the types of issues that participants in each case study elected to discuss[27], there appeared to be common understandings of the definitions of environmental issues, similar levels of awareness about issues (Table 4.25), and common beliefs about their probable consequences for humanity and nature.

A key observation from discussions about environmental problems was that, from the outset, they were negatively framed. This may appear obvious since environmental issues are innately problematic, but as discussions of problems evolved into discussions of solutions, the negative framing remained and this impacted on respondents' perceived agency to influence change (Uzzell 2000). Significant pessimism was noted in three key themes now discussed in turn: mistrust of institutions and capitalist economies, limited environmental futures, and a lack of faith in 'human nature'.

(i) Mistrust of Institutional and Capitalist Structures

The lack of trust in institutions and capitalist structures voiced by many participants has been observed in other studies exploring people's relationships with the environment, both amongst adults (Bedford 2003; Blake 1999; Burgess *et al.* 1998; Eden 1993; Grove-White 1995; Harrison and Davies 1998; Wynne 1996) and younger people (Macnaughten and Scott 1994). This research in turn finds a niche within literatures of modernity and risk (Giddens 1984; 1990), which observes how the process of

[27] Devon teenagers volunteered more information about global issues that they had learned about from secondary sources, whereas Malagueño teenagers preferred to discuss local, tangible issues.

globalisation has intensified 'questions of personal agency and trust between publics and a wide range of institutions' (Macnaughten 2003:67).

Although the data suggest that Devon teenagers placed more emphasis on the government in terms of responsibility for the environment, and Malagueño teenagers more on the market, differences, were in the main, tokenistic. What emerged instead was a perception that these institutions were in league with each other with the primary purpose of advancing private interests. These beliefs were compounded by the widely held conviction that technological solutions to ameliorate global and local environmental problems already existed, yet were suppressed by government and industry.

This perceived relationship between government, capitalist structures and solutions to environmental issues is worth further exploration. Technological solutions were suggested and discussed the most by teenagers[28]. Several studies suggest that public reliance on technological solutions to environmental issues is detrimental to the success of individual behavioural change strategies. Grob (1991) describes how a strong belief in technological emancipation from environmental problems can hinder participation in behavioural solutions, a theme supported by Hutchinson (1996:11), who states how 'passive, not active hope is central to technocratic dreaming'. These tendencies are fuelled by mistrust of institutions which are seen to control and repress technological solutions. It is unsurprising, therefore, that teenagers had little faith in present legislative solutions for environmental issues, a viewpoint which reflected their mistrust of government.

[28] As a total sample but there were regional differences. In Devon, teenagers spoke about technological solutions the most, then behavioural and lastly legislative, in Malaga behavioural and technical solutions were discussed most often with legislative solutions preferred the least.

It is probable that these perceptions also affected respondents' sense of personal responsibility (Bedford 2003; Blake 1999; Burgess *et al.* 1998; Eden 1993; Grove-White 1995; Harrison and Davies 1998; Wynne 1996) which was expressed through feelings of ineffectiveness in the face of overwhelming institutional and commercial interests (Macnaughten 2003; Macnaughten *et al.* 1995; Macnaughten and Jacobs 1997). Individuals require evidence (perceived or actual) that formal institutions are committed to environmental sustainability to instil confidence in the effectiveness of individual efforts. This suggests that many participants held essentially structuralist conceptualisations of environmental problems wherein the institutions that create them have the power and prime responsibility to solve them.

> Individual behaviour change strategies are inappropriate if macro conditions exist which can be blamed for contributing to the problem or constraining the effectiveness of individual efforts (e.g. companies that do not provide ecologically friendly products, government inactivity) (Roberts and Bacon 1997:89).

Although the majority of teenagers were able to identify the political nature of environmental issues, there was less evidence that they understood the complexities of reconciling the short lifespan of political cycles/terms of office and their environmental policies with long term environmental issues. This may suggest a nascent or partial understanding of the political process, yet participants were far from a-political[29]. Rather, it appears that teenagers in both case study locations suffered from a lack of faith in political and economic institutions to protect them from environmental degradation. The findings revealed how teenagers felt unable to participate in institutional solutions to environmental problems. Although it appears that minors mistrust institutions in similar ways to adults, as minors they are further removed from involvement in civic and political society by virtue of their social position, which may

[29] Participants in both locations were keen to discuss other contentious political topics, especially the Iraq war in which both Spain and the UK were involved as part of 'The Alliance' at the time.

have further implications for their perceptions of personal efficacy and their engagement with environmentalism in adulthood, themes explored further in chapter 7.

(ii) Sustainable Futures

Teenagers felt that environmental problems were sufficiently distanced from their own futures as not to be of concern[30], a conviction compounded by the common belief that the future comprised a linear pathway to environmental, and subsequently, economic and social crisis. Similar results have been generated in other studies. Worsley and Skypiec (1998:214) note how the majority of Australian secondary school students were concerned about the environment and pessimistic about the future, believing that 'things will get much worse unless we make drastic changes to the way society acts'. In this case, the crisis event proved central to how teenagers conceptualised the future, providing a hypothesised juncture at which civilisation either succumbs to, or subjugates, environmental threats. It is, therefore, upon the inevitability of crises that solutions to environmental issues are perceived to depend, which again has consequences for personal agency in relation to environmental issues; the future is pre-ordained, catastrophe is accepted and the contribution of individual efforts to averting environmental crisis is minimised (Bognor and Wiseman 2002).

> There is ... the need to develop forms of environmental literacy that move assumptions beyond both the fatalism of environmental catastrophic thinking and the glib reassurances of macho technocratic dreaming of an easy exit from environmental crisis on planet earth (Hutchison 1996:24; also Hicks 1994; Hutchison *et al.* 1992).

[30] Participants visualised serious environmental events as distant in their own futures as they were still young. This works in contrast to the perception educators have of youth which emphasises their position as critical agents of change in the future and for the future (Fien 2002).

The majority of teenagers concluded that, in the event of such a crisis, legislative structures would lead scientific, technological and behavioural reforms[31]. This is in contrast to their perceptions of present-day solutions for environmental issues in which legislative solutions were the least embraced and would appear to further diminish the effectiveness of behavioural action as, ultimately, solutions are government-led and enforced through legislation.

These beliefs are overtly pessimistic and representative of the 'hopelessness' and 'passive hope' described by Hutchison (1996) in his study of Australian school children's perceptions of the future (Figure 5.2). The value of visualising alternative and positive futures has been recognised as beneficial in raising the perceived efficacy of individual contributions (Fien 2002; Hutchison 1996) and essential in conceptualising the impact of present actions on the future.

> The future does not exist. There is only the present, but within this present, there is the idea that we have a future. And there are also within this present, the attitudes, behaviour patterns and habits that constitute both our history and institutions. The future is not therefore something to be discovered, like an existing terra incognito. The future is to be created, and before being created, it must be conceived, it must be invented and finally willed.
> (Berstecher 1974 in Hutchison 1996:36).

Although methods to instil these ideas as social norms is a difficult task, the most frequently advocated solution is education (Beare and Slaughter 1993; Berstecher 1974; Boulding 1988; Fien 2002; Hicks 1994; Hicks 1996; Hicks and Bord 1994; Hutchison 1996; Sterling 2001). Fein (2002) states that:

[31] This supports their belief that the government is able to dictate how and when technologies are used.

> Education can ensure that all citizens, young and old, are knowledgeable about the changes that are needed, capable of envisioning alternative futures, committed to democratic ways of achieving them, and sufficiently skilled and motivated to work actively for change. This is education for a sustainable future.

However, many contend that the futures dimension has remained a neglected concern (Fien 2002; Hicks and Holden 1995) and needs to be more explicit within mainstream education, combining the language of critique with the language of hope (Hutchison 1996), in order for education to steer a reorientation of popular beliefs about the future and engagement in social and political action to bring about change (Fien 2002). This argument continues it must enable individuals to influence their own futures. This implies participation of the individual in constructing sustainable futures (Lopez 1997)[32] and an emphasis on 'dialogue, not monologue' (Hutchinson 1996:2). However, despite the increasing transparency of environmental information and management (UNECE 1998), and support for the citizen as stakeholder within environmental decision-making forums, teenagers who participated in this project continued to feel excluded (through mistrust for institutions and a lack of social power), which in turn has repercussions for the futures dimension.

[32] Lopez (1997:10) sets out three long term goals for education for a sustainable future: (i) to promote understanding of the interdependence of natural, socio-economic and political systems at local, national and global levels; (ii) To encourage critical reflection and decision making that is reflected in personal lifestyles; and (iii) to engage the active participation of the citizenry in building sustainable development. These goals are in line with the general ambitions of ESD which may indicate that futures education can be tackled at least partly through ESD.

Anticipations about the twenty-first century	Related motivational states
Hopelessness	Low self esteem, feelings of worthlessness, impoverished creative imagination about social alternatives, flight, and violence turned against self or others.
Passive Hope	Bland optimism, technological cargo-cultism, reductionist illiteracies for accommodation to 'future shock'.
Active Hope	Foresight, pro-social skills, appropriate assertiveness, enriched social imagination, action competence, optimal illiteracies for facilitating integration of the personal, the political and the planetary.

Figure 5.2 Hope, Literacy and a Dialogue on Futures
(Hutchison 1996:26)

(iii) Human Nature

Embedded throughout the discussions of environmental problems and possible solutions was the concept of 'human nature', a phrase used by respondents as an analogue for Western economic and social structures, individualism, materialism and consumerism. Whereas these values were considered to be beneficial to quality of life, they were conceived as detrimental to environmental quality. This particular understanding of human nature is again disempowering in terms of individual mobilisation as it insinuates that human nature is innate and perhaps beyond transformation. This in turn legitimates Western values and activities (including individual behaviours) despite their impact on environmental quality.

It is often argued that these conceptions of human nature are embedded within individuals' perception not just of institutions but also of other individuals (Azjen and Fishbein 1980; Kolmuss and Agyeman 2002), as another social norm (Kaiser and Fuhrer 2003). This suggests that normative views about how society will achieve environmental sustainability are overtly pessimistic and broadly accepted.

However, another conception of human nature evident within the data had clear roots in the notion of survivalism[33] (Dryzek 2005; McGregor 2004) and theories of altruism (Shultz 2000; Stern *et al.* 1993). In this conception, when lifestyle and loved ones become *visibly and unquestionably* threatened by environmental issues, action is taken. In this scenario human nature is to defend, but a threat is required to prompt a defence response. This returns to and strengthens the role of crisis as a necessary catalyst for environmental solutions, but also indicates that with strong motivations, traditional conceptions of human nature can be overturned and widespread behavioural change can possibly be attained.

Sections 5.2.1 and 5.2.2 have considered initial environmental perceptions of teenagers in Devon and Malaga. The data has revealed that as teenagers develop they adopt an increasingly relational environmental worldview but that this is paralleled by demise in environmental concern and that the increasing use of scientific discourse seems a pivotal factor in achieving this. This coincides with increasing pessimism about the institutions which are perceived to govern environmental issues and the ability of individuals and society to contribute to ameliorating environmental problems. The most important consequence of these findings for the behavioural agenda is their probable

[33] The key narrative of survivalism is that development is threatening the Earth's capacity to provide for human life and will lead to widespread tragedy unless radical changes are adopted (McGregor 2004), associated texts include Carson (1963), Ehrlich (1971), Hardin (1968) and Meadows *et al.* (1972).

negative impact on personal efficacy and agency. The next section discusses the trends informing participants' environmental perceptions.

5.2.3 Influences on Teenage Perceptions of Environment

Several influencing factors emerged as prominent in influencing environmental perception: education, the media, social knowledge, language, youth and lifestyle, geographical factors, and gender.

(i) Education

Teenagers in Devon and Malaga reported that they learned about environmental problems mainly through education and the media[34]. In considering education, it has been suggested that ESD has yet to find ways of inspiring students to envisage pathways to a sustainable future (Hicks 1994). There is the additional criticism that ESD is causing widespread *general* pessimism about the environment. Worsley and Skrypiec (1998) found a positive correlation between environmental education and environmental pessimism and Loughland *et al.* (2003) revealed that in Australian school children, optimism (associated with relational orientations about the environment) decreased with age. This may be because information about the environment initially leads to greater environmental concern but the many barriers to individual action engender a sense of helplessness (Levin 1993) which can cause a withdrawal of concern (Donn 1999). What is certain is that education about environmental problems still seems to engender pessimistic feelings amongst many school children, suggesting that ESD is, in cases, still failing to inspire young people about the environmental agenda (Booth 1998).

[34] The majority of teenagers in Devon felt they learnt about environmental problems primarily through the media and, secondly, ESD. In Malaga teenagers reported the reverse.

(ii) Media

Media was also identified as a key influence for how teenagers perceived environmental problems. The significance of the media in disseminating environmental knowledge is widely observed (Anderson 1997; Burgess 1990; Hansen 1993: Wilson 1992: Yearly 1992), and as an institution it is often accused of fuelling negative public opinion about environmental problems. Macnaughten (2003) claims that this framing of the environment is deliberately and actively constructed by the media and is at times even constituted as the environmental agenda, since sensationalist news about environmental disasters is pivotal to maintaining audience interest. 'In recent years we have become accustomed to seeing images of a dying planet, variously exhibited in grisly poses of ecological depletion and circulated by all sectors of genocidal atrocities' (Ross 1994:171). This suggests that ideals of survivalism which started the modern environmental agenda[35] and the exploitive and tabloid character of the media (Smith 2000) result in negative and pessimistic portrayals of environmental issues which can again diminish personal agency even if they raise concern. These findings are supported by the statistical analysis in chapter 4, which revealed that although the media were identified as important disseminators of environmental information, this information (although persuasive) engaged hopelessness and encouraged disconnection. It is likely that the media's focus on environmental problems and the pessimism this evoked deterred individuals from active engagement with media portrayals of the environment.

[35] 'The contemporary configuration of 'the environment' in political and civic life is of relatively recent origin. The environment, as a set of diverse problems, had to be gathered up and presented as all symptomatic of a wider, overarching 'global' environment crisis (Szerszynski 1993; Wynne 1994). Beginning around 1962 with Rachel Carson's *Silent Spring*, the so-called 'prophets of doom' helped to formulate a language of 'the environment' radically different from pervious concerns over nature, where the environmental threat came to be regarded in global proportions and linked to dominant values of modernisation and technical progress (Mcormick 1995)' (Macnaughten 2003:65).

(iii) Social Knowledge

Although not explicitly mentioned by participants, the role of social knowledge[36] in the form of inexpertly informed social norms (which circulate through formal media channels and informally through social networks) emerged as significant influences on environmental perceptions. The mistrust of institutions, prevalent beliefs about the future, the constitution of human nature, and discounting of the effects of environmental issues through space and time are ways of seeing the world built upon suppositions rather than truths (O'Neil 1997).

The sophistication of declarative and procedural understanding appeared to increase with age and increased education, yet popular forms of social knowledge remained relatively constant across the age range. This suggests that the influence of social knowledge persists regardless of educational attainment or individual socio-biological development; a finding mirrored in other research. Petocz *et al.* (no date) identify that 'while people may develop the sophistication of their ideas about the environment as they progress through school and pass into adulthood, they do not easily change their essential conceptions of the phenomenon'. They go on to recommend that people need to be 'confronted with their environmental conceptions and other possible ways of seeing the environment, before they can shift from one way of thinking to another'. The importance of this type of strategy is echoed by Kaiser and Fuhrer (2003:604), who note how 'social knowledge can still restrain a person from conduct even when all other forms of knowledge are present'.

[36] According to Kaiser and Fuhrer (2003), social knowledge depends on socialisation and consists mostly of normative beliefs about how to act. It is both conventional *and* moral and requires knowledge of shared social expectations.

Although social knowledge is a cultural product, the similarities between the case study populations were striking the considering geographical and cultural distinctions between the samples (chapter 3). This suggests the presence of a wider culture in terms of common perceptions of environmental issues, a theme supported by the Eurobarometer series (1999; 2002; 2005), which observes that environmental perceptions remain geared to 'pollution in towns and cities' and 'protecting nature' across all European States[37].

(iv) Language

The findings also established that language was a critical factor in how teenagers developed a relational but often unconcerned relationship with nature through the use of increasingly scientised language linked to anthropocentric uses of nature (Bowers 2001; Mcgregor 2004; Mcgregor 2005; Stables 2001). Teenagers in both locations used language representative of root metaphors identified by Bowers (2001:149) which view the individual as autonomous, change as a linear form of progress, and nature as a resource which can be improved upon through rational action, all of which embodies cultural values which limit the development of individuals as critical agents of change. These findings emphasise the influence of language as an important actor in the way the environment, as a set of ideas, is communicated between people.

(v) Youth and Lifestyle

The data has demonstrated that teenagers exhibit many of the same environmental perceptions and beliefs as adults; however, there is evidence that the condition of youth provides an additional layer of significance for how individuals relate to the environmental agenda.

[37] In the 2005 survey, 25% of the sample cited 'pollution in towns and cities' and 22% 'protecting nature' as core problems.

From this investigation of environmental perceptions, it emerges that constructions of youth are strong indicators of lifestyle. A good example of this is how younger teenagers were more likely to play (in nature) and how the language used to describe it was more intimate than is generally the case with adults. For younger teenagers their relationship and experience of nature was a lifestyle-factor which aided environmental concern - an important determinant of pro-environmental behaviours but one which was largely absent within the lifestyle experiences of older teenagers.

Formal constructions of youth similarly played a key role in shaping lifestyles and in directing how participants felt in terms of their ability to influence change. All of those interviewed were in compulsory education within which ESD was identified as raising awareness but also contributing to pessimistic perceptions of the environment. Teenagers, by virtue of their age are also restricted from participating in many political, economic and social processes which govern environmental decision-making. This may contribute to a general lack of confidence in the ability or willingness of government and industry to protect them. Throughout the literature documenting the evolution of sustainable development, participation has been a pivotal theme, yet the teenagers researched seemed virtually absent from these fora.

This suggests that many of the contours which define the lifestyle of 'teenager' are externally defined[38] and are similar across those who participated. Frequently, these influences seemed to limit teenagers' ability to participate in behavioural solutions. However, there is an alternative way to consider this evidence. Although these observations suggest that it is difficult for teenagers to make sense of the concept of

[38] This is also likely to be the case for other population groups.

sustainable lifestyles, it was argued in chapter 2 that many elements of this are accessible to them. It seems logical that teenagers feel both disempowered and excluded in the face of environmental issues. Yet it seems unlikely that continued exposure to ESD and the increasing presence of sustainable development in social rhetoric and practice has not enabled wider positive constructions about environmental possibilities. It may be that teenagers (amongst other cohorts) choose to be pessimistic about the efforts of institutions and about the future, and to using negative conceptualisation of human nature, to aid attributing environmental responsibilities to others. This in turn provides a rationalised defence of lifestyles, which gathers momentum as younger teenagers develop towards full adulthood (Bognor and Wiseman 2002).

It is therefore proposed that in terms of environmental development and identity, the process of youth constitutes a qualitative dimension which has implications for the sustainable development agenda. Many of the lifestyle factors associated with youth serve to dishearten young people in terms of efficacy and distance them from personal environmental responsibility as they lack a sense of engagement, connection, ownership and participation; trends which are likely to have consequences for adult environmental orientation (Hofstede 1992).

(vi) Geography

Despite the commonalities identified, there were several significant distinctions between how Devonian and Malagueño teenagers perceived the environment that are quite likely to result from an amalgamation of geographical factors. In general, they held comparable views about nature, although those from Malaga were less relational in their views about animals and, in both cases, the values associated with relational orientations towards the environment decreased and pessimism increased with age.

Likewise, both samples held comparable levels of awareness of high-profile environmental problems; however, there was divergence in the types of problems they elected to discuss. In Devon, global environmental issues were more popular and the most commonly discussed solutions were technical (perhaps in acknowledgment of the ineffectiveness of personal behavioural change in the face of these issues). In Malaga, local issues prevailed and participants talked a lot about behavioural responses, often in conjunction with local concerns.

It is possible that these trends have significance for self-efficacy. Uzzell (2000:314) describes how 'the majority of individuals do not believe they are responsible or can engage in any actions which will be environmentally efficacious'. Devine-Wright *et al.* (2004:495) explain how Uzzell's findings indicate that the larger the scale of environmental issues, 'the less self-efficacious and personally responsible people tend to feel'. In considering this possibility, there is evidence that the environmental agenda *per se* is generally not as advanced in Malaga as it is in Devon, yet that this may enhance perceived self-efficacy. Setting the wider context, chapter 3 elucidated the later democratisation and popularisation of post-materialist values in Spain and the reluctance of the Spanish governments to adhere to the requirements of European Directives governing freedom and right to environmental information (90/313/EEC) and (2003/4/EC) (Börzel 2000a; 2000b; 2003). Analyses of questionnaire data in chapter 4 suggested that in Malaga there were fewer opportunities to participate in indirect environmental behaviours, including the purchase of green goods, membership of environmental NGOs and donation of resources to environmental causes, suggesting a less developed sustainability infrastructure. In this chapter there was evidence of differences in how language was used between the two geographical locations. In general, Malagueño teenagers were less adroit in their use of language to talk about the

environment. They described nature in fewer ways, suggested fewer environmental problems and technological, behavioural and legislative solutions, and were less aware of animal rights and other groups of ideas synonymous with modern Anglo-American conceptualisations of environmentalism.

Despite these seemingly nascent social mobilisation, environmental networks and market alternatives, the focus of participants on local issues and behavioural solutions corresponds closely with the ethos of 'think global act local'. Additionally, local cultural practice which encouraged participation in environmentally relevant domestic chores (Table 4.11) supports individual feelings of efficacy. Devine-Wright *et al.* (2004:495) write how in particular 'less talented students tend to have higher levels of perceived self efficacy arising form co-operative rather than competitive contexts,' but the evidence here suggests that this could be re-contextualised so as not to represent 'less talented' students, but those who are less directed towards ideas of (often disempowering) global issues. In general it seems that environmental perception combined with local practice allow teenagers in Malaga to feel a greater sense of efficacy in relation to participatory experiences of certain routine pro-environmental behaviours.

(vii) Gender

There were also qualitative differences between the two study groups in explorations of gender. In line with previous research (Hutchison 1996; Worsley and Skypiec 1998), males favoured technocratic and technocentric solutions to environmental issues. However, in this particular case, the older Malagueño males were part of a science class, a fact which may contribute to this view. If this is considered apart from the total sample, there was negligible difference in how males and females perceived

technological solutions. This is, perhaps, another indication of a 'monoculture' of sustainable development.

These discussions suggest that initial perceptions of the environment are significantly influenced by media, education, social knowledge, language, common constructions of youth lifestyle, geographical differences and gender. Although it is difficult to rank or disentangle influences, it can be suggested that their amalgamations has engendered widespread pessimism, feelings of ineffectiveness, and a lack of confidence to influence change in teenagers in Devon and to a lesser extent, Malaga.

5.3 Summary

This chapter has explored the environmental perceptions of teenagers in Devon and Malaga. It has demonstrated that, despite some subtle differences between how teenagers in each location understood the concept of environment, on the whole these perceptions were strikingly similar, with common perceptions of the environment as nature and as a set of interrelated socio- ecological problems. Exploring these perceptions conjured up a range of ideas, ambiguities and fears amongst teenagers in Devon and Malaga. The data reveal that, despite conscious efforts to educate young people in values to protect the environment, environmental perceptions remain overtly negative, exposing an important relationship between initial environmental perceptions and the behavioural components of self efficacy and agency.

This suggests that young people do not encounter ESD as blank canvasses but as social agents who are already influenced by an array of knowledges that hinder catalytic orientation and protect the status quo. Even the youngest teenagers theorised behaviour as a social product wherein environmentally damaging behaviours are seen as a socially

endorsed alternative. It appeared to be incredibly difficult for young people to think beyond these narratives, which were bound up intricately into their everyday lived experiences. Thus, it cannot be solely the task of education to redirect individuals towards pro-environmental behaviours as influences upon these are numerous. For a re-orientation of environmental perceptions amongst teenagers, the wider institutions of government, industry, business and media would need to adopt a more co-ordinated and visible campaign to promote environmental sustainability. However, despite the chapter's emphasis on pessimism, the absence of a highly developed global environmental agenda and local cultural practice in Malaga may have helped to overcome some of the factors hindering efficacy and agency, which could be of great significance to how environmental information is disseminated.

These findings support the general consensus of other literature in this field and suggest that the environmental perceptions of teenagers in this study are similar to those found elsewhere, including many adult studies. However, the analysis also indicates that the influence of youth constitutes a significant qualitative dimension which distances young people from environmental responsibility through the discounting of environmental threats, and social exclusion from democratic participation in formal decision making about the environment. These constraints on how teenagers are able to conduct their lives have implications for their environmental development, as young people are likely to carry their current values and worldviews to their future (Hofstede1992: Schwartz 1994). These themes are now explored further in chapter 6.

---

[i] Mujer 13-14: Es el campo, los parques, los árboles, los animales, los anfibios
Mujer 13-14: Un poquito, pero mayormente los animales
Mujer 13-14: Estamos dentro de la naturaleza, pero no tanto como los animales (ESFG0911)
[ii] En mi opine estamos parte del medioambiente (ESFG1525).
[iii] Los bosques, es que para mi de tirar los papeles al suelo. Que a mi molesta mucho personalmente, yo creo que también otro problema de la basura y todo esto tipo de cosas (Mujer 17: ESFG1242).

[iv] Mujer 17-18En verano hay días que vas el mar, te bañas en la playa y hay de todo lleno de porquerías ahí, que no vale la pena mojarse, sobre todo en Málaga (ESFG1290).
[v] Porque la gente va y come en la playa y deja la basura ahí y la gente no limpia (ESFG05118).
[vi] Tiran cigarrillos, y piensan que no pasa nada, pero todos tiran y el suelo va a parecer un cenicero (ESFG0690).
[vii] Va cambiando la temperatura y cada vez se siente mas
Las plantas cada vez se mueren, se queman (ESFG08603).
[viii] Mujer 17-18: Hace mas calor
Mujer 17-18: El calor mucha tormenta, la sequías y eso nos perjudica a nosotros mismos
Mujer 17-18: Y también las enfermedades como la alergia
Mujer 17-18: Muchísimo
Mujer 17-18: La fiebre y todo eso, pero aquí ha empezando ha hacer frió hasta hace medio mes y todo eso, la mitad del invierno hemos estado con manga corta casi (ESFG12219-)
[ix] Mujer 13014: Si, este verano, en España había muchos incendios por muchos lados de España porque el campo estaba seco, hubo mucho, no llovía mucho, y hacia mucho calor (ESI164286).
[x] Mujer 13-14: Tecnología, yo creo que hay mas cosas eléctricas mas aparatos con la tecnología, lo que pasa es que cada vez contaminan mas porque hay mas cosas eléctricas y hay mas coches y a tecnología lleve las cosas malas por el medio ambiente (ESFG08540).
[xi] Hombre 17-18: Poco y poco hay mas problemas, la gente protesta mas, entonces los políticos para ganar votos y eso pues proponen mas cosas para cambiar el medio ambiente (ESFG10672).
[xii] Mujer 13-14: Un cosa es el tecnología, otra cosa es el hombre, son las distintas causas (ESFG09198).
[xiii] Hombre 17-18: Que ahora mismo nos conviene económicamente.
Hombre 17-18:Porque cabe inventar mas cosas para que haya menos contaminación como los coches, están haciendo meno coches que no necesitan gasolina y la industria sigue mas mueva va a contaminar mas y eso todo el producto de la gente
Hombre 17-18: Además es muy caro (ESFG10932-947)
Mujer 17-18: Yo creo que la tecnología se puede utilizar para mejorar el medio ambiente, lo que pasa es que son muy caros.
Mujer 17-18; Por ejemplo lo de la placa solar.
Mujer 17-18: Eso ahorra le energía
Mujer 17-18: Pero es muy caro ponerla (ESFG15696).
[xv] Hombre 17-18: Porque no se lo ha tomado enserio
Hombre 17-18: Es muy difícil, porque para ponerse todo el mundo en acuerdo, yo que se (ESFG10799)
[xvi] Hombre 17-18: Sabes que el gobierno poner multas, pero ellos son los primeros que no las cumplen.
Hombre 17-18: Dejemos ahí, entre las fábricas, cuesta para poner filtro en una chimenea y las pones la multa, la paga, pero es más barato.
Hombre 17-18: Que cuesta menos, ahora el gobierno quiere poner un filtro, y entonces a la empresa les da igual paga la multa.
Hombre 17-18: Y entonces para la multa no pone el filtro.
Hombre 17-18: También hay multas (ESFG10845).
[xvii] Mujer 13-14: No se, pienso mucho en mi futuro, a lo mejor cuando tenga 30 anos mas, pensar todo esto, asqueroso. Porque si cada vez están las cosas pero y ahora esta España que es asquerosa, dentro de 30 anos que va a haber, un solo rió sin contaminar, no va a quedar una sola playa desinfectada, no va a quedar un solo campo sin talar.
Mujer 13-14: Yo pienso en mis hijos, en mis nietos, ellos si que van a llegar al fin de mundo, como sigamos así, el mundo se va a acabar.
Hombre 13-14: La gente cree que va a pasar eso, pero si la gente no hace nada para cambiarlo, si cada vez es peor, la gente dice que no se daña, y no se daña y listo. La gente piensa se acaba todo y que se empieza de cero (ESFG06803).
[xviii] Mujer 17-18; Yo creo que va a cambiar sobretodo la clima, que vamos a ver la diferencia en ese tiempo del clima y la temperatura.
Mujer 17-18: Yo creo que también en la estructura del, en la forma todo va a ser mucho mas, como se dice, menos natural, mas industrial, mas artificial, y eso, si todo cada vez va haber menos naturaleza también menos materia prima, eso, menos cosa de lo que nosotros podemos disfrutar (ESFG12542).
[xix] Mujer 13-14: Porque la gente no toma conciencia
Mujer 13-14: Va a lugar y pasa una catástrofe para que la gente entiende que haciendo algo mas
Mujer 13-14: Hasta no quedemos si oxigeno la gente no va a cambiar(ESFG06128).
[xx] Mujer 13-14: No se, pienso mucho en mi futuro, a lo mejor cuando tenga 30 anos mas, pensar todo esto, asqueroso. Porque si cada vez están las cosas pero y ahora esta España que es asquerosa, dentro de 30 anos que va a haber, un solo rió sin contaminar, no va a quedar una sola playa desinfectada, no va a quedar un solo campo sin talar.

Mujer 13-14: Yo pienso en mis hijos, en mis nietos, ellos si que van a llegar al fin de mundo, como sigamos así, el mundo se va a acabar.
Hombre 13-14: La gente cree que va a pasar eso, pero si la gente no hace nada para cambiarlo, si cada vez es peor, la gente dice que no se daña, y no se daña y listo. La gente piensa se acaba todo y que se empieza de cero (ESFG06803).
[xxi]Hombre 18-18: Es cuando seamos mayores, tendremos mas conciencia que ahora.
Hombre 17-18: Porque ahora nos dedicamos a vivir la vida.
Hombre 17-18: Ya cuando tenemos familia y eso, tenemos que interesarnos.

Chapter 6

Influences on Pro-Environmental Behaviour

6.0 Introduction

Chapter 5 considered the wider social milieus in which the environment was contextualised by teenagers in Devon and Malaga. However, despite the insights the data provide to understanding teenagers' relationships with the environment, it cannot be assumed that their perceptions, beliefs and attitudes have any direct correlation with behaviour. It is, therefore, pertinent to examine the particularities surrounding teenagers' involvement in pro-environmental behaviours since 'not only are behaviours shown to be complex, and the factors influencing them multiple, but the factors applying to behaviours are also shown to be complex' (Darnton 2004b:16). Recent literature has emphasised the role of identity and lifestyle as important contributors within this web and urges a sharper focus on the context of key individuals and groups.

A range of influences on pro-environmental behaviours were explored through the interviews and focus groups using semi structured questions (appendix 3). Section 6.1 reports the findings in relation to the influences of school, home and peers on participant pro-environmental behaviour in Devon and Malaga. Section 6.2 then discusses these findings in relation to attitudes, families, media and peers. Section 6.3 examines how participants experienced difficulties in transferring their pro-environmental behaviour skills between the different sites of home, school and public space before section 6.4 explores continuities and contrasts evident between the case study locations. Finally, section 6.5 presents a summary of the key findings.

6.1 Influences upon Pro-environmental Behaviour in Devon and Malaga

When considering the influences most relevant to pro-environmental behaviour among teenagers in Devon and Malaga, several foci emerged as significant. Participants encountered opportunities to participate in pro-environmental behaviour within three key sites; the school, the home and public spaces, each of which encouraged particular forms of conduct. These are now discussed in turn.

6.1.1 The School

Schools were important sites in raising awareness and encouraging and maintaining behaviour although the extent to which this was successful depended on a range of factors.

(i) Devon

Devon teenagers made clear distinctions between the forms of ESD they received at primary school compared to secondary and further education. Their descriptions suggest that primary school focused on education *'about'* the environment supported by a strong element of ESD *'in'* the environment. Many participants recounted how primary education was 'fun', fitting in with common constructions of childhood and making the 'environment' and pro-environmental behaviours more relevant and enjoyable.

> Male 17-18: I remember in primary school like we always used to do stuff like helping out the environment, you know recycling and things like that and they try to make it fun...like recycling, you put the can in the bag and little things like that (FGUK04605).

Teenagers remembered primary school staff reinforcing pro-environmental conduct with behaviours labelled as right or wrong and embedded within ideas of being good or bad children. These reiterations were frequent and contributed to pupils' current

understanding of pro-environmental behaviours, indicating how education *'for'* the environment can be propagated within the primary school system and also how critical evaluation was not utilised widely with young children (Table 6.1).

A very different picture emerged when teenagers in Devon discussed their secondary and further education experiences. ESD remained geared towards education *'about'* the environment but there was limited education *'in'* the environment. Although some had undertaken fieldwork expeditions to Dartmoor or the beach, more frequent references were made to the school grounds, which on the whole were seen to be of poor environmental quality[1].

Researcher	Interviewee (s)
	Female 13-14: Its like when you are at primary school and you are told stuff, like not to drop the litter, we would do loads of stuff, like we would do river walks and be looking at all the plants and animals and the litter and stuff, but here you are just expected to know that we should not [drop litter] (FGUK01384).
	Female 13-14: I think we are less conscious of what happens to the environment now because when you start when you are in primary school you are told not to do that do not do this but now you are not and you sort of stop thinking about it so much and it does not become such a big issue to you.
Why do you think that is?	Female 13-14: Because it is not enforced on you so much. Female 13-14: Yeah it is not everyday. Female 13-14: Yeah you lose your sense of ...stuff like that (FGUK01514).

Table 6.1 ESD at Primary Level

[1] However, in the case of the School featuring Force for Change and GAP initiatives, the school buildings and grounds were the site for a continued experiment in pro-environmental technological and behavioural strategies. 'We're getting a new environmental garden and solar panels so you need slightly less energy from the mains' (Male 13-14: FGUK08474).

Despite limited education *'in'* the environment, schools tackled pro-environmental behaviour through a range of approaches, the most prominent being attempts to instil critical environmental consciousness and sustainable literacy amongst students and providing site-based practical opportunities to undertake behaviour (a form of ESD in situ).

Many teenagers discussed a range of environmental issues and solutions (see chapters 4 and 5). However, knowledge levels varied within the sample according to level of education and the ability of students. Generally, there were reasonable levels of understanding about the environment but less awareness of how to contribute to sustainable development. Although students recognised the need to be environmentally literate, some were not confident enough to feel able to contribute to change, suggesting that higher levels of awareness about the environment both increased and decreased Devon teenagers' inclination to performing pro-environmental behaviour (Table 6.2).

> Male 13-14: You have got to know what's happening, it's important to know and you can't help if you do not know what it is, you don't know how to stop it if you don't know how it's done (FGUK02603).

On the whole teenagers' perceived that secondary education provided them with a standard education *'about'* the environment, with a secondary objective of encouraging environmental values. When discussing this, teachers and school policies were felt to be significant. Some teachers were seen as decisive, some were highly motivational as they directly tackled values demanding a reflexive response from students, and others simply

wanted to 'get the job done'[2]. Those teachers who held a personal interest in the environment were more likely to motivate values amongst pupils (Table 6.3).

Researcher	Interviewee(s)
How does it make you feel when you hear about trees coming down and pollution?	Male 13-14: Yeah at times I think sort of like it's a bit silly and things but there's never a full understanding so like no one I know has got a really like well understanding of this stuff to really care about it because I don't know a lot about a lot of trees and stuff I don't know that much about why they get cut down and how it affects stuff so it is like a lot of it is based on understanding. Generally like I don't know a lot so I don't know loads about the problems that there are I know.
But do you worry about these issues?	I don't know it's not that they're far off in the future really I'm not too worried about them because I don't know the consequences and stuff of them so I can't really be worried about something I don't know about, so no I'm not really too worried about them at the moment (INCOMPREHENSIBLE) I'm not terribly worried about it environmentally wise (I03UK205).

Table 6.2 Environmental Awareness and Behaviour

However, inspirational teachers were not the norm and many students considered the environment to be an 'open discussion'. This tended to legitimise opinions which favoured sustainable development being held alongside values which did not (Table 6.4). It appeared that in general, teachers did not explore the moral juxtapositions between the two sets of values, perhaps because it is complicated and takes education out of its 'comfort zone' of authoritative teaching and passive learning. Or perhaps it is a considered judgement that pupils do not yet have the intellectual skills to cope with

[2] In these cases teenagers felt teachers just wanted to provide sufficient information to pass exams and were unconcerned with fostering values.

the morality and ethics of such issues, or that teachers do not have time within the constraints of the national curriculum to devote energies to ESD.

Researcher	Interviewee(s)
	Female 17-18: We did have one teacher didn't we? And she had posters and stuff all around about caring for the environment and she'd write her own posters like little phrases and stuff about caring for the environment and she was a real inspiration for everyone, I mean we got values through it (FGUK04666).
	Female 17-18: I don't think that teachers in secondary schools and primary schools are generally compassionate about these things; they generally seem to want to get things done (FGUK03193).
So you believe it is important your teacher is personally impassioned about their subject?	Male 13-14: Yes really because if they take it as an everyday textbook thing where they drone on about it, it doesn't give the child who's listening an actual value of what they are being taught. I find that with a lot of teachers if they drone you don't really take it in (I15UK230).

Table 6.3 Teachers

Of all subjects, geography and biology were identified as most important in delivering ESD, yet students could take General Certificate of Secondary Education (GCSE) options without including either. This did not reinforce the importance of ESD for lifelong awareness, as many participants chose to not study either of these minimising their exposure to ESD.

> Female 17-18: People who don't take geography and have left school, they just forget about it, they don't seem to care (FGUK13636).

In fact how students coded ESD relationally to other educational themes emerged as highly significant. Learning about the environment *per se* was not identified as beneficial to their academic careers unless one wished to pursue a related profession. This reduced respondents' emphasis on ESD as a universal life skill and reinforced the environment as a niche theme for those with an innate interest (Table 6.5).

Researcher	Interviewee(s)
Is it (the environment) a moral issue or just one that you need to know about?	Female 17-18: I know it sounds strange but its kind of a mixture of both, its like the fact that it is a moral issues that we really should be doing it but then nobody else does really do anything towards it so kind of put across to you in that way. Female 17-18: I think we get taught about it because it's there and it could affect the world in years to come and the opportunity is there for us to act on what we know and those who choose to do it and those who don't just ignore it.
You think education provides you with a structure with which to make your own decisions?	(ALL) Yeah. Female 17-18: But then not everyone makes lateral decisions so… Female 17-18: Because it isn't an issue that comes up in our everyday lives and if it does not concern us, what's the point of worrying (FGUK09405).

Table 6.4 The Environment as an open Discussion

Although it cannot be claimed that these observations directly influenced behaviour, they help to contextualise the way that teenagers perceived the environment and pro-environmental behaviours as fringe concepts. They also suggest that ESD remains an inexact science.

In terms of guiding and maintaining certain behaviours, some schools had separate rubbish provision in classrooms and the occasional water and energy saving poster. However, unless buildings were new and subject to building regulations, school infrastructures lacked obvious signs of a commitment to sustainable development.

Researcher	Interviewee (s)
Do you have many trips out with the school?	Male 13-14: Not with this school but with primary school.
What type of trips did you go on in primary school?	Male 13-14: We went to places like the Eden project and stuff like that.
Why do you think the focus has shifted at secondary school?	Female 13-14: Because it is less important, well they think it is less important because you don't really, to get somewhere when you're older you don't really use the environment to get into university unless you are doing it there (FGUK10441).
	Male 13-14: No, I didn't take geography because it was in a block with ICT and I really wanted to do that, it is worth a fortune in grades so its like if you, you just have to do it really! (I03UK512)
	Female 13-14: I think we only consider the subjects we need for GCSE and A level.
It depends on what you want to be?	Female 13-14: Yeah, it depends on what you want to be.
	Female 13-14; Yeah.
	Female 13-14: If you don't want any relevance to do with the environment like when you go out then you don't really, you're not really bothered and it is just the same as everything else really but if you wanted to be like work for the National Trust or anything then you take it more seriously, you're like more aware of it (FGUK11631).

Table 6.5 Academic Value of ESD to Students

Where information encouraging pro-environmental behaviours was provided (normally through posters), these were usually initiated by individual teachers rather than via a school-wide effort. Consequently, students felt that the information provided was sometimes contradictory and confusing (Table 6.6).

Researcher	Interviewee(s)
	Male 13-14: Yeah but It's different in every computer room they have posters in the computer room, some of them say turn the computers, turn the monitors off or they'll waste energy and the other one says leave it on because it wastes less money.
	Male 13-14: Apparently it takes more energy to turn on a monitor every time because of the starting up than to just leave the monitor on all the time except in the evenings.
Too much information?	Male 13-14: It's so confusing you just can't be bothered anymore so you just do whatever feels right.
	Male 13-14: Or just turn the plug off (FGUK08915).

Table 6.6 Environmental Information around School

The one school in Devon with a policy for sustainable development entitled 'Force for Change' did affect students' reported behaviour. Alongside providing recycling facilities, its main strategy to disseminate this agenda was reinforcement of preferred behaviours[3], which was seen as highly effective in promoting pro-environmental behaviours as part of the school's commitment to sustainability.

[3] Students mentioned posters, assemblies, practical sessions, specific school councils for environmental matters, greening the school grounds, and special status as strategies they were familiar with through 'Force for Change'.

In general, experiential learning was limited and respondents did not see these activities as encouraging pro-environmental behaviours. School recycling schemes and 'litter picks' were the most common experiential ESD cited. Most felt these were stimulating and increased their understanding of the waste produced by society. In most cases, however, school waste systems reverted to their original state once the scheme finished. Many students admitted that they continued to drop litter after the scheme because of disinterest by other pupils.

Another common exercise was to write to councils about local environmental issues. The results were similarly lacklustre; responses (where received) were usually cover letters to the class rather than individual students, thanking them and acknowledging their concerns without specifying what action might be taken. This again invoked apathy and an impression that participation in pro-environmental behaviour schemes can have both positive and negative effects. Participation raised awareness about problems and solutions but did not necessarily result in long-term behavioural changes. On many occasions, it diminished students' belief in their capacity to bring about change.

(ii) Malaga

When participants recalled learning about the environment in primary school, they felt there had been opportunities to learn through experiential education. The most significant event recalled was visiting a tree planting college where they learnt about and planted trees.

At secondary level, ESD was mainly taught through two subjects. Although a specific environmental science subject was sometimes taught in the first year of secondary

school '*ciencias del medio ambiente*'[4], by the second year environment was taught through the natural and social sciences '*ciencias del naturaleza y sociedad*'[5]. Teenagers were taught about environmental problems and how everyday behaviour can impact upon these processes. Teenagers in Malaga felt that being informed about the environment was important and that ESD was useful in their everyday lives. Many felt they were taught values which made them want to adjust their behaviour.

> Male 13-14: The most important thing is to be well informed (ESI14284)[i].
>
> Male 13-14: No, we do not learn only for exams. If you learn and listen and study just to pass exams then that will be for nothing. You have to comprehend and to reason about what they tell you. That is what is important, to learn, not just for exams but to reason (ESFG07172)[ii].
>
> Male 13-14: From the environment....do not throw litter, do not abandon your dogs (FGES0729)[iii].

However, they were also aware that they and others were free to disregard the behavioural changes implied by ESD, a conclusion derived by observing the lack of support across society for sustainable lifestyle choices (Table 6.7).

In addition to providing education about the environment, the school offered what was for many their only opportunity to talk about the environment and to participate in occasional experiential learning[6].

---

[4] Environmental sciences.
[5] Natural and social sciences.
[6] Teenagers reported various excursions. Some went once a year (not exclusively with an environmental theme) and others did not go at all. Although the frequency of experiential education decreased with age, on the whole Spanish teenagers mention more opportunities for school outings. These were usually based around tree planting and litter picking.

Researcher	Interviewee(s)
What do you think is the strongest influence on your behaviour?	Female 17-18: College has the biggest influence on me about the environment. Female 17-18: On daily life. Female 17-18: But everyone just does as they like. Female 17-18: The world does what it wants with this information, because there is so much information, and its all just paper, it does not do anything. Female 17-18: I believe that although we have a lot of information at the moment we are going to do something with it, we disregard it and when people leave school the information stops and they forget it because they have lots of important things to do day after day. Female 17-18: Including school when we were little we went on excursions and they told us not to throw rubbish on the floor and not to spit but at the end of the day it was the teachers who had to clear it up; we did not worry about it and did not do it (FGES12401)[iv].

Table 6.7 Social Responsibility

The behaviour most commonly reinforced in schools was energy conservation. Teachers usually switched off lights when classes were not in use and encouraged students to do the same. However, in general this was the only example of behavioural guidance given. Litter was seen as a contentious issue as very few schools provided sufficient (or any) bins. Schools expected students to take rubbish home[7] but many argued that if the school wished them to recycle they should provide appropriate bins and ensure staff led by example (Table 6.8).

[7] This type of self sufficiency was a common ethos in the schools visited. Another example was the requirement for students to provide their own toilet paper.

Male 13-14: It is important for us not to take so much from nature. If I recycle, for example, three kilos of paper then we will not have to cut so many trees down, we will save three kilos of rubbish and that paper does not have to be produced again. Here in the school the paper for the photocopier is white, if the teachers would use used paper for the photocopies and make calculations on or use recycled paper then we could save a lot of paper. But the recycled paper is not as pretty and the image from the photocopier is not as strong, so the white paper is better but not so healthy for the environment (ESI11251)[v].

Researcher	Interviewee(s)
	Female 13-14: If they want us to recycle then they need to put recycle bins at school because that is where we use paper the most. Female 13-14: Also in the office they need it. Female 13-14; Yes, in the office. Female 13-14: If someone does not say something then no one is going to do it. Female 13-14: there were bins once but they took them away and so now everyone uses the floor (FGES0169)[vi].

Table 6.8 Provision of Bins in School

Where bins were provided, litter was still evident and students blamed this on a range of factors. In general, teenagers disliked litter but struggled to modify ingrained habits.

Female 17-18: In my school we have monitors in the playground and if they see you throwing litter on the floor they should tell you to put it on the bin but what happens in the end is that they do not say anything because they are worried about the reaction from students when they do (FGES12452)[vii].

Schools in Malaga did not provide opportunities to participate in non-activist public sphere or activist behaviours[8]. Although efforts by organisations or the local government were occasionally facilitated by schools these were not perceived to influence behaviour (Table 6.9).

Researcher	Interviewee(s)
Do you ever get the opportunity to write to the local government or another organisation about environmental issues?	Female 17-18: Yes, the world day of environment can raise people's awareness.
	Female 17-18: But no one takes any notice of that.
	Female 17-18: In my town the town government organises celebratory days about water in the schools.
	Female 17-18: Yes, the 6th of July.
And this is through the school?	Female 17-18; Yes but this does not influence anyone.
	Female 17-18: Yes, the school and the local government (FGES121122)[viii].

Table 6.9 Local Government and Schools

Schools in Malaga were nonetheless seen as important sites for learning about the environment and for facilitating practical opportunities for education *'in'* the environment (tree-planting). However, although promoting pro-environmental behaviours were included as part of ESD, participants reported few opportunities to practice behaviours at school. Despite this, the majority of teenagers stated that education was the main medium for learning about environmental behaviour.

[8] Stern (2000) defines support for public policies, environmental citizenship, signing petitions etc. as examples of non-activist public sphere behaviours. He defines committed activism, membership of NGOs *and* active involvement in their protests as examples of environmental activism.

6.1.2 The Home

The home proved to be a critical site for experiencing environmental activism, non-activist public sphere and private sphere lifestyle behaviours as well as the formation, maintenance and modification of habits. Media too was primarily experienced at home and preferred television watching was often dependent on family habits and routines, for this reason the influence of media is reported in this section.

(i) Devon

The dynamics within families reported by respondents were complex; many teenagers stated that their families were not interested in the environment, yet reported high levels of recycling (usually by a parent), suggesting that recycling had become a social norm in contrast to other pro-environmental behaviours.

Families who undertook pro-environmental behaviours over and above recycling participated in a wide range of activities: composting, driving less, monitoring energy use, purchasing organic and free trade products, and conserving water. There were also several mentions of family members participating in activist behaviours via NGOs.

Where family members undertook pro-environmental behaviours regularly, it was usually the mother who drove and maintained behaviours. Mothers were often those making everyday decisions about domestic chores with an environmental component, like methods of waste disposal and energy use, as well as being role models in their children's social development. Grandparents also emerged as important actors who reinforced pro-environmental behaviours as part of preferred social conduct, and in encouraging leisure pursuits such as walking and gardening which brought teenagers into contact with nature (Table 6.10).

On the whole teenagers were unable to explain their (un)sustainable behaviours. They were part of the way they lived and remained largely unquestioned. They did not see a need to evaluate many domestic pro-environmental behaviours, despite many knowing the logical, social, economical and environmental benefits for example, of conserving energy.

Researcher	Interviewee(s)
How are you influenced to feel concern for the environment?	Female 13-14: I don't know about you but it comes from my family, my mum is always going on about it and that is why it is in me, I do not even have to think about it (FGUK01270).
Does anybody else ever feel inspired by anyone they know about the environment?	Male 17-18: Yeah, my granddad, he used to be a farmer when he was younger and he talks about it sometimes and he is really environmentally friendly and he recycles and when I am there if I am drinking out of a plastic bottle he is like 'OK, put that in the recycle bin' and I do, he always tries.
And do you admire that about him?	Male 13-14: Yes, I do, I like it (FGUK03236).

Table 6.10 Family Influence on Pro-environmental Behaviour

Generally, if an immediate family member was interested in the environment and participated in pro-environmental behaviours for this reason, this influenced the child, demonstrating the importance of the family to personal environmental development. This suggests that external interventions like ESD may struggle to motivate individuals raised within home environments that are devoid of such influences (Table 6.11)

> Female 17-18: I think it depends on how you've grown up as well because I, I've grown up like my family are really green and are really into looking after

> the environment so I think it all depends on you know, whether you've been around people who believe in certain things (FGUK04400).
>
> Female 17-18: Because we haven't been brought up to do it, we've got to go out of our way to do it, it's not part of our routine (FGUK09467).

Some teenagers postulated that parents did not participate in pro-environmental behaviours due to a lack of awareness and knowledge about environmental issues and solutions. This suggests the existence of a 'lost' cohort of parents who were educated before the popularisation of ESD, and whose lack of knowledge or concern has impinged on their ability to grasp the significance of pro-environmental behaviours or to embed these behaviours within everyday habits.

> Female 17-18: If we were made to recycle, if it was in our lifestyle and brought up to do it I think that we would it's just that I don't think people like change or are used to change like I doubt that when my parents were my age that a recycle bin would be in their school or anything so that's probably why they don't do it (FGUK09216).
>
> Male 13-14: Most like older people, they're not that bothered 'cos like they don't think its going to effect them and plus they don't know about it. Like if they probably at school, I can guarantee they weren't taught about it because it was, they didn't really (FGUK17538).
>
> Female 17-18: If you ask your parents they don't know that much, they know what they've heard from television and radio and things but they don't actually know that much abut it. They hear all about the crisis and everything but if you ask them abut something specific they don't actually know (FGUK121081).

Teenagers in this situation felt they possessed superior knowledge and awareness to their parents, although this did not always result in attempts to educate parents.

> Male 17-18: Most teenagers aren't just going to make their parents recycle all the glass and everything; we're going to do what our parents do (FGUK13951).

Researcher	Interviewee(s)
	Male 13-14: Yeah I think it is like my teachers do something although they are not that keen but when it's your family doing it as well it like motivates you a bit more.
So you think they are important?	Yeah (I08UK471).
	Male 13-14: And it's like in like examples work more like of your family, like your mum or your dad try to set an example then it works much better on you than it does from like a teacher or someone because you're going to listen, you're going to pay more time to your mum and dad and your family to teachers, so...and you see your parents more often anyway.
So do you think your family, your parents set good examples?	Male 13-14: Yeah.
	Male 13-14: Sometimes.
	Male 13-14: They try to (FGUK06291).

Table 6.11 Importance of the Family to Environmental Development

In cases where children attempted to pass on knowledge, parents responded in different ways (Table 6.12). Although they often supported their children's ideas, they did not always take action. The adult-child relation was therefore usually more powerful in promoting pro-environmental behaviours than the child-adult.

Researcher	Interviewee(s)
What about your friends, do your friends think the environment is important at all, is it something that is ever discussed?	Male13-14: We don't really discuss it much, I think most of them think the same things as me, it's not really something we talk about.
OK, what about at home with your family?	A little bit but it mainly comes from me telling them stuff that we have done at school.
Right OK	About fair trade.
And what did they think of that?	Yeah well they are quite supportive, my dad, at his work they are going to try and put fair trade coffee into the coffee jar and see if anyone notices (I01UK211).
Do you ever go home and talk to your parents about the environment?	Female 13-14: Yeah, if I think its really important then I will go home and say something and say I want to go out and do something, we talk about it but we never really do.
But you do go home and tell them?	Yeah, if it's like, we are doing a project on it and went out and start talking about it then I would go home and start a discussion.
And are your parents interested in this kind of stuff?	Yeah, they do take my views on it and say we want to do something, 'cos they don't really know about it 'cos they were not taught about it in a way.
So they kind of learn through you in a way	Yeah (I10UK681)

Table 6.12 Parents

Many families used semi-natural areas to spend time as a family on outings, holidays and hobbies. Teenagers talked of dog walks on the moors and trips to the countryside, beach, zoos and other practical experiences which the majority of schools did not provide. However, these activities dwindled as children grew older and they were expected and preferred to entertain themselves through media and friends.

The findings of the qualitative sessions generally support those of chapter 4, that teenagers use media primarily for entertainment. Although programmes about animals were often popular with younger teenagers (Table 6.13), programmes about the environment were often seen by teenagers as non-entertaining, educational, and less interesting and, importantly, not what television was used for (Table 6.14).

Researcher	Interviewee(s)
OK, when you see information about the environment on the TV or in a paper, any media form, are you interested?	ALL – Yeah Female 17-18: I record all of 'outback' and 'eco- live'.
I have never heard of those.	Female 17-18: They are documentaries and things. Male 17-18: I watch those on animals but it does not really interest me, the other ones like plants growing and stuff, if its animals I will watch it.
Do you think that comes back to your general interest?	Male 17-18: Yes. Female 17-18: I watch all kinds, all wildlife all kinds. Female 17-18: But it's just not interesting, watching a little flower.

Table 6.13 Programmes about Animals

However, some environmental programmes were regarded as entertaining. The most common example was 'Steve Irwin', the late Australian wildlife enthusiast whose programmes about fauna in Australia involved numerous close encounters with reptiles and animals. These types of programmes were preferred by both age groups (Table 6.15).

Researcher	Interviewee(s)
	Female 13-14: But they broadcast [environmental and nature programmes] it in the most boring way, no but they do, it's just like and the names of the programmes are boring as well it's like 'the nature show'.
Do you think that when you watch TV you just watch it to veg out and that environmental and nature programmes are just like more school?	(GENERAL CONSENSUS) Female 13-14: Yeah you just watch TV to get away from it (FGUK11867).
Do any programmes for younger people present information about the environment? Right OK.	Female 17-18: Newsround[9] do quite a bit at the moment. Female 17-18: Because what we were saying earlier on about the primary schools the children going around picking up litter. Male 17-18: That was on Newsround, yeah but that's because they want children to see it because on the proper news kids don't want to watch that so news round is still kind of acceptable to kids. Female 17-18; And they do quite a lot of like environment stuff that's where I learnt about it. Male 17-18; Newsround! (FGUK14670)

Table 6.14 Television and Nature

[9] The current affairs programme presented daily on weekdays as part of the BBC children's television viewing. Other programmes mentioned were 'Rolf Harris's Animal Hospital' and 'Blue Peter'.

Researcher	Interviewee(s)
Do you think that, if you see like nature TV programmes or programmes about places, about environmental issues, are you interested at all?	Male 17-18: I don't usually ever watch them. Female 17-18: It depends if Eastenders is on. Male 17-18: It depends who is presenting them. Female 17-18; It depends what they're about.
It depends what they're about?	Female 17-18: Yeah my brother watches them all and if they're interesting I'll sit down and watch them with him to pass the time because I get bored. He watches them all. Male 17-18: It depends how they are presented. Female 17-18: Yeah.
It depends how they're presented?	Male 17-18: Yeah because you can get some really, really boring old man presenters who they just like dictating to you like through the whole programme and you just want to fall asleep. Male 17-18: Well no but they just treat you like children. No just something more exciting like if he could, if the presenter could just get in to what he' s doing a bit more and just make it a bit more interesting.
How could they be better presented?	Male 17-18: It's like that dinosaur one where he's running away from..... Female 17-18: Or what's he called the crocodile man. Male 17-18: Oh the Australia lunatic! Female 17-18: I like watching him. Male 17-18:- Steve Irwin. Female 17-18: I always find David Attenborough really boring. Female 17-18: I find him amazingly old. Female 17-18: He just isn't interesting at all (FGUK14727).

Table 6.15 Steve Irwin

In general teenagers believed the media provided a valuable role in prompting the public to think about the environment. However, the extent to which the media engendered environmental concern varied.

> Female 17-18: They can't shock us any more. If they show us some terrible thing about global warming we're just not going to believe it. It's like pictures of starving kids, you know, you've seen so many of them you don't, you think oh there's a starving kid (FGUK09732).

Occasionally teenagers recounted media-based behavioural strategies they had seen. To illustrate, the teenager in Table 6.16 knew how to save energy using a washing machine even though he did not use one at home.

Researcher	Interviewee(s)
	Male 13-14: Yeah and don't wash at 60 wash at 40 save energy now!
Where did you hear that?	Male 13-14: On TV.
	Male 13-14: The green light is on for energy saving!

Table 6.16 Saving Energy

Also important was young people's interaction with environmental activism (see chapter 4[10]). Although some Devonian teenagers recognised the merit of social mobilisation, environmental NGOs were not always seen as appropriate vehicles for this. The most common NGO identified was Greenpeace. However, Greenpeace was seen as failing to drive political change because, in the view of some, protestors were frequently arrested and, therefore, failed to achieve their goal. Consequently, the perception of Greenpeace was one of unsuccessful actions, which tended to distance teenagers from NGO activities (Table 6.17). Teenagers did not identify that some

[10] Chapter 4 reported high levels of awareness of three international (Greenpeace 86.6%, FoE 72.1% and WWF 83%) and two national environmental organisations (NT 69% and RSPB 71.4%) but low levels of individual membership (Greenpeace 1.8%, FoE 7.2%, WWF 5.4%, NT 13.3%, and RSPB 8%).

Greenpeace activities highlighted environmental issues by deliberately courting high-profile arrests. They instead equated arrest with failure. There was further agreement that NGOs were costly to join, difficult to access and were not part of teenagers' social norm.

Despite this perception, in general teenagers believed that NGOs played a vital role in maintaining the environment as a relevant topic. To do this more effectively, teenagers suggested NGOs need to target potential members more explicitly and to retain a more consistent presence in the popular media.

Researcher	Interviewee(s)
	Female 17-18: I don't think they'll listen to you properly either because if like Greenpeace did a campaign they just get like arrested or something and they' re only trying to do the best for their environment and they just didn't want.
Does anyone here belong to an environmental organisation?	Female 17-18: Not allowed to- too young.
Are you?	Female 17-18: Yeah you've got to either be over 16 or over 18 with parental consent either that or a lot of money which I don't think any of us has. Female 17-18: I don't think that's um, I don't think that is advertised well enough. Male 17-18: No. Female 17-18: Without going on the internet I wouldn't really know how to join any environmental group.
Right so you don't think they come looking for you then you think that you have to go looking for them?	Female 17-18: Yeah (FGUK13248).
Do you know anybody who belongs to an environmental organisation?	Male 13-14: No.
No one at all?	That is a problem not enough people do it there are really are not a lot of people who do that sort of thing and I don't actually know any clubs or anything that deal with that sort of thing.
Do you know any national organisations or international organisations?	There's like stuff like WWF like panda fund and stuff. That sort of thing.
You don't belong to anything like that?	No. I don't really know much about it to be honest, again because its not sort of, even when you do little things about the environment they don't like tell you, like give you organisations you can go to its not the sort of thing you see advertised on the telly or anything like that. (I03UK557)

Table 6.17 NGOs

(ii) Malaga

When discussing influences upon pro-environmental behaviour in the home, Malagueño teenagers reported a range of factors which hindered or promoted behaviour[11]. Again prominent amongst these was the influence of mothers (Table 6.18) and to a lesser extent, fathers[12]. Grandparents were also sometimes mentioned, usually in reinforcing behaviour and introducing grandchildren to gardening and other nature-based pursuits. Mothers and fathers were often 'insistent' about their children's behaviour, reinforcing water and energy conservation for economic reasons. Recycling was often instigated by the mother and the children participated by taking bags of sorted rubbish to waste containers.

Researcher	Interviewee(s)
Before I asked you what you can do in your house to protect the environment and you told me to shut the tap, switch lights off and recycle. Where have you learnt to do these things?	Male 17-18: I think from my mother, she tells me about it a lot, she is very insistent about my behaviour.
Do you learn from the school too?	Male 17-18: Yes.
Which do you think influences you more strongly?	There are things that I have learned to do since I was very young, like clean my teeth and shut the tap, switch off lights and not to turn something on unless I am using it (FGES11283)[ix].

Table 6. 18 Mothers' Influence

Water conservation was commonplace amongst the Malagueño sample. Teenagers understood water was an important environmental issue in Spain and the majority conserved water during domestic tasks (Table 6.19).

[11] The following behaviours were mentioned: litter, recycling, water conservation, energy conservation, cutting down on general pollution, reduced car use, walking, reduced dependence on air-conditioning, increased use of public transport, not using aerosols, and proper disposal of batteries.
[12] Fathers were often involved in separating the waste for recycling.

Researcher	Interviewee(s)
When you do these domestic behaviours; shut the tap, switch off the light, conserve energy, this is to save the world or to look after your pocket?	Female 13-14: Both.
Both? So when you shut the tap you do it for environmental reasons?	Female 13-14: Yes, the first thought is for the environment because with water here there is very little and it is a well talked about theme.
You have many problems with water here?	Female 13-14: Yes, it does not rain much here.
Where have you learnt about this?	Female 13-14: From my parents, 'girl, shut that tap!' (laughter) (FGES08320)[x].

Table 6. 19 Water Conservation

Energy conservation was also common. Teenagers in Malaga normally switched off lights when leaving a room. Although many cited economic reasons and parental guidance, respondents also appreciated the need to save money and many felt responsible for conserving the family's finances (Table 6.20).

Researcher	Interviewee(s)
Is there anything more you can do to protect the environment at home?	Male 13-14: No, well, OK you can not use too much water, as not much money comes into the house (FGES05671)[xi].

Table 6.20 Financial Incentive

However, there was no discussion of composting, organic food and other environmentally sensitive products as these were considered hard to locate and expensive (Table (6.21). Furthermore, there was no evidence of teenagers witnessing or becoming involved in activist or non-activist public sphere behaviours at home.

Researcher	Interviewee(s)
	Female 17-18: People consume labels and cheap items.
	Female 17-18: Yes, people buy cheap.
Do you know of any companies or businesses which trade on an 'ecological' image?	Female 17-18: 'Natura', it is natural products.
	Female 17-18: Yes, but it is expensive.
	Female 17-18; It is better because we do not have so many industrial ecological products but I do not know if it is better quality (FGES15734)[xii].

Table 6.21 Locating Green Goods

When discussing why teenagers undertook these behaviours, most claimed they were habitual. Teenagers were aware that certain behaviours had potential environmental benefits but did not always make this conceptual link when talking about them (Table 6.22). This suggests these behaviours are normalised to the extent that they became unquestioned and were no longer associated with discursively informed behaviour.

Although these behaviours were part of daily life, teenagers did not talk about the environment much with their parents and did not believe they were knowledgeable about environmental issues (Table 6.23).

Researcher	Interviewee(s)
Do you do anything to look after the environment at home?	Female 13-14: No.
You don't recycle rubbish?	Oh, that, yes, for example if you have a tin you put it in the right container.....
What else do you do?	Nothing.
Do your family switch off the lights when they leave a room?	Yes.
Anything else?	Do not let the water run if you are not using it, for example, if you have a shower and you are wet then shut off the water so you do not waste it (ESI05358)[xiii].
Do you do anything to protect the environment?	Male 13-14: No.
Nothing?	Nothing, maybe recycle a few things, but apart from that then nothing.....
What about conserving energy, for example switching off lights when they are not needed	Yes.
Why?	To not leave it on, to not use the energy and spend the light.
Do you do this to save money or to save the world?	Because it is custom, I don't know, also for the world, both things.
Where have you learnt to turn off lights, with your family? Here in the school?	I do not know, I have always done it since I was young, I have always switched them off.
OK, do you do anything to protect the environment?	No (ESI04345[xiv]).

Table 6.22 Habitual Behaviours

Female 13-14: When I talk to my parents about the environment, for example if I am given a theme about the environment at school, then they could explain things with more clarity to me but they don't (ESI05391)[xv].

Researcher	Interviewee(s)
Do you think your parents want to recycle etc; is it to save the world?	Male 13-14: It is for the money, because they have to pay for things.
But where did they learn about this?	Male 13-14: In school.
They did not learn anything at home?	Male 13-14: In my house we do not talk about these things.
	Male 13-14: Or in mine.
Can you tell me then where you learnt about these things?	Male 13-14: Since primary.
	Male 13-14: Since we were small, my family says 'don't throw paper'.
	Male 13-14: Recycle the rubbish, do not use much water, all this since we were small (FGES14383)[xvi].

Table 6.23 Discussing the Environment at Home

In terms of family activities that brought children into contact with nature, many Malagueño families followed the Spanish tradition of Sunday picnics in the countryside. Particular spots were favoured but these were subject to degradation and litter problems, which saddened many teenagers. Other than this most family activities were urban based (cinema and shopping), leaving them with few experiences of natural environments.

Female 17-18: Maybe some go and they don't leave (rubbish) but some do and the one who goes next will not like to arrive in the countryside and have the fresh air and everything is natural but it is full of litter. I don't like arriving somewhere to see it all dirty, it is not very nice, really (FGES12161).

Most teenagers in Malaga used media at home, most commonly television. When discussing television, teenagers in Malaga held diverse opinions about environmental representations in the media and their relevance to everyday life. Generally, television was perceived as a powerful tool for transmitting information about the environment and many recognised messages encouraging environmental protection (Table 6.24).

Researcher	Interviewee(s)
Do these types of programmes make you want to protect the environment?	Male 13-14: Yes, they say you should protect it and you should not burn down any trees.
After you have watched the programmes what can you do?	Male 13-14: Not cut down any trees. (FGES05871)[xvii].
Do programmes about nature or the environment make you want to protect the environment?	Female 13-14: They do make you want to protect it. Female 13-14: Because sometimes you get a report that there is rubbish and pollution in the sea and it is a shame. Female 13-14: So it makes people aware. Female 13-14: That there are also consequences to your actions (FGES08160)[xviii].

Table 6.24 Television and Protecting the Environment

However, although television was accepted as an important disseminator of environmental information, only teenagers with an innate interest chose to watch these programmes. Of those who did, interest usually focused on animal programmes, leading many to develop a concern for animal welfare. However, there was no evidence that teenagers made conceptual connections between pro-environmental behaviours and the general welfare of fauna. The chain of processes between animal welfare and domestic

behaviours were too complex to influence behaviours; instead animals were understood mainly in their immediate context and in isolation from other issues

In contrast, a specific government campaign for water conservation enjoyed more success in influencing behaviour. Teenagers were familiar with these strategies and could describe them in detail. Water conservation was treated separately from other environmental issues and teenagers could identify with this because water conservation in Malaga is already normalised. In this case, high public awareness and a historical culture of water conservation motivated widespread public acceptance of a pro-environmental behaviour. Apart from this, the environment was seen as most socially relevant when it featured in the news, usually in the form of disasters.

The data suggest that in most cases television elicited environmental concern but was less influential on pro-environmental behaviours. Furthermore, teenagers perceived that television broadcasted insufficient and incomplete information about environmental issues (Table 6.25) and that, in general, broadcasters were more committed to consumer issues than environmental values.

> Female 17-18: The television incurs traditional values but also incurs many consumerist values, consume, consume, spend, spend...there are millions of adverts to consume and not so many for other things (FGES12957)[xix].

Teenagers described difficulties in translating environmental concern generated through television into action. They felt that the actions of others hindered this and that, generally, messages about protecting the environment were not getting through to the public (Table 6.26).

Female 13-14: In that moment [the programme] convinces you, you say 'today I am going to protect it', but others stop you, they gag you and prevent you, it only works if they agree with you (ESI04235)[xx].

Researcher	Interviewee(s)
Does Andalusia have much environmental propaganda on television?	Female 13-14: More national television than local, there are very few locally. Female 13-14: Here the publicity will say 'don't do something' or 'do recycle', but they never explain what the effects are if you don't recycle or what happens to the rubbish you do recycle. Female 17-18: And for example when you use the tap to not use lots of water. Female 17-18: This will not raise people's awareness properly; I do not want to make the effort if I do not know what is happening as a result of my recycling (FGES12316)[xxi].

Table 6. 25 Television and Environmental Information

Researcher	Interviewee(s)
Do you think the environment receives enough attention on television?	Female 13-14: For me yes and for my friends, yes. But for others I don't think so, because people would not keep building houses or lighting fires in the forests if they were paying attention. Because if they were paying attention they would not do it (ESI06412)[xxii].

Table 6.26 Television Influence on Pro-environmental Behaviour

The majority of teenagers in Malaga did not seek out environmentally themed viewing. They saw the way programmes were presented as turgid and boring and did not believe it to be normal television viewing (Table 6.27). In the main, Malagueño teenagers used television and other media to relax. When teenagers sought information about the

environment it was from other media, and it was usually encyclopaedias or the internet for educational purposes, though they were aware of radio announcements on issues like water conservation.

Researcher	Interviewee(s)
Do you ever watch programmes about the environment?	Female 13-14: The truth is they bore me, if they explained it in a form which was fun then maybe I would like it but I do not like the boring presentation (FGES06927)[xxiii].
Do you think the environment gets much attention on TV?	Female 13-14: Very little. Female 13-14: No, because there is no interest.
People do not want to watch these programmes?	No, the majority prefer to watch programmes about famous people (FGES09395)[xxiv].

Table 6.27 Preferred Television Viewing

6.1.3 Peers

Peers groups emerged as key to the approbation of environmentalism and to a lesser extent, acceptance of pro-environmental behaviours. Peers were not tied to one location but moved between domestic, school and public spaces.

(i) Devon

In Devon, peers generally acted as a barrier against environmental values and pro-environmental behaviour. Peers groups usually felt that the environment was boring, 'uncool' and not a peer concern (Table 6.28), and even in cases where individuals thought about the environment or supported sustainability, they recognised there were barriers to discussing these issues with friends (Table 6.29).

Researcher	Interviewee(s)
When you are with friends do you ever talk about the environment?	Male 13-14: It's just not something we would think about. Male 13-14: Why would we talk about it, it is not like it is a hobby or anything. Male 13-14: There is nothing to talk about. Male 13-14: I don't talk about it; it's not something you would talk about (FGUK15655).

Table 6.28 Communicating the Environment in Peer Groups (i)

Researcher	Interviewee(s)
We mentioned pollution, ozone and noise; do you ever talk to any of your mates about these issues?	Male 13-14: I do sometimes but not a lot, it's not the sort of thing you would talk to your mates about.
Why not?	I don't know, it just feels weird when you are talking about it, like it does not feel right talking to them about it.
Can you try to tell me why?	It just feels awkward, you are talking about what you are doing and stuff and then you come out with like I feel the world should be better 'cos like without cars and stuff, they would laugh at you and stuff (I08UK171).

Table 6.29 Communicating the Environment in Peer Groups (ii)

The same associations that hindered peers from talking about the environment were also reflected in negative stereotypes of environmentalists (Table 6.30).

Researcher	Interviewee(s)
Do you think that people get stereotyped?	Female 17-18: I think um, it's, you know, if you see somebody who wears like, you know, I don't know kind of a flip floppy shoes and funny jeans and you know woolly jumpers and probably long dread-locks and they're sort of walking around with a little, you know, and they're probably vegans as well which food wise are really, really hard to accommodate as well and they sort of they don't, they bring their own mug because they can't possibly waste another paper cup from the cafeteria and things like that, I think they're weird. They might be doing it, I don't even think that most people that do it, do it because they are really convinced that is the right thing to do. Loads of people slip in to it through, you know, peer pressure or their mates are doing it so I've got to do it as well in a way and most people I think it's a phase that they go through. Just like dyeing your hair green when you're adolescent or something and you grow out of it again because it becomes too intense. Mark my words in 10 years time you're going to be looking at a picture of yourself and you're going to think how on earth, why did I ever do that? Male 17-18: You know...tree hugger...you're a lunatic (FGUK12706).
Who do you think sets a good example of environmental practice?	Male 13-14: Hippies! (FGUK081021)
Are you hinting that there is a lifestyle associated with environmentalism?	Female 18: Yeah because you see all those Greenpeace people and stuff like that, a bit like hippy kind of people, do you know what I mean?
Is it positive or negative that 'green' lifestyles are associated with alternative lifestyles?	Female 17-18: In a way it is, but then people do not necessarily think those people are in the real world so they don't take natural issues very seriously. Female 17-18: It's not cool to be a tree hugger (FGUK0946).

Table 6.30 Negative Stereotypes of Environmentalists

This apparent rejection of environmentalism had repercussions for behaviour patterns. In some cases, individuals did not feel they could put litter in bins when with peers. Similarly, individuals who were interested in environmental themes did not always share these with peers for fear of labelling; instead they shared environmental interests with a particular friend or relative. It seemed that peers associated nature and the environment as a suitable theme for younger children but that their (teenage) identities were based on 'adult' pursuits such as leisure and consumerism. Teenagers also categorised the environment as a scholarly issue and part of their academic identities, which they kept apart from their peer identities.

However, there were instances where peers did mobilise over local environmental issues. This was invariably when a green space used by peers was under threat from development. In these cases peers used public sphere behaviours, petitions, letter writing and protests to influence decision makers and often gained support from parents, teachers and other adults. For the duration of these events, their peer identities were enhanced by undertaking these activities, which they enjoyed without the fear of being labelled an environmentalist.

(ii) Malaga

Although stereotypes of environmentalists' also existed in Malaga these were not communicated in the same way as in the Devon sample. Due to the lack of environmental NGOs and public mobilisation around activist and non-activist public sphere behaviours, there was less emphasis on the environmentalist as hippy stereotype. The term hippy instead referred to a fashion rather than an environmental-political orientation.

Many younger girls in the sample were interested in animals and this was often shared with peers. Similarly, many enjoyed activities which took place within nature; sports, camping, fishing but were less motivated by environmental issues. On the whole, peers did not talk about environmental issues unless it was prompted by experience, the media or a school task, and there were no instances where peers mobilised over such issues[13]. The most common topic was litter, which peers were very passionate about. This suggests that the benchmark by which they measured environmental issues and behaviour relatively routine and habitual.

It appears there were limited opportunities for peers to talk about the environment. Many felt that it was not a peer concern, that it was boring and was a topic more suited to school and of relevance to adults. Instead peers were keen to enjoy themselves with friends and leisure (Table 6.31)

[13] However, some teenagers were aware of 'World Environment Day' and 'No Car Day', both of which are celebrated in Malaga.

Researcher	Interviewee(s)
Do you talk to your friends about the environment?	Male 13-14: No. Male 13-14: No, not much. Male 13-14: I don't know.
Why not?	Male 13-14; In reality we talk about other things.
But you think the environment is important?	Male 13-14: Yes sure but we don't think about it to talk. Male 13-14; It's like, we go with friends to play football and play, not to talk about the environment. Male 13-14: And apart from that it would not occur to us to talk about it (ESFG14265)[xxv].
Do you talk to your friends about the environment?	Female 13-14: No. Male 13-14: No.
Why not?	Female 13-14: We are not very interested; we have more important things to talk about.
What is that?	Female 13-14: Boyfriends.
Boyfriends are more important than climate change?	Female 13-14: Than everything (ESFG02274)[xxvi].
Why don't you talk to your friends about the environment?	Female 17-18: If you talk about these things you are considered stupid. Female 17-18: It is a theme for adults. Female 17-18: Yeah, it is not for us to talk about it, we are only kids (ESFG15198)[xxvii].

Table 6.31 Preferred Peer Topics

6.1.4 Transcending Sites

Each individual who participated in the study operated within and between three key sites: school, home and public space. The results from the research strongly suggest that most respondents modified their behaviour according to the 'accepted' rules of each site.

(i) Devon

When Devonian teenagers were asked about their participation in pro-environmental behaviours they reported a list of barriers and motivators which, they perceived, governed behaviour. These included awareness of environmental issues, how to carry out pro-environmental behaviours, cost, habits, provision of opportunities, conveniences and social norms[14], all of which are recognised to influence pro-environmental behaviour (chapter 2).

In addition to these traditionally understood factors, their actions were also affected by their status as minors in several ways, the most salient being concepts of ownership and financial responsibility (Table 6.32).

> Male 17-18: It's, I don't know, you make it your home just like your parents do, you know if the heating needs turning on or anything like that then you do it because like it doesn't really affect you because they're the ones paying the bills and all that so you're just like it's not my problem (FGUK14840).

[14] In general, public spaces were seen as sites where teenagers witnessed social disregard for the environment and pro-environmental behaviours; a perception gained both through virtual (media) and actual experiences. Teenagers identified common signifiers as high volumes of car use, widespread litter and excessive consumption. However, public spaces were also where teenagers could witness conscious efforts to promote sustainable development; recycling, renewable energy and the use of innovative technologies. The processes located in public spaces served as a barometer of the social acceptance of sustainability which was understood mainly through the actions of others.

Researcher	Interviewee(s)
Do you think that, you know you told me all these things that you can do in a house do you think if you were older and you had your own place that you would do those things?	(GENERAL CONSENSUS)
Why would you do it then but you can't do it now?	Female 13-14: Because we don't have to pay for it (FGUK10648)

Table 6.32 Financial Discounting

Although teenagers had little experience as green or ethical consumers[15], they did express some of the social 'orthodoxies' about these types of consumption. Common examples of this were references to the high cost of organic produce and public transport in the UK (Table 6.33). Overall, reasons for (non) participation in pro-environmental behaviour were social and economic, rather than environmental, concerns (Table 6.34).

[15] Many teenagers were unfamiliar with green consumption, as their families did not consume 'green' products. Teenagers were further distanced from green consumerism as they did not participate in grocery and 'white goods' shopping.

Researcher	Interviewee(s)
Do you think when you grow up and you've got your own houses that you'll switch your lights off?	Male 13-14: No. Male 13-14: I won't buy organic food it's twice as expensive.
But then it doesn't have all the pesticides and stuff in it.	Male 13-14: Yeah but it's expensive. Male 13-14: I'll buy the cheap stuff. Male 13-14: Yeah like economy (FGUK06779).
	Male 17-18: They say use public transport as well 'cos it uses a lot less eco units to use the train. Male 17-18: But that will never work unless they improve public transport. Male 17-18: It's not that it is the price of public transport. Male 17-18: Yeah but if it worked and it was good you would not mind paying the price would you? Male 17-18: No, because most people can't afford how much it costs could they? Male 17-18: We have got some of the highest prices in Europe (FGUK03628).

Table 6.33 High Cost of Organic Produce

Researcher	Interviewee(s)
	Female 13-14: Well you say that we destroy the environment by driving around in our cars but we all do lifts to places. And that is kind of helping the environment because you are not all driving a car each. You are fitting as many people as you can in one car and that is helping the environment, so you are still playing your part.
And why do you all give each other lifts?	Female 13-14: To make it better for our parents (everyone laughs) (FGUK01181).
OK. What about switching lights off when you leave your rooms?	Female 13-14: No I'm rubbish at that.
	Female 13-14: My dad goes mad when I don't switch lights off.
	Female 13-14: My mum does it.
Why do you think he goes mad?	Female 13-14: Because it's energy and also you have to pay money for the lights on and also my dad gets mad when my brother just leaves, goes in to our room and turns on the radio and goes in to the next room and then he like walks out again.
	Female 13-14: My mum gets really angry with my sister because rather than like having the blinds open and the light off she has the light on and the blinds closed like in the middle of the day time because she doesn't really need the lights she can open the blinds but she can never be bothered to open the blinds.
Why do you think parents get hacked off about lights?	Because they don't have money to waste and stuff (FGUK11960)
Let me just talk to you about walking, walking and getting the bus or whatever saves the environment, who here ever walks to save the environment?	Male 17-18: I walk a bit.
	Male 17-18: I don't walk to save the environment; I walk because I'm too scared to get a taxi.
	Male 17-18: The buses are too expensive.
You walk because the buses are too expensive?	Male 17-18: I refuse to pay it.
	Female 17-18: I do try and walk occasionally but...
	Female 17-18: - I walk my dog but that's about it. That's really bad isn't it?

Continued on next page

Ok, I'm just curious because, you know, if you do walk it is helping to protect the environment but is that the reason you do it?	Female 17-18: No one goes out and says oh I'll walk today in the pissing rain just to save the environment, nobody does. Male 17-18: I don't think most people have the time to.
You used to walk to school?	Female 17-18: I used to walk to school. Female 17-18: And that used to take about 10 minutes. Male 17-18: - Your parents wouldn't drive! Female 17-18: No but my parents would drive me, I mean they would drive me but I used to walk to school rather than be driven. Male 17-18: Why have your parents got an embarrassing car or something? Male 17-18: My mum used to come with an embarrassing car and I said to drop me off at the co-op and I would walk the rest (FGUK12592).

Table 6.34 Social and Economic Reasons for non-participation in Pro-Environmental Behaviours

Additionally, the majority of teenagers did not think environmental concerns informed day-to-day decision making. Rather they felt these were informed by economic, social, individual-benefit, and logistical factors.

> Female 17-18: I don't think most people do think it's wrong, like I do drop litter and I don't stop to think about it (FGUK121057).
>
> Female 13-14: Not really I think the reason people decide not to buy something is because it's either too expensive or they'll be like it's too big or too small or something I don't think people say just think about how much energy has been used to make that, lets not buy it. I don't think people ever take that in to consideration really (I05UK694).
>
> Female 13-14: I don't know, you never really think like that, you just get in the car and go kind of; you don't think (I10UK581).
>
> Female 13-14: Most people are not thinking about it. It remains a topic which is only relevant in the classroom (I10UK580).

> Male 13-14: Well we're not on a water meter so water we pay annually so it's not really an object water, but electric we do tend to be wary of lights and that, we do have outside lights you know like outside we do have a few lights they stay on all night so that's, but um.. yeah other than that we are quite wary of electric (I15UK299).

(ii) Malaga

When discussing reasons for participation and non participation in pro-environmental behaviours a range of factors were reported including cost, convenience, habits, provision and personal preferences. It was also evident that these affected behaviours according to context. Participants felt that people generally were disinterested in ameliorating environmental problems and used local issues as examples: litter, chewing gum, vandalism, river and marine pollution, traffic and factory fumes, and house building. The role of others' behaviour was critical to how teenagers assessed the wider social acceptance of pro-environmental behaviours.

> Male 13-14: The adults and the kids, in general everyone because the adults leave the dog excrement and the kids drop paper and it is always that way (ESI02128)[xxviii].

> Female 13-14: People know it is wrong, they know not to throw rubbish in the countryside, in the street or in their house but they do not like it, they know it is wrong but it's not important, like it's not my house so who cares (ESFG0881)[xxix].

These events had consequences for how participants perceived the efficacy of their own efforts. Despite widespread recycling at home, many commented how other people contaminated public *contenadores* and how this negated their efforts.

> Female 17-18: For example, here in Malaga we have three distinct containers for waste but no one respects it, no one does it, it is just easier to throw it in any, like normal (FGES1577)[xxx].

It appears, then, that despite environmental concern being an important social norm among Malagueño teenagers, there was only a limited link between concern and

behaviour. Instead, the data indicates that pro-environmental behaviours were closely linked to the norms dictated by different social settings: school, home and public spaces, rather than by individual concerns. It is also noteworthy that the general lack of opportunities in Malaga to participate in activist and non-activist public sphere behaviours reduced respondents overall Ipsative possibility set (Tanner 1999).

Section 6.1 has explored the ways in which teenagers in Devon and Malaga do and do not participate in pro-environmental behaviour and has exemplified shared trends between locations as well as unearthing contrasts which affect participation. These findings are now evaluated in the context of the wider literature informing this thesis.

6.2 Discussion

Chapter 5 described how teenagers in Devon and Malaga held similar perceptions of environment and agreed on common responses to environmental issues. However, although the impact of media and public space was to an extent shared in both case study locations[16], the key institutions of school, family and peers influenced behaviour differently through subtle, yet distinctive means.

These findings suggest that participants understood, interpreted and negated behaviour according to local context. This supports Darnton (2004b) and Stern (2000), who recognise that the distribution of barriers and drivers across society is uneven and advocate that 'observing the differences between sub groups in the population or between different local populations' is 'essential to effective action for sustainability' (Darnton 2004b:26).

[16] Typified by an increasing institutionalisation of sustainability, yet scant public interest in or evidence of positive action.

Section 6.2 discusses the key influences on pro-environmental behaviours emerging from the findings and begins with a review of the common attitudes expressed by teenagers in both locations (6.2.1). Section 6.2.2 then explores the impacts of family relations on behaviour by assessing the contributions of mothers, cost, and family welfare, responsibility, and ownership. This is followed by analyses of the school site (6.2.3), media (6.2.4) and peers (6.2.5) as influencers of pro-environmental behaviours.

6.2.1 Attitude

Attitudes[17] favourable towards sustainable development and pro-environmental behaviours have been observed in studies of teenagers and young people in many parts of the world (Bognor 2000; Bognor and Wiseman 2002; Gambro and Switzky 1992; 1994; 1999; Kuhlemeier *et al.* 1999; Makki *et al.* 2003; Morris and Schagen 1996; Vlahov and Treagust 1988; Worsley and Skrzpiec 1998), to the extent that they have even been described as 'uniform' (Makki *et al.* 2003). However, the relationship between attitude and behaviour remains hotly contested, and while many studies support some relationship between attitudes and behaviours (Borden and Schettino 1979; Dunlap and Van Liere 1978b; Heberlein and Black 1976; Kaiser *et al.* 1999; Oskamp *et al.* 1991 Weigel and Weigel 1978), others doubt that attitudes alone stimulate behavioural responses (Kolmuss and Agyeman 2002).

Although the majority of teenagers in Devon and Malaga often displayed positive attitudes towards pro-environmental behaviours and, in particular, recycling, these struggled to compete with other simultaneously held attitudes. This supports research which identifies the individual as having plural, and often competing, attitudes to environmental issues (Burton and Wilson 2006). During discussions most teenagers employed attitudes guided by moral notions embedded within ideas of good citizenship

[17] Attitudes were defined in chapter 2 as 'a relatively stable and enduring predisposition to behave or react in a characteristic way' (Lexico 2007: no page).

and responsibility; pro-environmental behaviour was thus seen as the *right* behavioural response to sustainable development and all individuals *should* be taking part, yet this did not engender common behavioural responses.

This suggests that through education and the acquisition of social skills teenagers learn certain sets of responses (Morris and Schagen 1996; also Bognor and Wiseman 2002; Payne 2001) that are sympathetic to sustainable development. Morris and Schagen (1996:7) note how Year 11 students in the UK 'can answer questions on environmental issues correctly, but this does not mean they have positive attitudes and behaviour...they can be very knowledgeable and tell you how they should behave – but they don't do it'.

The findings suggest the widespread existence of 'inert' attitudes. Blake (1999) describes how attitudes are likely to be better predictors of behaviour if the attitudes in question are strong relative to their (possibly conflicting) attitudes, and based on direct experience, a view shared by Richmond and Morgan (1977 cited in Morris and Schagen 1996:7);

> If attitudes of young people are to be translated into responsible social behaviour it would appear that these attitudes should be deeply rooted and based upon knowledge, experience and conviction, rather than superficially learned or instilled by indoctrination.

The results of discussions with teenagers in Malaga support these ideas. Local experiences of hotter summers and water shortages resulted in significantly higher levels of concern (Table 4.34) and a common commitment to water conservation. This suggests a reciprocal relationship between attitudes and behaviours which functions better when reinforced by local experiences.

6.2.2 Families

In both case studies the family provided the key site for normalisation and reinforcement of certain pro-environmental behaviours. Normalisation was provided by parental behaviours and by verbal reinforcement. The importance of these actions can be gauged by considering these findings in relation to Azjen and Fishbein's and (1975) 'Theory of Reasoned Action', which positions normative beliefs of how others view the performance of behaviours (and motivation to comply with these views) as important to attitudinal and normative considerations (Figure 2.5). Several themes emerged as key to teenagers engagement with pro-environmental behaviours within families; mothers, cost and family structures and notions of responsibility and ownership.

(i) Mothers

Almost irrespective of family circumstances, parents in both locations used similar strategies to encourage their children to undertake certain pro-environmental behaviours[18] and mothers were often the prime 'movers and shakers'. The benefit of such strategic agents has been recognised elsewhere. Hopper and Nielson (1991), in a study of the 'block leader approach' (in which key individuals pass on information about strategies), found that this form of dissemination was more successful than information-based strategies alone, and Weenig and Midden (1991) found that decisions to adopt energy saving appliances at home were significantly influenced by the informal advice of neighbours and kin, emphasising the importance of face-to-face interaction in communicating trust as well as information.

Despite women's increasing formal role in employment, it is perhaps, fair to say that they still manage the majority of child-rearing and domestic responsibilities in the UK

[18] Commonly embedded within ideas of good citizenship and to save money.

and Spain. This role differentiation has received scant attention within a policy and research culture on *individual* responses to sustainability (Barr 2003; Holdsworth 2003). Although the role of parents is recognised in literature concerned with child socialisation and environmental values (Cornell 1998; Hodgson and Dyer 2003), considerably less attention has been paid to exploring intra-family influences on pro-environmental behaviours[19].

Although gender was not a consistent determinant of environmental concern[20] (Kanagy *et al.* 1994), a series of characteristics[21] have been attributed to females which suggest they may be more receptive to sustainability[22] concepts and practices (Grob 1991; Hawthorne and Alabaster 1999; Klineberg *et al.* 1998; Lehmann 1999; Mohai 1992; Schahn and Holzer 1990; Tikka *et al.* 2000; van Liere and Dunlap 1980) This may help to explain why mothers' occupy a key role in furthering pro-environmental behaviours within families, especially when these coincide with domestic objectives like saving money. Mothers remain significant in driving behaviours which they perceive to be beneficial to the family and in promoting environmental values and behaviours associated with 'good citizenship' (Furman and Erdur 1999; Payne 2005)[23].

The evidence suggests that mothers in Malaga had more success in reinforcing recycling, water and energy conservation with their offspring. One possible explanation for this is that there were more housewives amongst parents of the Malagueño teenagers

---

[19] A notable exception to this has been the research generated by the GAP 'Eco-team' initiatives, which are extensively documented by Hobson (1999; 2001; 2002). Also worthy of note is the Hunter *et al.* (2004) study which found the traditional female domestic tasks induce greater engagement in home based pro-environmental behaviours.

[20] This study did not find environmental concern to be related to gender (chapter 4).

[21] High levels of environmental concern, a strong sense of responsibility, support for government intervention on environmental matters and of eco-centric approaches to sustainability.

[22] Torger and Garcia-Valinas (2006:7) attribute this to 'traditional gender socialisation, cultural norms, the women's roles as caregivers and nurturers, encouragements to be co-operative and feel compassion [which] lead to a higher concern for maintenance of life and the environment'.

[23] The role of mothers in instigating and driving family participation in pro-environmental behaviour research has also been observed by Ballantyne *et al.* 2001 and Hopkins 2005.

due to a social structure that disadvantages women in the workplace[24] (CDEJ 1999) and traditional family values. This resulted in mothers having more time to reinforce behaviours within the home.

(ii) Cost and Family Structures

Although many Devonian teenagers recognised that energy and water conservation had potential financial benefits, this did not drive behaviour. Instead a perception existed that responsibility for conservation lay with whoever purchased the resource, namely parents. This effectively discounted their sense of responsibility until they became financially responsible for use of these resources in the home. Discounting through time and distance has previously been identified in young people (Macnaughten 2003; Morris and Schagen 1996), and these findings suggest that discounting economic responsibility largely explains these observations.

The home in Spain was a site where teenagers were encouraged to participate in low-level behaviours and where parents insisted that teenagers contribute to household tasks and were included in some decision making (Table 4.11). Unlike teenagers in Devon, behaviours with a financial benefit were perceived to benefit the entire family, not just parents. Two plausible explanations are suggested for this. One explanation concerns awareness of financial imperatives as a product of Gross National Income (GNI). Although the UK and Spain both have strong economies[25], differences in comparative incomes may partly explain why families routinely choose those pro-environmental behaviours involving a financial cost. World Bank annual data on purchasing power

[24] Women continue to make up the minority of professional workers in both countries but are more likely not to be in formal employment in Spain.
[25] The World Bank (2005) ranks GNI of 118 countries and places the UK and Spain in fourth and ninth position globally.

parity rates[26] (Table 6.35) demonstrate that, on average, individuals in the UK receive higher incomes than in Spain. In the case of energy conservation other authors have also noted cost as a driver of behaviour (Blake 1999). However limits do apply to this line of reasoning; the money saved must be considered to be worth the behaviour and the behaviour must provide financial returns over the short term (Brook-Lyndhurst 2003; Holdsworth 2003). With less income per capita, it is likely that these criteria are stronger as drivers of water and energy conservation for families of Malagueño teenagers.

Country	GNI per capita ($)	PPP GNI per capita ($)
United Kingdom	28320	27690
Spain	17040	22150

Table 6.35 Purchasing Power Parity Rates for UK and Spain
Source: Adapted from the World Bank (2005: no page)

Economic conditions and cultural traditions in Spain have resulted in delayed emancipation from the family home, represented in the maxim '*vive de tus padres hasta que puedas vivir de tus hijos*'[27] (CDEJ 1999; Landwerlin 2001; Moreno Minguez 2003). Where family members live together for longer, domestic chores and decisions about services and household consumption are more frequently shared. This process develops a sense of collective responsibility, if not to the environment then to family objectives which can include behaviours with an environmental impact. In Malaga there was evidence of a closer relationship between family wellbeing and personal wellbeing, a tendancy noted by numerous authors (CDEJ 1999; Landwerlin 2001; Moreno Minguez 2003).

[26] Purchasing power parity rates provide a standard measure allowing comparison of real price levels between countries (The World Bank 2005).
[27] Live with your parents until you can live with your children.

(iii) Responsibility and Ownership

The data suggest that, in Devon, parents undertook the majority of domestic tasks and that this resulted in children who did not always take responsibility for their behaviours. As noted, water and energy conservation were understood to be the responsibility of the bill-payer and other pro-environmental behaviours such as green tariffs, ethical and organic purchases, financial support of NGOs were often unintentionally 'hidden' from children and not discussed. This led to children who 'naturally' attributed responsibility for even low-level behaviours to their parents on the grounds of responsibility (Blake 1999; Morris and Schagen 1996).

Despite developing generally similar strategies of verbal and practical reinforcement of behaviours in both locations, Devon teenagers were less inclined to respond positively to parental reinforcement. This may be indicative of a general decline in traditional family structures and parental authority together with a tendency towards the 'unbridled sovereignty of I' (Payne 2000:73) characteristic of the lack of collectivism in British society (Harrison *et al.* 1996). Extended family structures (Table 4.3) and a cultural emphasis on family solidarity has created a more tolerant social fabric in Spain between parents and children, with young people being treated more as adults and often having adult friends (CDEJ 1999). This phenomenon is also pervaded within the household where a more equal sharing of household tasks has not only made teenagers more responsive to behaviour stimulated by financial motives but has muted many identity labels attached to some behaviour in Devon as appropriate for adults or children.

Blake (1999:274) notes how 'policy must be sensitive to the everyday contexts in which individual intentions and actions are constructed by socio-economic and political

institutions' and that 'a more equitable distribution of responsibility between different environmental stakeholders' is necessary. He further postulates that barriers to action can be overcome by sharing power and responsibility at different spatial scales. Although Blake principally refers to democratic processes, these ideas are also applicable to the family unit and may help to remove the identity labels which support hierarchal responsibility relationships within families. This analysis suggests that, notwithstanding the disempowering effects of macro-scale agents, a key local agent such as the family can propagate an association of pro-environmental behaviours within notions of good citizenship and privilege family over individual welfare.

6.2.3 School site

Teenagers who participated in this study were generally well informed about the environmental issues, suggesting that ESD has raised levels of awareness. Students also trusted the information they received in school (Macnaughten and Urry 1998; Stern 1999), yet also often described how concrete knowledge[28] was difficult to transform into behaviour (Schahn and Holzer 1990). In considering explanations for this a key factor seems to be the promotion of ESD almost entirely within the confines of the curriculum, rather than an infused ethos.

Many educationalists and academics are critical of the lack of realism within contemporary ESD (Uzzell 1994; 1999) and emphasise the inseparability of knowledge and activity (Hogan 2002).

> Many educational activities are unreal or non-ontological. They 'act' as a type of de-contextualised and disembodied dress rehearsal for what the teacher thinks the learner needs to know. They have the propensity to undermine the

[28] Schahn and Holzer (1990) distinguish two types of environmental knowledge; 'concrete' which is behavioural knowledge which can be acted upon, and 'abstract', which refers to knowledge about environmental processes.

> competence and ability to act on what really is the problematic nature of individually and socially lived experience (Payne 2001:188).

Although one must acknowledge the limitations experienced by teachers and schools in the delivery and promotion of ESD (Calvo *et al.*1998; Morris and Schagen 1996; Palmer and Neil 1994), there is growing support for a form of ESD which promotes attitudes and skills by word *and* deed. Consequently, the importance of the school as a supportive environment for ESD *and* pro-environmental behaviours has gained in increasing recognition. School-wide environmental policies are promoted by a number of authors (Palmer and Neil 1994) and are considered to be an essential vehicle for a convincing rather than just an informative ESD agenda.

> The evidence to date suggests it is not so much the input from any single school course which is effective. None of the subjects' studied by young people were significantly related to the extent of environment action in which they were involved. Rather it is the ethos of the school and the overall importance it accords to environmental education which appears to be a key factor. In other words, it is the culture that the school creates which has the strongest impact on the behaviour of young people (Morris and Schagen 1996:26).

Both the UK and Spain's central government highlight the potential of schools to operate in ways which can inform ESD[29]. Yet the data suggests that most schools remain reluctant to embrace the spirit of this policy. Although there are signs this may change in the UK as environmental policies become integrated into Ofsted criteria and sustainability initiatives begin to be normalised, many schools in both locations were tied to redundant 'systems of provision' (OECD 2002) and patterns of resource dictated

[29] The UK Sustainable Development Action Plan for Education and Skills (DfES2003) states that it will; pursue the highest standards of environmental management across all properties owned and managed by the department and, encourage all publicly funded educational establishments to help them operate to the highest environmental standards. In Spain, the 1992 White Paper '*Libro Blanco de la educación Ambiental en España*' (MEC 1999) recommends that EA should; raise the profile of EA from isolated initiatives to an ethos for all educational institutions; strengthen and improve EA through better training of teachers and contemplate EA in the buildings, structure, planning and organisation of the school system (see chapter 3 for a full list of objectives).

by equipment and funding, and were staffed by teachers who were restricted by timetables, curriculum requirements and work loads (Calvo *et al.* 1998).

This can have negative impacts on students who are rhetorically skilled by ESD but disempowered by school practices. Holdsworth (2003:2) observes how 'people react against being 'talked at' and told what to do without the other party fully acknowledging its own role'. This suggests schools need to promote visible signs of commitment to sustainability and to pro-environmental behaviours (Palmer and Neil 1994) which legitimises pro-environmental behaviours to both staff and students[30].

6.2.4 Media

Media was generally not found to influence direct pro-environmental behaviours in either location. However, this is a difficult relationship to conceptualise precisely as media is less tied to particular sites but does inform general beliefs about environment and society. In comparison to other discursive texts, Morris and Schagen (1996:20) found that 'family background and the role of the school were demonstrably more influential in promoting environmentally friendly behaviour than either television or the press'. However, their study confirmed that television was important in the formation of attitudes about the role of other people and legislation, and in affecting feelings of personal power.

Television nevertheless provided an important comparative 'frame of reference' (Sherif 1936) with which to evaluate the actions of others and identify societal norms. Currently, sustainability competes with norms associated with capitalist and consumerist values. The media are responsible for communicating knowledges which

[30] The visibility of commitment has proved crucial to the social acceptance of some behaviours, noticeably recycling, which has put considerable social pressure on non-participants (Barr 2003; Oskamp *et al.* 1991).

can potentially transform social representations of the environment (Moscovi 1984) but this is dependent on how that information is communicated (Burgess 1999). Teenagers reported negative environmental representations as the norm on television which raised some people's concerns about environmental issues but also induced 'compassion fatigue' (Philo 1993).

Teenagers in both locations believed that television (and other media) had the potential to promote environmental values and pro-environmental behaviours but that these needed to be framed as positive, forward thinking and inevitable. Furthermore, this required programmes that were both informative *and* entertaining. There are signs of policy measures responding to this, the Department for Environment, Food and Rural Affairs (Defra) is now considering using children's programmes such as Newsround and Blue Peter, as well as video games; Sims City and trading card games, to embed environmental decision making more firmly in the everyday experiences of children and teenagers (Madge and Willmott 2004). There is also an increasing range of children's programmes which promote environmental interests and actions as 'cool' and desirable[31].

Media, especially television appeared to influence negatively membership of and participation in environmental NGOs. Many teenagers in Devon felt distanced from NGO activity due to their perception of high profile unsuccessful radical endeavours by Greenpeace[32]. This was somewhat unexpected as citizen groups have long been

[31] The BBC has invested in a series of observational documentaries for children; Serious Jungle (2002); Serious Desert (2003); Serious Arctic (2004), and Serious Amazon (2006), which combine conservation *in situ* with a talent competition for participants. This idea combines conservation with themes from other popular viewing i.e. reality television and has proved extremely popular among viewers and has subsequently won awards from the British Academy of Film and Television Arts (BAFTA) and the Royal Television Society.

[32] This supports statistical findings of low environmental NGO membership and donations reported in chapter 4 (Tables 4.12 -4.15).

regarded to play a key role in highlighting environmental problems (Dunlap *et al.* 1993; Kanagy *et al.* 1994; Morris and Schagen 1996).

In Malaga media were not significant due to low NGO presence in Spain generally (Börzel 2000a; 2000b; 2003). This raises questions about how teenagers learn about and engage in activist and non-activist public sphere behaviour. The lack of interaction with environmental NGOs in both case studies may also be related to processes of globalisation, which are seen by some to have a negative impact on individual engagement in individual civic-political activity. Dekker and Van den Broek (1998:16) stress:

> ..widespread concern about the presumed decline in social and political engagement in Western society.... Civic commitment to the common good is supposed to be eroding, due to various interconnected trends associated with modernisation, rationalization, at the expense of traditional religious values and moral obligations; the ascent of individualism manifesting itself in values of autonomy, self realization and personal freedom; and the concomitant rise of the 'calculative citizen' which hampers pro-social behaviour in general and volunteering in particular.

These findings suggest that a more consistent and balanced portrayal of environmental NGO activities in the media could improve the ways teenagers perceive and interact with them.

6.2.5 Peer Influence

Peers had complex and often contradictory influences on individuals and pro-environmental behaviours. Essentially peer identities focused around sports, entertainment and leisure and the environment rarely featured prominently within this repertoire. Instead, it was considered part of school, a formal activity which did not gain respect from peers. This resulted in a norm of silence between peers about environmental issues and pro-environmental behaviours. Peer group norms instead

seemed preoccupied with consumerism, as Morris and Schagen (1996:12) note: 'market forces and self image appeared to dominate young people's actions rather more than any environmental considerations'. Individuals were reluctant to oppose this ethos, as they believed this could negatively impact on their peer relationships[33].

Several peer processes had particularly strong impacts on behaviour. Although there was evidence that some teenagers in both locations undertook direct pro-environmental behaviours, they were often unlikely to continue behaviour within peer groups unless this was considered acceptable. A common example of peer pressure was the numerous participants who reported recycling at home yet would drop litter with friends. Additionally, negative stereotypes of environmentalists amongst peer groups hindered open support for environmental issues on dialectic and political levels (Morris and Schagen 1996; Lyons *et al.* 2001; Payne 2000). Tanti (2003: no page) observes that although peer relationships are 'an important context for social behaviour throughout the lifespan...in adolescence belonging to a peer group assumes central importance' (also Tarrant *et al.* 2006). This helps to explain the rejection in some cases of environmentalism and the behaviours associated with it.

Where peers became motivated by local environmental issues, this occurred mainly when environmental concerns coincided with peer concerns. These instances were largely autonomous and focused on local issues. Such group initiatives may prove essential to continuing public participation in sustainability and benefiting feelings of personal agency. As Darnton (2004b:22) notes 'group working especially enables people with less personal agency to undertake behavioural change or increase their levels of community involvement.'

[33] The idea that objects possess symbolic properties and can inform identity has become widely researched and accepted. (Jackson *et al.* (2004) provide a succinct summary of this development.

6.3 Transference between Sites

Despite calls by many authors for greater attention to be paid to sites of socialisation and pro-environmental behaviours (Bedford *et al.* 2004; Uzzel 1999; Madge and Wilmott 2004), there remains scant empirical evidence about the ways in which individuals transfer environmental knowledge and skills between such sites. The findings of this study indicate that teenagers in both locations find it difficult to transfer learnt knowledge and skills between sites. This phenomenon appears to be governed by the social norms associated with three key physical sites: families, school and peers, and one 'virtual' one, the media.

The data suggest that the majority of opportunities to participate in pro-environmental behaviours are provided in the home and that routine behaviours here were also likely to be practised elsewhere if provisions existed and, critically, if pro-environmental behaviours became more widely accepted as a social norm. A notable exception to this tendency was when teenagers were with peers, which hindered behaviour. Families normalised certain habitual behaviours, and children's experiences and attitudes towards nature and the environment were often shaped by their relationship with parents and other family members (Gurevtiz 1997; Morris and Schagen 1996; Myers *et al.*1999). However, the data suggest that although pupils learn more concrete and conscious knowledge about environmental issues at school, this site is less influential on behaviour. Furthermore, many teenagers described their difficulty in transferring knowledge and skills from school into other aspects of their lives, including the home where many parents were uneducated and unaware of the significance and relevance of ESD[34].

[34] There were also cases where parents were willing to listen to children's ideas and occasionally to attempt behavioural change as a consequence.

However, literature suggests that children can have a role in introducing pro-environmental behaviours to parents and other family members although many are on the whole 'unquestioning' of family attitudes (Madge and Willmott 2004; Uzzell 1999). Several studies have investigated children as catalysts for pro-environmental behaviours within families (Ballantyne *et al.* 1998a; 1998b; Evans *et al.*1996; Uzzell 1999; Uzzell *et al.* 1994). They conclude that although possible, this process is not automatic and critical barriers exist to children acting as 'environmental change agents' (Uzzell 2003). Several authors have explored these relationships and proposed the following as essential in enabling children to influence the behaviour of adult family members

- Parents and children must be willing to communicate environmental issues;
- The environment must be regarded as an appropriate topic of discussion;
- The child's opinions must be valued sufficiently for the parent to concede the role of expert to the child;
- The child must be interested in the environment;
- Higher levels of environmental consciousness amongst parents made transference easier.

(Ballantyne *et al.* 1998b; Uzzell 2003; Uzzell *et al* .1994).

From the evidence of this study situations where all these criteria were met were the exception rather than the rule (Uzzell 2003). However, the findings have relevance for literatures exploring these themes. Uzzell (2003: no page) and others (Breiting 2000; Jensen 2002; Jensen and Schnack 1997; Lopez et *al.* 2004; Schnack 2001) make the distinction between traditional learning scenarios, where information is passed from teacher to student and that of 'action competence', 'a consciously solution-orientated

approach to societal problems...a positive approach to co-operative decision-making, a respect for democracy and an understanding of participatory processes' (Uzzell *et al.* 1994: 12-13). For action competence to be achieved, Uzzell (1999) calls for alternative symbiotic models of school and community relationships, whereby schools act as social agents dealing with actual environmental problems, breaking down barriers between the school and the local community and carrying out ESD in local communities (Figure 6.1). (Also Morris and Schagen 1996; Robinson and Shallcross 1998; Robottom and Hart 1993).

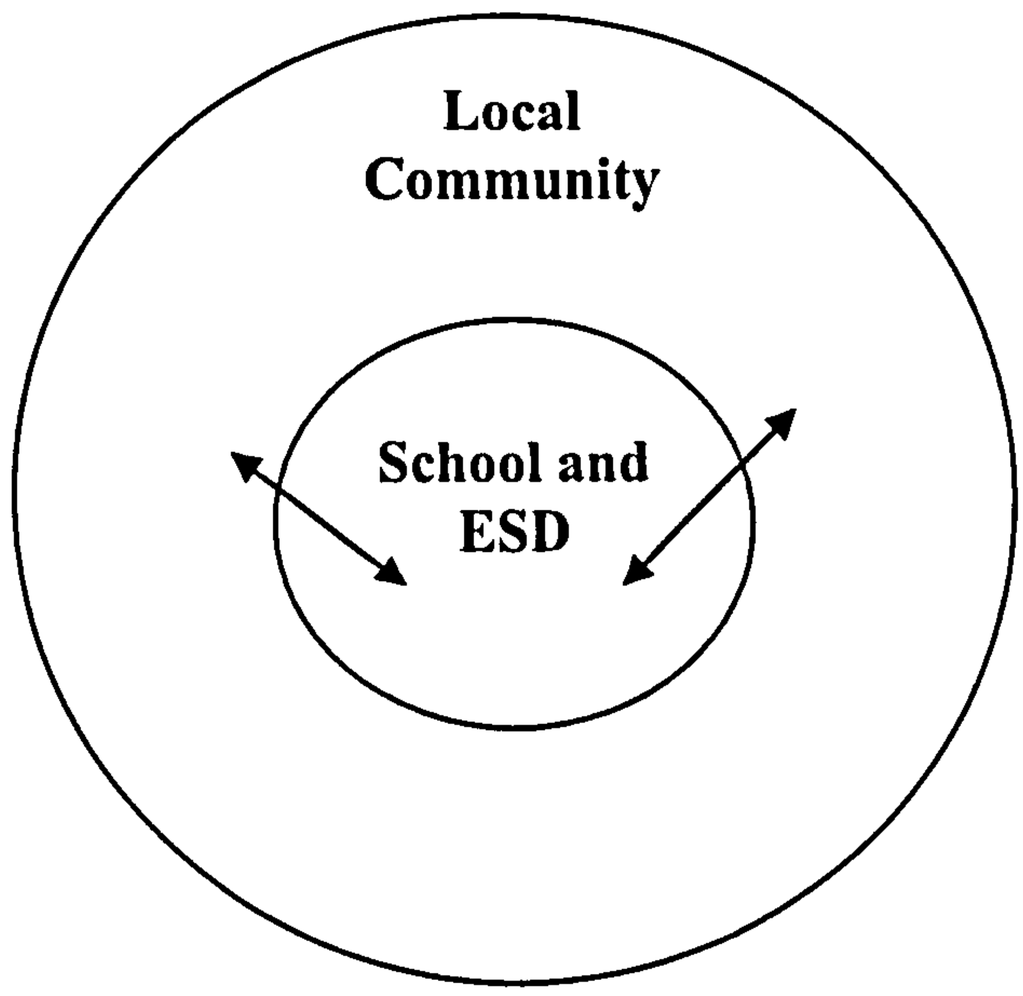

Figure 6.1 The School as Social Agent

(Adapted from Uzzell 1999:19)

> Sustainable behaviour based on knowledge and awareness should not be regarded as an accepted given but as socially constructed which informs purposive human actions within the context of people's lives and society. This kind of approach to ESD both alters our understanding of the nature and scope of environmental and sustainable education and changes markedly our appreciation of the relationship of the child and the school to the local community. A strategy addressing genuine environmental problems by means of establishing a partnership between children, the school and the local community will encourage the development of action competencies for pupils as well as effective environmental action and environmental change in the local community (Uzzell 2003; no page).

The educational principle of action competence appears to offer one promising pathway for aiding the transfer of pro-environmental behaviour skills by bridging the gap between schools and local communities on sustainability issues by increasing family participation, and thereby reducing the barriers children experience when transferring skills learnt at school to the home. Both the Sustainable Development Action Plan for Education and Skills (Dfes 2003) and the '*Libro Blanco de la Educación Ambiental en España*' (MEC 1999) include objectives to harmonise education and community objectives. However, the findings here suggest that, as yet, these commitments remain largely rhetorical.

In addition it seems that in many cases, the environment sits uneasily with teenage identity which can hinder the application of learnt knowledge and skills. Peer groups transformed concern into action best when they were able autonomously explore public sphere non-activist citizenship behaviours directed towards relevant, local social issues, and this required an Ipsative possibility set (Tanner 1999) which included activist and non-activist public-sphere behaviours. These occasions seemed to enhance individual and peer identities for the duration of the action. This demonstrated the importance of alternative 'teaching' as a way of affecting young people's conscious efforts to practice pro-environmental behaviours, opportunities which were largely absent from the Ipsative possibilities of Malgueno teenagers.

Uzzell *et al.* (1994: 215) argues that 'Educational programmes alone are insufficient to bring about change'. However, De Young (1996) and Rickinson (2001) postulate that durable changes *can* be facilitated by utilising techniques which combine detailed information, feedback about performance and a supportive social environment. In considering the distinctive influences provided by key sites, it seems that a consistent

'supportive social environment' remains, as yet, an ideal. An effective vehicle for negotiating the varied influences of sites on teenagers would therefore require information and authoritative behaviour reinforcement which is legitimate, relevant, consistent and maintained within and between sites. This is considered further in the next section.

6.4 Continuity and Contrasts

The findings of this study have confirmed the existence of several continuities and contrasts between the various sites that influence teenagers' involvement in pro-environmental behaviours in Devon and Malaga. Certain low-level behaviours were more consistently practiced in Malaga than Devon due to the convergence of economic motives and collectivist traditional family structures. Conversely, Devonian teenagers experienced a broader Ipsative possibility set of behaviours which provided more opportunities to explore alternative pathways to action but these were less frequently transferred between sites.

Low level behaviours in both case studies were, nonetheless, normally embedded within habit and were only rarely practiced as a result of conscious, discursive intentions. Stern (2000) notes similar differences between coincidental behaviours and those undertaken with the express *intent* to protect the environment and the data suggest that the former are dominant. This has repercussions for a lifestyle analysis of pro-environmental behaviours as a representation of partly conscious decisions to live according to particular sets of beliefs and values.

The behaviours that included conscious environmental considerations were mostly indirect: the purchase of green products, vegetarianism, volunteering, membership of

environmental NGOs and other 'political' actions. Barr (2003:229) observes how 'those who have greater access to services such as recycling schemes, local bus services or the opportunity to purchase 'greener' produce are more likely to be pro-environmental' (also Derksen and Gartell 1993; Guagnano *et al.* 1995; Holdsworth 2003)[35]. This suggests that greater provision elicits a greater response. However, the data from this study suggest this is not a straightforward relationship and that economic, cultural and inter-personal relationships are also key drivers of and barriers to pro-environmental behaviours. Although green products are difficult to access in Malaga, the lifestyle index (Table 4.16) demonstrates that overall, participation in vegetarianism, green produce consumption, NGO membership and volunteering as low in both locations[36], with Devon teenagers in particular citing a variety of concrete and constructed barriers, including financial disincentives and discounted responsibility.

Although several authors suggest that it is unlikely the adoption of pro-environmental behaviours will automatically lead to the adoption of others, a phenomenon known as 'response generalisation' (De Young 1993; Dwyer *et al.* 1993; Schultz *et al.* 1995), it is probable that opportunities to consider the environment in decision making has the potential to stimulate a more practical and reflexive approach to pro-environmental behaviours in general. Exposing routine behaviours to critical evaluation has been found to be beneficial in exploring people's interactions with low-level behaviours (Hobson 1999; 2001). This approach, if applied more generally to pro-environmental behaviours, may help to reduce the conceptual distances recognised to exist between understanding, concern and action:

[35] Conversely, Bedford (2002) describes how willingness to undertake pro-environmental behaviours decreases when the number of sustainability issues an individual is expected to address increases.
[36] Although the lifestyle index reported participation in indirect behaviours in Devon as significantly higher (Devon 1.37/5, Malaga 0.93/5, $p<0.05$), the results still demonstrate low participation overall.

> Environmental concern and basic environmental actions (such as recycling) are becoming widespread throughout the population, but few people take environmental actions which involve changes to their lifestyle. Effectively this means that the environmental actions people take are tokenistic and may be *unrelated* to the particular concerns that they express about the environment' (original italics) (Blake 1999:262).

These findings indicate that despite the dissemination of the tenets of ESD, teenagers' responses to environmental concern remain circumscribed by the Ipsative possibilities available to them and the influence of intimate inter-personal relationships. This suggests that a critical evaluation approach where idiosyncrasies of local environmental and community and home issues are taken into consideration could be beneficial when formulating ESD.

6.5 Summary

This chapter has reviewed the relationship of participating teenagers' with pro-environmental behaviours and has highlighted that, although teenagers in Devon and Malaga appear to be concerned about similar environmental issues, their responses are constrained by local social and cultural context. Teenagers in Malaga are less able to reproduce the types of social relations which drive public sphere political activity and change, but consistently perform low-level behaviours due to the interplay of cultural and economic factors. Conversely, in Devon, low-level behaviours are practiced less consistently but teenagers have greater opportunity to participate in alternative pathways to action.

The contribution of families to their children's environmental development is a key finding of this thesis. Families and the home can thus be conceptualised as 'hubs', where the interplay of economic, social and cultural influences converge to evoke distinct behavioural responses.

> There are silences ...about how parents and families negotiate, construct and enact pro or anti environmental behaviours, or are indifferent to the environmental problematic. Little is known about the relationship or the availability or not of household resources and children's interest in, concern about or commitment to the environment (Payne 2005:81).

These findings suggest that further research into families as a site of environmental socialisation is essential to understanding how pro-environmental behaviours are communicated to children and to understanding how ESD is, and can be, disseminated. Furthermore, the findings raise doubts as to the appropriateness of current policies which focus on *individual* behaviour rather than the social networks in which young and other people derive information and form their environmental identity.

> While we can address the problem of sustainability at the individual level it would seem that any long term environmental and sustainable strategy has to be located in the relationship which exists between people in the community and the relationship between those people; individually and collectively, and their environment (Uzzell 2003; no page).

The chapter has highlighted the importance of striving for greater continuity on messages about sustainability within and between sites since the current incongruence between these sites enable teenagers to opt out of pro-environmental behaviour and restrict the development of individual environmental responsibility. Key to this process is the integration of peer interests and ESD as a means of authenticating the relevance of environmental issues to everyday life routines. The findings of this chapter also suggest that although teenagers are unlikely to contribute to pro-environmental behaviours for different reasons than adults, the conditions they operate within are constrained by their distinctive social circumstances, which may contribute as barriers to behaviour. The findings presented here and in chapters 4 and 5 are now evaluated in chapter 7 which

considers their contribution to current knowledge about the relationship between pro-environmental behaviours and teenagers as a particular lifestyle group.

---

[i] Hombre 13-14: Lo más importante es que estés bien informado (ESI14284)
[ii] Hombre 13-14: Porque no solo es importante los exámenes, si uno , no se, si tú aprendes, escuchas, estudias, para aprobar eso no te va a servir de nada, tienes que comprender y tienes que razonarte lo que te están diciendo y yo creo que lo importante es eso, aprender, no solo para los exámenes, yo creo que lo importante es razonar (ESFG07172).
[iii] Del medio ambiente, no tirar las cosas al suelo, a no dejar perros abandonados (FGES0729).
[iv] Investigador: Otra vez, una cosa es la escuela, si como viven aquí, en tu vida diaria como es acerca con el medio ambiente.
Mujer 17-18: En el colegio te dan más influencia sobre el medio ambiente.
Mujer 17-18: En la vida diaria.
Mujer 17-18: Todo el mundo hace lo que le da la gana.
Mujer 17-18: Todo el mundo hace lo que quiere, y esa información, porque aquí tenemos mucha información, pero en información son papeles.
Investigador: Claro.
Mujer 17-18: Yo creo que nos informan mucho pero a la hora de la práctica sobretodo, a lo mejor mientras quizás te lo están diciendo te acuerdas pero sobretodo cuando dejas ya el colegio o dejan de dar ese tema te lo olvidas y tienen muchas cosas importantes que vamos viendo día a día.
Mujer 17-18: Como no lo llevas a cabo.
Mujer 17-18: Incluso en el colegio, cuando éramos pequeñas hacíamos excursiones que nos decían no tirar los papeles al suelo, o lo que tires lo recoges y al final del día acababan recogiendo la basura los profesores y los niños no se preocupaban, por lo menos las que yo he estado.
Mujer 17-18: Si es verdad (FGES12401).
[v] Hombre 14-14: Hombre, es necesario en parte si no saca de la naturaleza tanto materiales, porque reciclar a nuevo, reciclar papel, porque si reciclo lo nuevo, 3 kilos de papel, por ejemplo, ya no tiene que cortar un árbol y 3 kilos ya no son. Ya no tiene que cortar 3 kilos más y tiene para hacer papel. Porque aquí en el colegio, aquí me parece en la fotocopiadora son folios blancos pero insistiendo a los profesores, a lo mejor, si te traen para sacar fotocopias si es blanco, pero si te traen folio reciclados para hacer las cuentas, o lo que sea te traen folios reciclados que son más feos; también la imagen que lo blanco lo veo mejor yo que seno, mejor como más presencia menos presencia que lo otro (ESI11251).
[vi] Mujer 13-14: Si quieren que reciclemos el primer sitio donde tienen que poner los contenedores es en el colegio, porque es donde más se utiliza el papel.
Mujer 13-14: En la oficina, también.
Mujer 13-14: Si, en la oficina.
Mujer 13-14: Entonces en los colegios tiene que haber un contenedor.
Mujer 13-14: Si no decimos nada, entonces ellos no van a hacer.
Mujer 13-14: Dicen que en una época había contenedores de papel, pero ahora ya no hay, porque para subir el camión de la basura y todas esas cosas y recogerlo (FGES0169).
[vii] Mujer 17-18: En mi colegio había guardas de patio, te dan un lazo en el brazo durante el recreo tenias que estar por el patio y a quien veían tirar algo en el suelo le tenían que decir tira a la papelera, que pasa al final, porque no andabas diciendo porque tenías miedo que te hicieran algo (FGES12452).
[viii] Mujer 17-18: Si, el día mundial del medio ambiente pueden aprovechar para concienciarlos.
Mujer 17-18: Se pueden hacer pero no se hacen.
Mujer 17-18: En mi pueblo se hace el día del agua, el ayuntamiento organiza para que se hagan celebraciones en el colegio.
Mujer 17-18: 6 de Junio.
Mujer 17-18: Pero hacer eso no tiene efecto ninguno.
Investigador: ¿Pero esto fue con la escuela, no?
Mujer 17-18: Si.
Mujer 17-18: Si y con el ayuntamiento (FGES121122).
[ix] Investigador: Antes yo pregunté que puedes hacer en tu casa para proteger el medioambiente y tú me dijiste, como cerrar el grifo, apagar la luz, y reciclar la basura, ¿De donde aprendes como hacerlo?
Hombre 17-18: Pues de mi madre, me dice mucho, y sobre todo insiste mucho en que lo hagamos.
Investigador: ¿Aprendes esto en la escuela también.
Hombre 17-18: Si.

Investigador: ¿Donde es más fuerte de la casa de tu familia o de la escuela?
Hombre 17-18: Hay cosas que desde chica, como mientras me lavo los dientes que no deje el grifo abierto o que apaguemos la luz que no dejemos encendida que no estemos utilizando.
Investigador: Claro.
Hombre 17-18: Todas esas cosas que un granito hacen que uno sepa.
[x] Investigador: ¿Pero estas cosas de apagar la luz, cerrar el grifo, es conservar la energía, es por salvar al mundo o por cuidar del bolsillo?
Mujer 13-14: Las dos cosas.
Investigador: Las dos cosas. ¿De en serio las dos cosas, cuando tú cierras el grifo tú piensas en el medio ambiente en la energía o no piensa en nada?
Mujer 13-14: Al principio pensaba en el medio ambiente, que hay poco agua, porque se hablaba mucho de ese tema.
Investigador: ¿Acá tiene muchos problemas con el agua?
Mujer 13-14: Si, no llueve mucho.
Investigador: ¿Pero de donde aprenden ha hacer estas cosas, a cerrar el grifo, apagar la luz?
Mujer 13-14: De mis padres.
Mujer 13-14: Niña cierra el grifo (Risas) (FGES08320).
[xi] No, bueno, no puedes usar mucha agua porque no mucho dinero viene a la casa
[xii] Mujer 17-18: No, la gente va a consumir las marcas, por la plata.
Mujer 17-18: La gente va a lo barato.
Investigador: Hay muchas compañías que tienen propaganda acerca del medioambiente, yo solo conozco dos uno es .....(nombre 20:30) es muy verde esta, y hay otros negocios que tienen estas propagandas.
Mujer 17-18: 'Natura'.
Mujer 17-18: Natura, son productos naturales
Mujer 17-18: Pero ..... es caro.
Investigador: Es caro, si.
Mujer 17-18: Y ecologista, 'Natura', también.
Investigador: Pero yo pienso que el medioambiente es caro, pero piensan que los productos de marcas tienen igual valor que otra marca.
Mujer 17-18: Es mejor, porque no tiene tantos productos raros de industrias, pero no se a lo mejor es de mejor calidad
[xiii]Investigador: ¿En tu casa, tu familia hace algo para proteger el medio ambiente?
Mujer 13-14: No.
Investigador: No reciclan la basura.
Mujer 13-14: Ah, eso si.
Investigador: ¿Cómo hacen?
Mujer 13-14: Pues, por ejemplo, una lata si la tienes que tirar, lo echas en el contenedor de los cristales.
Investigador: ¿Y algo más?
Mujer 13-14: No dejar el agua corres si no estas usando, por ejemplo, si te duchas y se estas mojado apagar el agua, no dejarla correr, para que no falte agua nunca.
Investigador: Bueno, como cerrar los grifos, si (ESI05358).
[xiv] Investigador: Bueno, yo necesito recordar esto. Nosotros hablamos mucho pero no con respecto al medio ambiente. (Risas). Yo quiero preguntarte si tu familia hace algo para proteger el medio ambiente.
Hombre 13-14:No.
Investigador: ¿Nada?
Hombre 13-14: Nada, si reciclar algunas cosas, pero aparte de eso nada.
Investigador: Si, reciclar algunas cosas si ¿Tu sabes como reciclar?
Hombre 13-14: Eh.
Investigador: ¿Sabes como reciclar?
Hombre 13-14: Si.
Investigador: ¿Que pasa con la conservación de energía, apagas las luces cuando no estas en el lugar?
Hombre 13-14: Si.
Investigador: ¿Por que?
Hombre 13-14: Para no dejar encendidas, que gasta luz.
Investigador: ¿Esto es para salvar al mundo o para ahorrar?
Hombre 13-14: CG: Puede ser que por costumbre, no sé, también por el mundo, las dos cosas.
Investigador: ¿Dónde aprendes esto de apagar las luces, con tu familia, acá en la escuela?
Hombre 13-14: Yo no sé, siempre, no sé dónde aprendí, de chico, la apago de siempre (FGI04345).
Investigador: Bueno ¿Hacen algo patrocinar el medioambiente?
Hombre 13-14: No.

[xv] Mujer 13-14: No se, porque cuando yo hablo con mis padres del tema del medio ambiente, por ejemplo, si estamos dando un tema en naturaleza, de eso, pues él me explica las cosas de eso con más claridad, pero no me dice nada de eso.
[xvi]Investigador: Porque piensan que sus padres dicen por salvar al mundo.
Hombre 13-14: No.
Investigador: No.
Hombre 13-14: Porque es por el dinero, porque hay que pagarlo.
Investigador: Pero de donde aprenden todas estas cosas.
Hombre 13-14: En el colegio.
Hombre 13-14: En el colegio.
Investigador: Si, nada aprenden en la casa.
Hombre 13-14: En casa no se habla de eso.
Hombre 13-14: En mi casa no se habla.
Investigador: Ustedes pueden decirme desde cuando aprenden estas cosas.
Hombre 13-14: Desde primero.
Hombre 13-14: Desde chicos siempre nos estén diciendo cosas, nos dicen del papel.
Hombre 13-14: No tirar los papeles.
Hombre 13-14: Reciclar la basura, no usar mucha agua, desde que somos chicos (FGES14383).
[xvii] Investigador: ¿Estos programas hacen que quieras proteger el medio ambiente?
Hombre 13-14: Si, dicen que hay que protegerlos porque sino pueden arder los bosques y todo eso.
Instigador: Pero después de ver esos programas, si tú quieres proteger el medio ambiente, ¿que puedes hacer?
Hombre 13-14: No talar los árboles (FGES05871).
[xviii] Investigador: Este programa de la naturaleza o medio ambiente, ¿hacen para proteger el medio ambiente?
Mujer 13-14: Es que lo queremos proteger.
Investigador: Si.
Mujer 13-14: Yo si.
Mujer 13-14: Porque ves algún reportaje del mar y ves como lo dejan le echa basura es una lástima.
Mujer 13-14: Que la gente se conciencie.
Mujer 13-14: Si porque también te da las consecuencias (FGES08160).
[xix] Mujer 17-18: La televisión inculca valores tradicionales e inculca muchos valores de, consume y consume y gasta y gasta. Al lado de los millones de anuncios consumistas, hay unos poquitos anuncios que (FGES12957).
[xx] Investigador: Y esos documentales hacen que quieras proteger el medio ambiente?
Mujer 13-14: En el momento te convencen, decís ahora voy a protegerlo, pero si los demás te perjudican o no te dejan y te tapan la boca a no ser que estén todos de acuerdo (ESI04235).
[xxi] Investigador: O quizás es más grande en Andalucía que tienes propaganda en televisión o en papel.
Mujer17-18: En la tele.
Mujer17-18: En la televisión no local en autónoma y nacional, porque local poco.
Mujer17-18: Acá la publicidad que hacen es de no haga tal cosa o recicla, pero no te explica cuales son los efectos que tienen el no reciclar o lo que ocurre con eso simplemente, recicla.
Mujer17-18: O por ejemplo no use el agua del grifo.
Mujer17-18: De esa forma la gente no se va a concienciar porque dice recicla y para que y que es lo que consigue con esto y me tomo la molestia de reciclar y ver que consigo o que efectos tiene si no lo hago (FGES12316).
[xxii] Investigador: ¿Tú piensas que los temas del medio ambiente tienen atención en los medio como merecen?
Mujer 13-14: Pues por mi si, por mi parte, con mis amigos si, pero creo que no, porque si no la gente no haría tantos edificio y no incendiarían los bosques porque no le prestan atención; porque si le prestan atención no lo harían.
[xxiii] Investigador: ¿Ustedes miran programas de televisión con respecto al medio ambiente o la naturaleza?
Mujer 13-14: La verdad, a mi me aburren, porque si a mi me lo explican de una forma divertida me gusta pero si me lo explican de una forma aburrida.
(Hablan todos juntos)
Mujer 13-14: Por ejemplo, lo que me resulta interesante son las películas de animales, de la naturaleza, porque les está enseñando a los mas pequeños, los dibujos, les encantan los animales, les están explicando, y están aprendiendo. Sobre la naturaleza, aprender a respetar a los mayores, depende de cada película.
Mujer 13-14: Por ejemplo, mas divertido es si te cuentan la historia de España, con dibujos, personajes y está bien o en un Discovery Canal, pero eso o es de cadena pública (FGES06927).

[xxiv] Investigador: J: ¿Piensan que los temas del medio ambiente tienen la atención que merecen en los medios?
Mujer 13-14: No.
Mujer 13-14: Es poco
Mujer 13-14: No, porque no interesan.
Investigador: ¿No quieren ver esos programas?
Mujer 13-14:No, a la mayoría de la gente le gusta el cotillero, que pasa con los famosos (FGES09395).
[xxv]Investigador: Respecto del medioambiente, ustedes hablan con sus amistades acerca del medioambiente.
Hombre 13-14: No.
Hombre 13-14: No, no mucho.
Investigador: ¿Por que?
Hombre 13-14: No se.
Hombre 13-14: Hablamos de otras cosas.
Hombre 13-14: En realidad.
Investigador: Pero ustedes piensan que el medioambiente es importante.
Hombre 13-14: Claro, pero.
Hombre 13-14: Pero ninguno piensa así.
Hombre 13-14: Es que te vas con amigos a jugar al fútbol y mientras estas en el partido no te vas a hablar sobre el medioambiente (risas).
Hombre 13-14: Y aparte tampoco lo piensas ni se te ocurre ni nada de eso (FGES14265).
[xxvi] Investigador: ¿Alguna vez hablas con tus amistades del medio ambiente?
Mujer 13-14: No.
Hombre 13-14: No.
Investigador: ¿Nunca? ¿Por qué no?
Mujer 13-14: No sé.
Mujer 13-14: No nos interesa tanto, tenemos otras cosas más importantes para hablar.
Investigador: ¿Qué cosas pueden ser más importantes para hablar?
Mujer 13-14: Las novios (risas)
Investigador: ¿El hecho de tener novia es más importante que el clima del mundo?
Mujer 13-14: Sí.
Mujer 13-14: De todos (ESFG02274).
[xxvii] Investigador: Bueno. ¿Por qué ustedes piensas que no hablan con amistades en general? Porque todos dicen que esto es importante.
Mujer 17-18: Porque a lo mejor intentas decir algo y pasan.
Mujer 17-18: Porque te dicen ya estas hablando de ese tema, pareces tonta.
Mujer 17-18: O es un tema de mayores.
Investigador: ¿Que dices?
Mujer 17-18: Que es un tema de mayores.
Mujer 17-18: Que nosotros no tenemos derecho a hablar de eso porque somos pequeño, y no sabemos de que estamos hablando (ESFG15198).
[xxviii] Hombre 13-14: De los adultos, de los chicos, en general todos porque si los adultos dejan los excrementos y los chicos tiran los papeles, y siempre hay (ESI02128).
[xxix] Mujer 13-14: Es que saben que está mal, saben que no se debe tirar la basura, al campo, no se puede tirar en la calle, no se debe tirar en la casa, a ellos no les gustaría, ellos saben que hacen mal, pero no le importa, como no es su casa (ESFG0881)[xxix].
[xxx] Mujer 17-18: Como por ejemplo, aquí en Málaga han puesto los tres contenedores y eso nadie lo respeta, nadie lo hace, es más cómodo hoy tirar la basura como siempre (FGES1571).

Chapter 7

Conceptual and Policy Implications

7.0 Introduction

This thesis has produced a range of findings concerning the relationship between individual teenagers and pro-environmental behaviour. These findings have implications for several literatures. They contribute to maturing discussions within geography about the impact of unequal power relations between adults and teenagers for the latter's perception of responsibility, participation and perceived social agency. They will also be of interest to authors in other disciplines (e.g. social psychology) seeking to identify drivers and barriers to pro-environmental behaviours in different contexts, especially for those interested in synthesising these relations through the analytical framework of (sustainable) lifestyles. Finally, the findings have implications for policy makers interested in behavioural change. This chapter therefore discusses the findings presented in chapters 4, 5 and 6 in terms of their contributions to these diverse literatures and also to policy.

The chapter begins by discussing the study's findings in the context of recent literatures of teenager's geographies (section 7.1), examining the special social circumstances that circumscribe teenagers' existence and exploring possible consequences of this for their negotiation of pro-environmental behaviours. Section 7.2 then develops the concept of a lifestyle approach in the context of teenagers who participated in this study by proposing a model of salient influences on their behaviour (Figure 7.1). Section 7.3 progresses the theoretical utility of the lifestyle approach by exploring notions of structure and agency, of micro-geographies and the overall benefits and limitations of this framework for this study. Section 7.4 develops further the concept of micro-

geographies and their influence on the way that pro-environmental behaviour skills are transferred between different sites of socialisation. Section 7.5 then draws these different ideas together and examines their implications for policy-makers interested in facilitating pro-environmental behaviour change. Finally, section 7.6 provides a brief chapter summary.

7.1 Teenagers' Geographies

Recent years have seen geographers becoming increasingly interested in children's experiences and life worlds[1]. In the West children have often been theorised as epistemologically constructed in relation to adults; Valentine (2000:258) describes adults as 'responsible, competent, strong decision-making agents, (whereas) children are irresponsible, incompetent, vulnerable human 'becomings' in need of protection'. James *et al.* (1998) also suggest a hierarchical relationship between adults and younger people that specifies and justifies the latter's marginalisation in certain aspects of society, and in turn shapes children's sense of self. This occurs formally, by political and economic exclusion, age delimitations on space, compulsory schooling and restricted access to basic services, and informally via reflexive societal processes and events such as parental control over liberty and space, and peer and media pressure.

Despite this renaissance of interest in children, relatively little attention has been paid to teenagers, leading Weller (2006) to claim that teenagers remain the neglected other of children's geographies and to call for a specific emphasis on teenagers' geographies. Although a nascent area of research, agendas for teenagers' geographies have been proposed which consider space, 'betweenness' (Tooke 2000) and explore power relations in research, policy and wider society in order to challenge negative stereotypes

[1] This is demonstrated by the increasing presence of youth themes at the Institute of British Geographers and Royal Geographical Society and American Association of Geographers conferences and the publication of the journal 'Children's Geographies' since 2004.

of teenagers. Studies which promote these agendas can contribute to existing geographical studies of teenagers (Matthews *et al.* 2000a; Sibley 1995; Skelton and Valentine 1999; Skelton and Valentine 2000; Tucker 2003; Tucker and Mathews 2001), and can highlight the significance of age-based social positioning in shaping everyday experiences. Themes to emerge from this study of importance to teenagers' geographies are those of responsibility, participation, social agency and the power relations that inform these processes[2].

Many of the ways in which environmental responsibility was conveyed to teenagers were based within assumptions that responsibility was experienced at the individual level. However, the findings suggest that individual environmental responsibility was usually experienced in relation to the actions of others and dependent on a range of social relations. For example, responsibility to participate in pro-environmental behaviours in the home was often guided by the intimate social relations of family, whilst responsibility to participate in environmental activism was driven more strongly by age-dependent constraints. The data suggest an interesting relationship between these processes; that the objective constraints excluding teenagers from activist and political activities had implications for their subjective perceptions of responsibility. Many younger teenagers felt excluded from activist and non-activist citizenship behaviours and this perceived lack of power to influence the political arena often left them with a belief that low-level behaviours were also redundant, as they could make little tangible difference without parallel political influence.

However, the data also suggest that those who are adults in a formal sense (18+years) continue to perceive themselves as without influence. Participants, including those who

[2] For further commentary on this point, see chapter 3.

had reached formal adulthood, felt that their opinions and contributions about the environment were valued differently from those of adults. Many participants believed that environmental responsibility comes inherently with adulthood, regardless of practices learned whilst young, something that is achieved alongside political and economic inclusion and perhaps related to notions of citizenship. This view does not represent the consensus of research in this area which stresses the importance of childhood practices and experiences in adult decision making with regard to the environment (Palmer 1998; Tanner 1980). The data suggest that the limited power and influence associated with youth constructs in Western Europe may have negative consequences for fostering individual environmental responsibility in young people.

Participation in pro-environmental behaviours differed greatly between participants and was embedded within characteristics of the individual, social relations and context. For instance, participation in pro-environmental behaviours in the home was usually determined by parents. In schools, participation in pro-environmental behaviours and environmental decision-making was often dependent on the perceived intelligence, maturity and capability of a student to contribute. However, a common constraint irrespective of location was their 'appropriateness' as deemed by adult gatekeepers, a phenomenon recognised elsewhere in studies of minors and participation (Hart 1997; Schusler and Krasny no date: no page). This highlights the importance of the adult-minor relationship for the ways in which teenagers participate in pro-environmental behaviours, and suggests that this relationship requires deeper exploration. It further questions the validity of traditional unequal power distribution between adults and minors as an appropriate structure with which to promote sustainability. 'Youth participation in environmental action reflects a fundamentally different relationship between young people and adults – one that requires sharing of power – than that

typically prevalent in our schools, youth programs and communities' (Schusler and Krasny no date: 6; also Uzzell 1999).

James *et al.* (1998:6) acknowledge the importance of the 'discovery' of children as social agents to be 'understood as social actors shaping as well as shaped by their circumstances'. Although certain aspects of social agency for minors are formally recognised[3], many of the everyday routine experiences of children and teenagers are governed by less explicit processes. In terms of pro-environmental behaviours it seemed that the more behaviour was normalised, the more confidence teenagers had that their actions contributed to effective change. Common behaviours such as recycling therefore nurtured a strong internal locus of control, whereas less appropriated and difficult to access behaviours did not (Hines *et al.* 1986-7). It seems that teenagers experience hierarchical degrees of agency, with accessible low-level domestic behaviours at the base, rising to behaviours inaccessible due to economic, social and political restrictions placed on them as citizens and as minors (restricted ownership, marginalised social voice, restricted political rights). Factors causal in determining levels of agency were the particular characteristics of that context[4], with an emphasis on family in shaping perceived agency. Within families, parents' level of education and proclivity towards middle class values[5] were important for engendering or restricting positive feelings of agency in teenage children, indicating the essential role they have in fostering pro-environmental behaviour amongst young people.

Evaluating this research through a criterion of teenagers' geographies reveals that in terms of relationships with environment, teenagers are can feel alienated from nature

[3] UN Convention on the rights of the child (1989) and the United Kingdom's Children's Act 1989 are relevant examples.
[4] The experience of agency differed between sites, and practical experiences of implementing change in one location would often lead to increased efforts in another.
[5] A desire for respectability, material wealth and an emphasis on family and education.

and environmental risks in the same way as adults (through expert systems and the scientisation of issues and solutions) (Giddens 1991). However, by virtue of their social status as minors and the power relations they are subject to, it appears that teenagers perceive themselves to be doubly removed from the environment as a series of social, political and economic processes.

Behind these observations the question remains as to which entities are maintaining these constructions and for what end. ESD and other awareness raising strategies have disseminated notions of environmental responsibility and citizenship to minors[6], and the political activities they are excluded from are, in reality, limited compared to the range of pro-environmental behaviours they are able to participate in. Although this may be confusing where rights and responsibilities are seemingly delimited arbitrarily, authors have noted that teenagers are able to traverse the categories of childhood and adulthood by resisting hegemonic identities and creating their own reflexive biographies (Sibley 1995; Valentine 2000). Many who participated chose to identify with adults in some ways and not in others which often included responsibility for the environment. Similar findings are observed by Weller (2006:101): 'A child is a young person but a young person is not necessarily a child. A young person may also be an adult. At the time a teenager may be a child, a youth, or an adult or in-between any of those categories'. She goes on to describe how this state of 'ambiguity or betweeness is essential in understanding teenagers' lived experiences' (Weller 2006:102; Skelton and Valentine 2000). Therefore, although this study finds that many aspects of the Western construction of 'teenager' discourage their participation in pro-environmental behaviours, uncertainty remains as to how far this originates from external or self constructions. The evidence from this study suggests that teenagers construct

[6] In line with themes of global and common inheritance.

environmental responsibility relationally to adults as a way of negotiating (often in a utilitarian way) their positionality in relation to current dominant social and economic processes and their perceived 'right' to modern, unsustainable practices.

To summarise, this section has sought to embed key findings from this thesis within the theoretical perspective of teenagers' geographies. This has proven useful in exposing the functions and consequences of power relations between teenagers and adults for teenagers' experiences of responsibility for, and participation in, pro-environmental behaviours. Furthermore, it provides an insight into how teenagers negotiate social agency throughout varying sites; family, schools and the political landscape. The usefulness of this framework in exploring the findings of this thesis suggests the utility of studying the totality of teenagers' experiences in relation to a given theme in order to avoid an excessive focus on formal power relations and participation at the expense of informal ones which, as this study has demonstrated, can pre-dispose teenagers (amongst other groups of minors) towards particular perceptions and courses of action.

In addition to the resonance of these findings for the nascent literature on teenage geographies, the results have implications for other authors working on identifying drivers and barriers to pro-environmental behaviours in different contexts. Section 7.2 now addresses these issues within an analytical framework of (sustainable) lifestyles.

7.2 Conceptualising Lifestyle

Section 7.2 develops a framework with which to illustrate the salient lifestyle components impacting on teenager's pro-environmental behaviour. It then examines the

theoretical implications of a lifestyle approach before outlining salient benefits and limitations.

As a starting point it is important to consider the conceptual and descriptive differences between the concept of a sustainable lifestyle and more 'traditional' understandings of lifestyle[7]. *Sustainable* lifestyle, as defined by Bedford (2003), currently stands as a collection of behaviours that ameliorate the impact of individuals upon the environment. The benefit of identifying groups which participate in pro-environmental behaviours and the extent of their participation is that those individuals and the groups they are affiliated to can be targeted with more nuanced strategies to enhance drivers and address particular barriers relevant to them.

Presently, if an individual is seeking to live a sustainable lifestyle, it is probable that their actions are prompted by some personal ethic based on pro-environmental values rather than solely exogenous factors, as the influence these have on behaviour can vary markedly for different behaviours (Black 1985; Stern 2000). As this study has indicated, individuals who *consistently* apply this ethos to their lifestyles are currently in the minority, despite surveys which suggest that the majority of people in developed countries at least consider themselves to have environmental sympathies (Dryzek 2005). However, sustainable lifestyles cannot be separated out from more commonplace conceptions of lifestyle. Indeed, ideas about lifestyles as preferred ways of living are often at the heart of the difficulties encountered when reasoning about behavioural change. Bedford *et al.* (2002) and Schulze (1997) describe how, as environmentalism has become entwined with images of denial, such as not driving and using less water, it has fallen out of line with what society considers to be normal behaviour. Bedford *et al.*

[7] A way of life or style of living that reflects the attitudes and values of a person or group.

(2002) further argue that in order to promote lifestyle change, campaigns must start from understanding current lifestyles and the barriers to change for each particular area of lifestyle change. Understanding drivers of existing lifestyles can thus reveal much about pathways to more sustainable ones.

Currently, there are several strategies for categorising individuals into lifestyle groups (Bedford *et al.* 2004; Jacobs 1997). Within policy there is a tendency to identify lifestyle groups by socio-demographic indicators and/or consumption patterns, as traditional markers for easing the integration of distinct groups into policy-making. However, in a more nuanced deconstruction of lifestyle, Giddens (1991) describes lifestyle as a more or less integrated set of practices which an individual embraces, not only because such practices fulfil utilitarian needs, but because they give material expression to a particular form of self-identity. The findings of this thesis demonstrate how both these perspectives are necessary to achieve a fuller understanding of lifestyle *in context*; common socio-demographic characteristics have important consequences for teenagers' mediation of values, identity and consumption, which in turn have implications for their relationship with pro-environmental behaviour (Figure 7.1).

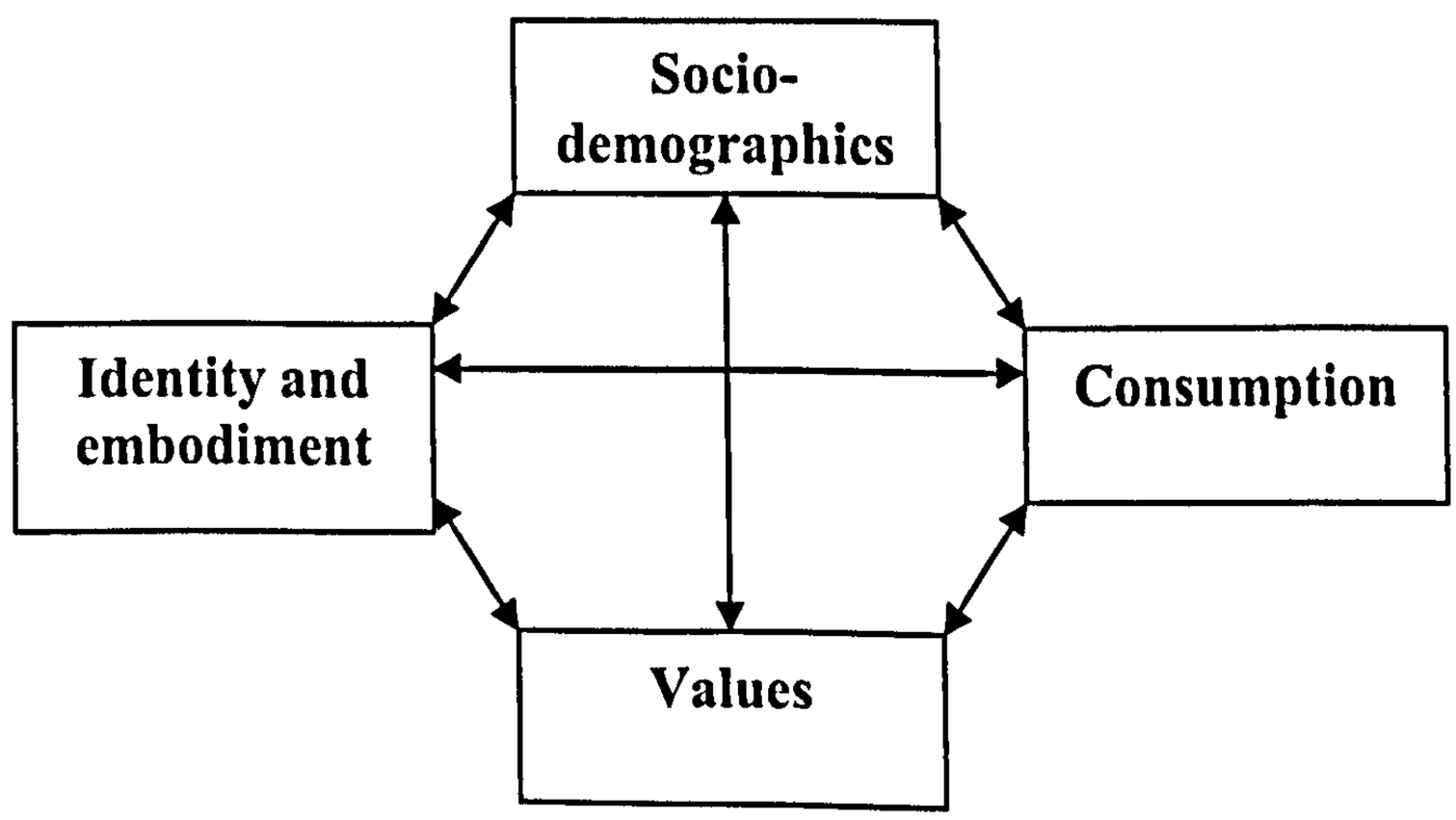

Figure 7.1 Conceptualising a Lifestyle Approach

7.2.1 Socio-Demographics

Whilst acknowledging that the teenagers who participated in the research are not a homogenous group, there were shared contexts and perceptions which shaped their lived experiences including living with parents, attending school, and limited financial, social and political autonomy. These commonalities suggest some justification of the term 'teenager' as an age-based category and its related assumptions and experiences (Miles 2000; Weller 2006). Indeed, as a general phenomenon, there has been a surge in research documenting 'youth lifestyles' since the 1960s (Skelton and Valentine 1999) in which the advent of an increasingly popular Western youth culture and parallel constructions of youth (Valentine 2003) have infiltrated and hybridised local youth cultures, producing similar experiences of youth throughout many parts of the Western world. Although this generalisation is a crude one and should be understood as such, the homogenisation of cultures has been a popular concept throughout the globalisation literature and is echoed in parallel debates on the heterogeneity of neo-liberalisation (Castree 2006). Therefore, although imprecise, the argument is a useful one in understanding how people in different places have similar experiences.

The particular socio-demographic identity of teenagers meant that their lives were strongly linked to key significant socialisation contexts; family, school and media. Pro-environmental behaviours were embedded within preferred and routine behaviours and mediated through the norms of each of these key sites. Thus, participants did not always have an autonomous relationship with their own behaviours; these were instead embedded within the socio-cultural-economic particularities of their immediate social context.

7.2.2 Identity and Embodiment

The meaning of lifestyle has undergone a rapid transformation from being tied to social class and occupation to representing the individualistic processes of social mobility and plurality. Lifestyles are now viewed as being something more than a pre-determined way of life (Bedford *et al.* 2004; Bauman 1992; Chaney 1996; Featherstone 1991) and people use lifestyles every day to identify and explain wider complexes of identity and affiliation. Sobel (1981:171) maintains that 'lifestyle is important because it manifests both social and individual identity, because lifestyle has become an increasingly important centre of meaning, in short, because the creation of lifestyle itself is a time-intensive activity with a heavy investment of ego'. Thus, what types of identity, where they emerge from, who creates them, and how they are mediated are important questions for understanding pro-environmental behaviours (Hobson 2006; Miles 2000).

Given that the most salient influences for developing environmental values and intent to participate in pro-environmental behaviour were family and peers, one conceptual framework which can help to explain these tendencies is social identity theory (Tajfel and Turner 1979; 1986). The basic premise of social identity theory is that social identification with a reference group or groups is a key component of identity and that this has consequences for behaviour[8].

> Key aspects of our behaviour are motivated by the particular social groups that we belong to. Certain behaviours are more or less ruled in or ruled out for me, simply because I perceive myself as belonging to a particular social group. The roots of these normal behaviours have very little to do with individual rational deliberation. Rather they are heavily influenced by inter-group and intra-group dynamics. And in both cases, my personal influence over prescribed or proscribed action is severely limited (Jackson 2005: 82).

[8] Social identity theory has been useful in explaining many different types of behaviour including anti-social behaviour, delinquency and stereo-typing (Hogg and Vaughan 2002).

This interpretation has resonance with Earl (1990) and Tanner's (1999) use of Ipsative possibility sets, whereby decision making about behaviours is based within practical consciousness and limited by information.

> One may argue that *most* decisions actually involve habit or the following of simple rules of thumb in respect of a highly restricted volume of information and a list of options far shorter than the objective possibility set, if alternatives are considered at all (Earl 1990: 726).

Considering these ideas it is likely that Ipsative possibility sets are not just static entities circumscribed by knowledge or possibilities, but are made flexible by the subtle cultural and social coding which individuals use to differentiate themselves and to align themselves with groups by making lifestyle choices: 'we choose lifestyles in relation to other people' (Reimer 1995:125). The reference groups we identify with are often based upon the social activities we participate in, for example, through families at home, peer groups at school and colleagues at work. In turn, these spatially differentiated organisations can influence the way diverse lifestyle or reference groups behave. Therefore, alongside objective constraints, Ipsative constraints are socially and spatially constructed and highly dependent on social relations and immediate context.

This analysis suggests that, in the main, regardless of ESD, the Ipsative choices conceived by participants were socially constructed through immediate socialisation contexts. This accentuates the importance of families and peers in encouraging pro-environmental behaviours as smart, forward thinking and normal. It also suggests that individuals' actions will differ dependent on the preferred values present for each reference group (Stern *et al.* 1993).

The ways in which participants interacted with the environment through lifestyle choices about leisure and consumption are important in understanding how these experiences socialised them into positive or meaningful embodiment of the environment and nature (Blake 1999; Chawla 1998a; Hicks and Holden 1995; Macnaughten 2003). Here, social identity theory can again be useful in its recognition of the important role of intra-group dynamics for behaviour. It was evident that participants perceived only limited Ipsative choice sets available to them with which to embody their environmental concerns and that they believed this to be a consequence of being a teenager and therefore occupying a transitional phase between child and adult. Teenagers recognised distinct affinities between younger children and environment-nature themes, akin to Hyun's (2005:199) observation that children experience the environment in a 'deep and direct manner', rather than as background events as adults do (also Sebba 1991: Wilson 1997). They also perceive a relationship between adult responsibilities and individual environmental responsibility[9], but were less able to articulate how they themselves embodied links to the environment. Although many undertook some activities in the countryside, there was a focus on media and urban-based activities, and the common use of counter identities (Burke 1980: Burke and Reitzes 1981) by peers to disparage environmentalism resulted in limited opportunities to consider the environment outside of school activities. Although it cannot be implied that this has direct consequences for pro-environmental behaviours, it does help to cast light on the way the construction of peer identity amongst participants often resulted in them distancing themselves from meaningful ways to embody the environment and individual environmental responsibility.

[9] Through financial responsibility, childrearing, voting, running households, transport choices etc, as full social participants, as polluters and decision makers.

7.2.3 Consumption[10]

The lifestyle thesis places major emphasis on consumption and consumer choices (Harrison and Davies 1998; Jackson 2005), but there was little evidence that participants consumed products with sustainability in mind. Although they experienced partial degrees of inclusion in decision making about household goods within their families, their own money was spent principally on leisure and clothes with choices informed by fashion and peer interests. This raises questions about where teenagers gain knowledge and experience about alternative and sustainable consumption, as despite broad levels of awareness, few regarded it as relevant to them (see also Sykes *et al.* 2000).

Different constraints influenced consumer choices in each location; however a common theme was that participants felt excluded from many consumer decisions by virtue of their limited economic means. The general perception was that this effaced financial responsibilities, including those with an embedded environmental responsibility, for example electricity, petrol and food consumption. Whereas many recognised that adult consumers were 'locked in' to unsustainable consumption, they in turn felt 'locked out' of these types of decisions. Even participants who voiced strong environmental concerns or values also espoused support for materialism and consumerism, reflecting the findings of the UNESCO (2000) global sustainable consumption survey, which revealed low awareness amongst young people of the link between their own consumption and problems of over-consumption. Connell *et al.* (1998) use the concept of 'ambivalence' (where people feel mixed emotions and are pulled in two seemingly logical directions), to describe the way young people are concerned about the environment but also desire popular culture.

[10] Consumption here refers to the routine and household purchases made by participants and their families.

This suggests that despite widespread recognition of the enviro-political nature of consumption, participants had limited experience of decision-making about sustainable consumption, which seemed to be delayed until they manage their own homes as adults. Meanwhile, their consumer behaviour was guided by parent-led heuristics and the lifestyle aspirations of their peer group. Importantly in the context of ESD, there seemed to be a general lack of dialogue within schools about consumption as an environmental issue except in cases where this paralleled other school interests such as health[11]. This left education about consumption as a pro-environmental behaviour within the informal social sphere, reinforcing again the importance of families in promoting these behaviours but undermining the potential for a more consistent engagement by teenagers with the concept of sustainable consumption.

7.2.4 Values

The conception of values as a basis for lifestyle choices and change has gathered support from authors researching pro-environmental behaviours as the traditional markers of lifestyle have increasingly been called into question. Bedford *et al.* (2004)[12] discuss the way that environmentalism is motivated more from altruistic beliefs and post-materialist values than from underlying social characteristics, and Oreg and Katz-Gerro (2006:478) posit that;

> Viewing values as an overarching factor supports a view of environmental behaviour as part of individuals' lifestyles. Because lifestyles and behaviour involve an expression of values, to change one's lifestyle one would first have to address the values which underlie them.

[11] Some schools had recently begun to sell fair-trade snack bars as these were often perceived as a healthier alternative.

[12] Although this is contested by some authors, Dryzek (2005:187) for example claims that 'The essence of being green is not adherence to any philosophical analysis...still less any kind of collective action, political or otherwise. Instead it is a green lifestyle'.

However, despite the majority of participants professing some value for the environment there was little evidence of a concurrent behavioural shift. Values about the environment were constructed and disseminated in varying ways by peers, education, media and family, but it was only consistently through the latter that pro-environmental values were practically adapted into behaviour.

These findings again have important implications for ESD. The evidence suggests that values are normalised through experience which poses challenges to dominant didactic methods of teaching ESD. Furthermore, it appears that despite widespread familiarity with the central tenets of ESD, preferred lifestyles were often unsustainable suggesting that ESD has yet to succeed in affecting teenagers' lifestyle choices. The development of values necessary for changes cannot occur at a single point and be expected to influence all others. ESD has to adopt an infusionist approach with far greater emphasis on outreach to resistant social settings. Achieving this will require real reflection of ESD methodologies to engage authentically with resistant lifestyle groups.

Although the lifestyle framework developed here cannot claim to be exclusive, the components included are those which were prominent for teenagers in this study and may well change for other population groups. The framework, however, provides a useful premise for empirical analysis of the strengths and weaknesses of lifestyle components which impact on participation in pro-environmental behaviours in different social situations. Its use here has demonstrated the particular social processes which influence teenagers' decision-making about pro-environmental behaviour, namely socio-demographics, identity and embodiment, values and consumer aspirations and the impact of these processes for the perceived Ipsative choice sets of participants. The

theoretical implications of using a lifestyle approach to explore barriers and drivers to pro-environmental behaviour are now discussed.

7.3 Theoretical Implications of a Lifestyle Approach

Part of the appeal of the lifestyle approach is how it actively addresses tensions between structure and agency, a recurrent theme in studies of pro-environmental behaviours. Several authors regard lifestyles as expressions of personal negotiation within available structural choices (Figure 7.2; Giddens 1991; Sobel 1981) whilst noting how intense structural, social and economic changes during the twentieth and twenty-first centuries have created seemingly infinite lifestyle opportunities but also created and entrenched certain social norms.

Figure 7.2 demonstrates how individual choices are both limited by, and help to create, systems of provision. In terms of pro-environmental behaviours, individual actions are important catalysts for structural and political action, a fact exemplified by the relative success of recycling schemes in the UK and, conversely, comparatively unsuccessful efforts to reduce car use (Barr 2004; Darnton 2004a; 2004b). 'Lifestyles are not entirely individual in nature but are constructed through affiliation and negotiation, by the active integration of the individual and society which are constantly, as Giddens would argue, reproduced through each other' (Miles 2000:24). Achieving sustainable lifestyles therefore requires parallel efforts by individuals and structures, and so it is imperative to appreciate the differentiated social positioning of individuals and subsequent consequences of this for their actions.

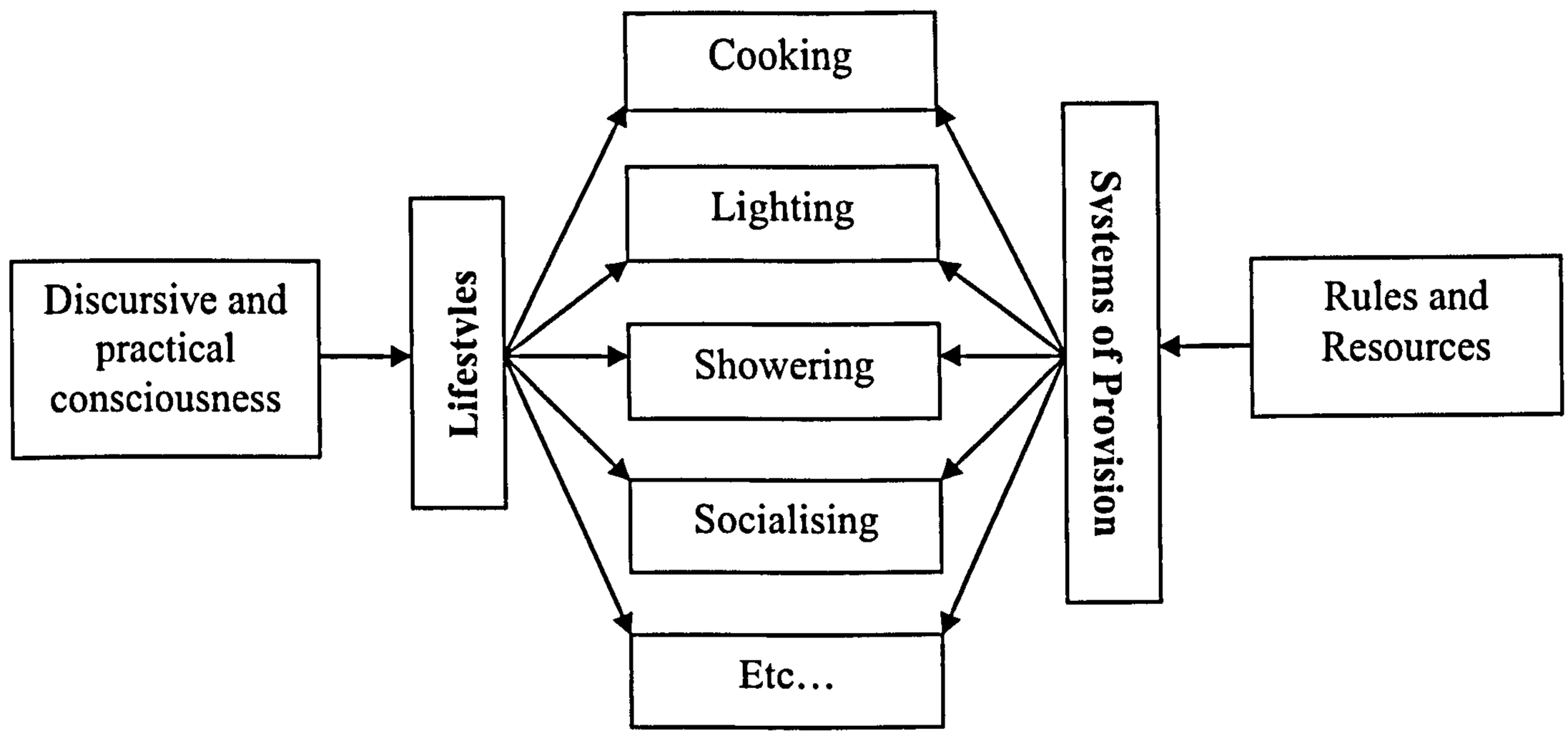

Figure 7.2 Consumption as Social Practice

(Jackson 2005: 91 after Spaargaren and van Vliet 2000)

Pivotal to any discussion of structure and agency in the context of teenagers' life experiences is scale. Scale constrains the structural processes they are subject to as well as their perceptions of agency (power, domination, resources). These processes are constructed and mediated through micro-geographies or the different sites of socialisation teenagers inhabit. Harrison and Davies (1998:4) allude to this when they postulate that lifestyles are sets of practices and attitudes that make sense in particular contexts, 'situated practices located in particular places, spaces and timings'. In a society often regarded as highly fragmented and individualised, lifestyle can also be a new means of negotiating between the public and the private, 'demonstrating the active and engaged processes through which people construct their identities in relation to their lived experiences.'

7.3.1 Micro-Geographies and Sites

In considering the contexts which affect teenagers' decisions about pro-environmental behaviours and more sustainable lifestyles, Bedford (2002) describes how willingness to act decreases as the number of sustainability issues an individual is expected to address increases. This suggests pathways to the greater normalisation of sustainable lifestyles are fraught with difficulties. However, the data here do not strongly support Bedford's claim. Teenagers did not consider the number of issues that required action to be a barrier to undertaking behaviour; instead, willingness to act was more contingent on the perceived actions of others; media, public space, families and peers. In the main, teenagers were willing to undertake behaviours which were already imprinted as habit e.g. recycling, but were less motivated to undertake behaviours which required a conscious modification of current everyday life practices (see also Bedford *et al.* 2004; Hobson 2001). However, teenagers' willingness to act increased when behaviours were consistently and strategically reinforced from different sources, as with the Devon school-based example of 'Force for Change', which paralleled efforts at home to conserve energy and water and successfully embedded these behaviours within school ethos[13]. This again highlights the importance of site context and reinforces the suggestion that the micro-geographies of teenagers' social interactions transcend and inform pro-environmental behaviours by normalising certain codes of conduct over others.

These suggestions have a wider applicability for the relationship between the individual's behaviour choices and broader social and economic structures. If identity and behavioural choices are subject to both social groups and the sites they occupy then sites may provide meso-scale catalysts for change through which different lifestyle

[13] Pupils were significantly more committed to undertaking behaviours on the school site than in other schools who participated.

groups can be located and targeted. Increased understanding of the transactions which take place within and between lifestyle groups and the sites they occupy would be advantageous to knowledge and to policy-makers.

7.3.2 Benefits and Limitations (Lifestyle)

It has been argued during this thesis that a lifestyle analysis has the essential utility of developing a more nuanced understanding of drivers and barriers to pro-environmental behaviours. It has furthermore enabled analysis of aspects of the relationship between teenagers, environmentalism and pro-environmental behaviours which may be overlooked in studies which focus on singular determinants of behaviour[14] or do not investigate the exclusive experiences of teenagers. Considering lifestyle components such as socio-demographics, consumption, values and identity within a single framework has revealed important understandings about how being a teenager defines experience and social interactions.

The approach has been particularly useful in exposing the incongruence between the practice of pro-environmental behaviour and identity for many teenagers. The lack of participation in these behaviours coupled with persuasive peer identities which normally favour unsustainable behaviour choices mean that pro-environmental behaviours have little consequence for identity and vice-versa (these aspects are in many cases, incommensurable). However, from the different processes evident in Devon and Malaga, where participation was more embedded within the personal, financial,

[14] Common examples would be attitudes, habits, psychological variables, context and socio-demographics (Stern 2000).

social and cultural identity of the family, participants were able to establish pro-environmental behaviours more firmly within notions of preferred ways of living[15]. These observations clearly demonstrate the existence of multiple identities based on different social groups and sites that teenagers interact with. This again highlights the importance of micro-geographies to any debate about pro-environmental behaviours and sustainable lifestyles.

A beneficial feature of this approach is that lifestyles express the relationship between the individual and society and structure and agency, and also people's relationship to social change, thus making it an appropriate tool with which to encompass the complexities of the twenty-first century (Moorhouse 1998). The recent interest in lifestyle as an analytical tool (Barr 2003; Bedford 2003; Hobson 1999; 2001; 2002) is due not only to these benefits but its potential to provide a framework through which individuals can recognise and evaluate their behaviour. Therefore, in both academic and policy circles (Bedford *et al.* 2004) the lifestyle concept is becoming a common way of communicating pro-environmental behaviours.

The lifestyle approach suggests the individual makes conscious choices about values, identity and consumption, with personal benefit as the prime motive. Yet much pro-environmental behaviour is instead motivated by habit, cost and convenience (Shove 1999; 2000). As lifestyle approaches become more influential as analytical frameworks with which to distinguish those who undertake pro-environmental behaviours from those who do not, it is important to remember that indicators of a sustainable lifestyle should be embedded within aspects of overall lifestyle, thereby considering context and

[15] Hobson (2002) found that adult participants in a GAP project (action at home) were less concerned with rationalising their own lifestyles than whether their actions contributed to a correct way of living like throwing litter. She concluded that people's perceptions about the right way to live were more powerful drivers of pro-environmental behaviours than environmental concern.

the specific meaning constructed by agents of social life (Miles 2000) and grounding understandings in behaviours *and* the perceptions of those behaviours for people.

In terms of limitations, although considering teenagers' responses to pro-environmental behaviours through a lifestyle lens can offer new insights about their reasons for (non) participation, it cannot offer exhaustive explanations. In practical terms, logistics and provision act as objective constraints on pro-environmental behaviours. Also, people live within different individual, social, economic and cultural situations which constrains access to resources and which ultimately has an effect on their lifestyle choices. Furthermore, the notion that individuals prefer one lifestyle over another is problematic and smacks of rational choice theory. There is also a conceptual issue with this particular depiction of lifestyle components (Figure 7.1), in which it is suggested that age-related characteristics drive particular teenage perceptions about identity, values and consumption. There are obvious exceptions to this, for example, teenagers who are committed environmental enthusiasts. These observations suggest that the roots of many lifestyle choices are, and most likely will remain, beyond comprehensive identification.

Overall, considering these thesis findings within a lifestyle framework has been a useful exercise. It has proved beneficial in clarifying reasons why teenagers are often reticent to participate in pro-environmental behaviour and has helped to reveal the significance of meso-scale sites as mediators of structuration and for normalising behavioural decisions. The approach supports Bedford's (2003) assertion that that there is little clear sense at the moment of what is the individuals' responsibility. It further demonstrates that teenagers (amongst other cohorts) are ambivalent about many sustainable lifestyle choices, preferring lifestyles embedded within materialism and consumerism. This

suggests the present research focus on ESD would benefit from broadening its horizons to include significant influences such as family and peers which intersect with educational ones.

Having reviewed the benefits and limitations of applying a lifestyle approach to the study of pro-environmental behaviours, the chapter now discusses one of the key themes to emerge from this study, namely that teenagers often base decision-making about pro-environmental behaviour on where they are and who they are with. Section 7.4 now develops these ideas by exploring the implications of belonging to different social groups, the micro-geographies of everyday lives and some of the consequences for transferring skills and behaviours between different social and spatial situations.

7.4 Micro-Geographies and Transference

In teasing out the factors relevant to transferring pro-environmental behaviours between sites, it is necessary to consider how individuals negotiate multiple social contexts. Previous literatures have postulated why people act differently in different situations. Stryker's (1994) identity theory elaborates on Tajfel and Turner's (1979:1986) ideas about social identity, where individuals commit to identity groups and in return receive social affirmation. Identity theory posits that:

> The self reflects society, and society comprises multiple social groups and is structured and hierarchical, it follows that the self, arising from social experience will be constructed of multiple identities which are similarly structured and hierarchical. Identity theory therefore conceptualises the self as comprised as a set of entities, each of which is imbued with shared expectations of social actions between the individual and the group (Burton and Wilson 2006:98).

These identity components include age, gender, family, ethnicity, occupation and nationality, and are circumscribed by social and spatial contexts. Identity theory is

useful to this analysis in two ways. Firstly, it provides a basis for understanding why teenagers respond to the particularities of sites based on the social groups they interact with in each. Secondly, the recognition of social and spatial constraints upon interaction supports the theorisation of sites in this way, since sites and social practice are inextricable. It was evident that teenagers in Devon and Malaga called upon different discourses, reasoning and examples to justify their views of environmentalism and sustainability and participation in pro-environmental behaviour depending on which site was being discussed and their perceived expectations of self within that site[16].

This suggests that in addition to negotiating the immediate social group, the organisational and institutional processes teenagers are exposed to in different contexts also influenced behaviour. Logistical and objective drivers and barriers to behaviour of course differed between home, school and public spaces. However, other characteristics were also influential, for example, the purpose of the organisation, regulation, legislation, its ethos, the norms and habits of other people in the organisation, key actors and economies and resources. Clearly, teenagers operate within and between sites and call upon a range of personal and social characteristics which can predispose their willingness to act (Darnton 2004a; 2004b). Importantly, these characteristics seem reflexive to the influence of sites, potentially compensating for, or creating psychological barriers to, pro-environmental behaviours. 'A new context may make old habits untenable and lead some to consider his or her attitudes and values explicitly in developing new ones' (Stern 2000:418; Dahlstrand and Biel 1997). The evidence also suggests that the more powerful a situation, the less influential psychological factors appear to be (Guagnano *et al.*1995; Kaiser and Fuhrer 2003:607; Stern 2000; Stern *et al.*

[16] Lord *et al.* (1999) recognises the multiplicity of self but claims the existence of a core self which can explain general disposition towards socio-environmental themes and pro-environmental behaviours.

1999)[17]. This is not to suggest, however, that individuals lack autonomy or that the relationship is casual or unidirectional; Stern (2000) observes how individuals can significantly affect the environment through influencing the actions of organisations they belong to; however, overall, site characteristics set contexts to which individuals respond.

In this study teenagers' participation in pro-environmental behaviours is not consistent between the social and spatial situations they participate in because of differences in the characteristics of sites, social groups and individuals. This study suggests that some sites are more successful in influencing the individual's transferable behavioural skills than others (chapter 6 highlighted the home and family as an example of this), as these sites are more easily able to integrate discursive and practical approaches to behaviour change.

It seems that, in order to achieve pro-environmental behavioural change, organisational and institutional sites must understand and accommodate individual, lifestyle and social influences on the behaviour of its members. Teenagers are agents in multiple sites (although in reality these are restricted in comparison to adult groups) and, although sites may employ discursive approaches to encouraging behavioural change, without recognising how other sites, social groups and lifestyle aspirations are influential it remains that learned pro-environmental behaviour will not automatically be transferred between different spatial locations. A useful example is teenagers' disclosures about school life, home life and peer relationships. Despite efforts by schools to disseminate ESD, there was little recognition or mitigation of the way peers sometimes actively

[17] Stern (2000:422) also observes that 'Attitudinal causes have the greatest predictive values for behaviours that are not strongly constrained by context or personal capabilities. For behaviours that are expensive or difficult, contextual factors and personal capabilities are likely to account for more of the variance'.

discouraged pro-environmental behaviour. Similarly, there was little evidence of schools attempting to absorb and utilise the skills pupils may have accrued from home.

Many current understandings about individuals' negotiations of pro-environmental behaviours do not consider the individual as subject to multiple sites and this omits a crucial level of understanding about the way in which Ipsative constraints are continuously and subjectively constructed to different sites. This oversight is evident in the way policy has focused on engaging the individual without considering the multiple contexts within which they exist, discussed further in 7.5.

Considering their multiplicity, it is perhaps unsurprising that no one site can meet all the criteria necessary to motivate and maintain pro-environmental behaviour. In the case of teenagers who participated in this study, families were central to their perceived sense of identity and to which values they prioritised. This helps to explain the ineffectiveness of many educational efforts to re-direct values. It is unlikely that ESD is able to transcend values learned from families unless these are compatible.

These arguments have significance for literatures which explore what Thøgersen (1999) terms the 'spillover' effect and De Young (1993), Dwyer *et al.* (1993) and Schultz *et al.* (1995) call 'response generalisation', whereby participation in pro-environmental behaviours leads to participation in others as the result of internal dissonance[18]. This study suggests that when individual, social, lifestyle and site characteristics simultaneously motivate pro-environmental behaviours; this can potentially promote participation in pro-environmental behaviours in other sites, motivating more consistent

[18] Festinger (1957) theorises the concept of cognitive dissonance whereby internal discomfort arises from inconsistent actions motivating individuals to reduce inconsistencies. In the example of pro-environmental behaviour this could involve participation in certain behaviours instigating a spill-over of participation into other behaviours.

participation in behaviours throughout the multiple contexts of social life. This requires that the individual, social and lifestyle characteristics of site members are considered in their entirety so that the Ipsative possibility sets that individuals experience become increasingly analogous. The study therefore suggests that site-based response generalisation is an important factor which if not addressed can result in inconsistent take-up of pro-environmental behaviour.

Thinking about situational factors in this way indicates that effective transfer mechanisms between the micro-geographies in which teenagers live, work and play could encourage site response generalisation of pro-environmental behaviours. The more analogous drivers of behaviour become the fewer difficulties teenagers will have in transferring consistent pro-environmental skills between them. This presents certain difficulties and opportunities for policy as it requires targeting public and private spheres, an issue discussed further in section 7.5.

Finally there is an important caveat in thinking about sites in this way. Teenagers eventually grow up and become adults and the sites and influences they are subject to, change. Particularly important in this respect are the longitudinal or latent affects of ESD considering its task of providing the individual with a set of sustainability life skills. It is difficult to ascertain what longitudinal influence ESD has on the individual during the life course; however, there is consensus amongst authors in this field that level of educational attainment is a determinant of environmental concern and behavioural intent (Arcury 1990; Hawthorne and Alabaster 1999; Hines *et al.* 1986-7; Witherspoon and Martin 1992). This suggests that as children become adults and more educated, they may be more inclined to undertake pro-environmental behaviour.

Another idea about longitudinal influence is proposed by Payne (2001) who agues that as we grow up we are better able to critically evaluate our behaviours and that this can have an impact on how we undertake environmentally significant behaviours. He uses his own childhood as an example in which he conserved water but was only able to attribute meaning to this behaviour later in life.

Further to this, identity theory and social identity theory can be helpful in considering why, as individuals become adults, their environmental attitudes and behaviour may change. The knowledge and principles gained from exposure to ESD can become relevant when a change occurs in individuals' circumstances. SLEs such as leaving home to live with peers, getting married, having children, travelling, career choice and other events expose individuals to new sites and new groups of people with different values, views and ways of doing things and to new institutions with different organisational principles, all of which may influence their views and behaviour. The work of Palmer *et al.*(1998a) and Palmer *et al.*(1998b) found that becoming a house owner, a parent and having a career in a sustainability related field were reported as important in influencing adult orientation towards the environment.

7.4.1 Benefits and Limitations (Micro-Geographies and Transference)

Although the processes proposed in this chapter are stylised rather than absolute, they provide a useful framework for understanding pro-environmental behaviour and the individual. Many authors have commented on the impracticality of theories which attempt to encompass the totality of influences on pro-environmental behaviour. Azjen and Fishbein (1980: 15) note that 'theories that incorporate virtually every known social-psychological construct and process not only lack parsimony but, more

importantly, they are likely to generate confusion rather than any real understanding'. Similarly, Stern (2000:420) comments on the soundness of making 'practical progress with incomplete theory' and even goes so far as to suggest that the general and specific nature of causal factors of pro-environmental behaviour renders any general theory of environmentalism 'not ...very useful' (2000:422). As pro-environmental behaviours are essentially a transition in social norms (Jackson 2005), then quasi or transient theories are appropriate tools with which to further explore the multiple contexts of this transition.

Modelling theories of pro-environmental behaviours is common in research as a means of providing 'heuristic devices for exploring the nature of specific behaviours and for identifying the factors that might be important to policymakers who are attempting to influence those behaviours' (Jackson 2005:22). However, most popular models have lacked a spatial element. When sites have featured, it has usually been as singular behavioural domains (Barr 2003; Hobson 1999; 2001) with little research investigating transference of skills outside these contexts (Uzzell 1999). Furthermore, few models have considered the myriad of possibilities for individuals' reflexive interactions in, between, and in response to different sites. Instead focus has remained on the individual within a blanket and often amorphous social context (Blake 1999). It is also relevant that many attempts to conceptualise internal and external influences on pro-environmental behaviours are redundant beyond a certain stage due to complex social norms, expectations and interactions, resulting in a research climate where conceptual knowledge is more advanced than empirical evidence (Stern 2000; Stern *et al.* 1999). This study is therefore valuable in contributing to empirical understandings of the individual in their social and spatial context.

Although this particular conception of situational factors as bounded within sites has been developed according to the spatial experiences of teenagers, there is intuitive value in transferring this framework to wider populations. All individuals who participate in social interaction participate through sites; for example, adults spend significant amounts of time immersed in employment cultures, homes, public spaces and entertainment and, therefore are subject to comparable influences as teenagers. Adults are not, however, constrained to the same extent by spatial, economic, and social circumstances as minors. A more nuanced approach to understanding, locating and engaging adults is therefore needed, and this is currently undertaken through identifying sub-groups of the population who share lifestyle characteristics. However, if conceptualising lifestyle as an amalgamation of socio-demographic characteristics, values, identity and embodiment *and* preferred consumption patterns, identifying and isolating lifestyle groups becomes complex. A better starting point would be to address the cultures of the sites adults frequent such as work and leisure spaces by implementing strategies which saturate those cultures with sustainability principles and participation in pro-environmental behaviour as normal practice. In order to identify and communicate effectively with lifestyle groups within organisations, more innovative methodologies may be necessary. Many larger businesses and employers support sports, social and interest themed groups for employees. These groups may provide possible inroads for communicating pro-environmental behaviour effectively and similar approaches could be used with interest groups not attached to employers. What is critical when considering these possibilities is that the different sites individuals' experience consistently promotes the same messages about pro-environmental behaviour, and that the perceptions of individuals within organisations are taken into account.

Conceptualising the micro-geographies of sites and their implications for pro-environmental behaviours in this way has been implicitly suggested in different ways by many authors. Stern (2000:410) observes the diverse nature of site characteristics, 'the determinants of individual behaviour within organisations are likely to be different from those of political or household behaviours'. Similarly, Bedford (2003) suggests that research exploring the trajectories of pro-environmental behaviour across work and home could be productive, recognising that there are issues with transferring skills and praxis between them (also Biel 2004; Harrison and Davies 1998), while Stern *et al.* (1999) and Jackson (2005) all suggest that behaviours depend critically on the salience of particular beliefs and values in specific contexts. Yet, to date little empirical work has investigated these themes. Recognising the value of sites to understanding the practice of pro-environmental behaviours amongst different lifestyle groups is a valuable contribution that geographers can make, recognising that, increasingly, insights from across the behavioural and social sciences are required to further understanding of *all* causal variables of pro-environmental behaviours, their interactions and influences.

The chapter thus far has proposed frameworks with which to explain the relationships between the social groups and sites routinely occupied by teenagers and the consequences these can have for their propensity to participate in pro-environmental behaviours. In doing so, the argument reveals currently unexplored geographical themes concerning the importance of scale and agency to teenagers' environmental perceptions and behaviours. These findings are now considered within the current policy climate guiding public participation in pro-environmental behaviours in order to explore the implications of the research for policy-making in this area.

7.5 Implications for Policy

The promotion of individual lifestyles which are compatible with notions of sustainability represents a long-standing issue for policy makers. Approaches vary, but to date the policy emphasis in Western nations has been on information provision and market-based instruments that rest upon rational choice models of individual behaviour which prioritise individual needs. These approaches tend to offer solutions which neglect the rich tapestry of cultural and social interaction which influence individual, social and institutional behaviour (Stern and Aronson 1984). It is unsurprising, therefore, that many groups remain apathetic to policy efforts and that mass behavioural change remains an elusive 'holy grail' of sustainable development policy (Jackson 2005).

In terms of suggestions arising from this study for those involved with the design and delivery of policy strategies to encourage sustainable lifestyles and pro-environmental behaviours, several points emerge which are relevant to ESD and consumption debates, as well as to wider debates about teenagers' experiences of decision-making about pro-environmental behaviours and democratic processes. The study has revealed contrasts and continuities in teenagers' engagement with environmental issues, and also the limitations on formal ESD as a means of nurturing environmental concern and enabling action, despite its useful role in informing teenagers about environmental processes and issues. It has been argued that one of the main reasons for this is the extent to which teenagers' identity and outlook is a product of multiple sets of social relations linked not only to school but also to family, peers and, to an extent, media. These insights suggest that, by focusing more clearly on integration of these various life influences and recognising their essential interconnections, policy-makers may be able more effectively

to counteract negative or antipathetic responses to environmental issues. The main elements of these are now reviewed.

7.5.1 ESD

In this case the geographical diversity of attitudes in the case studies demonstrates how ESD in isolation is rarely a causal determinant of pro-environmental behaviours. This highlights the need for ESD to be delivered within a network that recognises and accommodates the impact of intimate social agents which influence teenagers' perceptions and behaviours. In Malaga and Devon there were differences in how these networks operated, which served to hinder or drive participation. However, it is apparent in both locations that greater integration and consistency between strategies is a cornerstone of encouraging behavioural change.

A key component of this is to endeavour to move ESD away from a focus on teenagers as isolated recipients of education and towards its relocation within their social context. This will involve, first the provision of a diverse range of information, experiences and skills relevant and practically applicable to their everyday lived experiences and, second, greater efforts to integrate these between curriculum, school sites and families. For example, schools have the potential to exemplify pro-environmental behaviour and practice within everyday routines and estates management rather than focusing on a rather stale elucidation of environmental pressures and issues. This is an idea that has already received political attention:

> Sustainable development will not just be a subject in the classroom: it will be in its bricks and mortar and the way a school uses and even generates its own power. Our students won't just be told about sustainable development, they will see and work within it: a living learning place in which to explore what a sustainable lifestyle means (Tony Blair 2004 cited in Defra 2005a: no page).

Yet despite such patronage, many teenagers perceived schools to be ambivalent towards sustainability and pro-environmental behaviours. The evidence suggests that schools with whole-school policies and dedicated ESD co-ordinators are better placed to encourage and maintain participation in pro-environmental behaviours as a way of legitimating them. Extending ESD-related experiences beyond the curriculum is also important to embedding pro-environmental behaviours within family and peer communities to facilitate cross-fertilisation of ideas, practices and experiences. One example of such an effort in higher education is being pioneered at the University of Plymouth where the Centre for Sustainable Futures (CSF) Centre for Excellence in Teaching and Learning (CETL) aims to transform the University of Plymouth from an institution characterised by significant areas of excellence in ESD into an institution modeling University-wide excellence (University of Plymouth 2005). This is designed to enable it to play a leading national role in helping Higher Education Institutions (HEIs), the Higher Education (HE) academy and subject-based communities to implement and deliver the learning, teaching and estates components of Higher Education Funding Council for England's (HEFCE) sustainable development in higher education strategy and action plan (University of Plymouth 2005). The CSF proposes a model for sustainability integration by enabling, engaging and encouraging pro-environmental behaviours throughout all the different dimensions of university life (Figure 7.3). This involves integrating ESD as an active component within all courses offered by the university whilst simultaneously greening the campus, promoting sustainable estate management, communicating sustainability through community initiatives and embedding sustainability within the overall cultural ethos of the institution. The overriding emphasis of this approach is that ESD is integral to all aspects of university life[19].

[19] The CSF strategy is too extensive to be properly reviewed here. For more information about the CSF please refer to www.csf.plymouth.ac.uk.

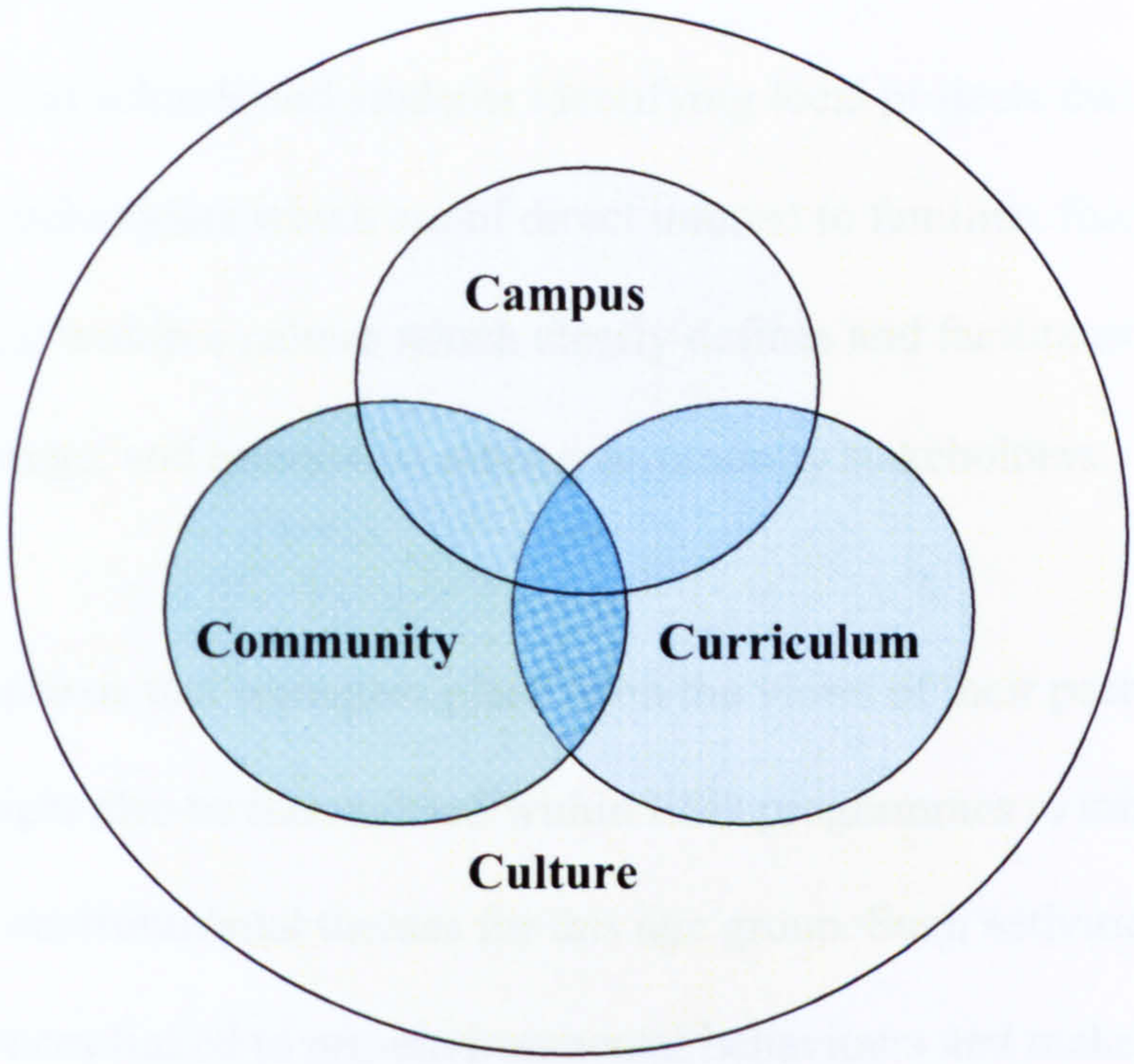

Figure 7.3 The Four C' Approach (CSF, University of Plymouth 2006:no page)

Similar approaches have been advocated elsewhere, for example by Uzzell (1999) who proposes a model of embedded links between school and community (Figure 6.1). However, as yet such instances remain experimental and are yet to be adopted as widespread practice.

The details of ESD programmes to address these criteria vary according to context. Nevertheless, a common challenge in thinking through the relationship between ESD and the home and family is the difficulties in transferring pro-environmental behaviours, cultures and practices between school, home and peer sites. One vehicle for doing so is to focus more explicitly on equipping students with the information, skills and authority to engage family members and peers in discussions and promote

'alternative' behaviours and choices. This would involve schools promoting direct relationships with parents about ESD and pro-environmental behaviour practices within schools, as well as schools and students identifying local projects that promote pro-environmental behaviours which are of direct interest to families. Such an approach would work best within a culture which clearly defines and facilitates networking, linkages, exchange, and interaction among community stakeholders.

The strong emphasis that teenagers place upon the views of their peers and peer group interactions might also be internalised within ESD programmes to raise the social desirability of environmental themes for this age group. Such activities should promote shared experiences linked to pro-environmental behaviours and make them integral to group identification and empowerment. The evidence from this study suggests that experiential education remains underutilised as a method to engage students with ESD and pro-environmental behaviours (Palmer and Neil 1994; Rickinson 2001). Yet such experiences are fundamental to enabling students to make stronger emotional and practical connections between themselves and the wider world, as well as to the personalisation of environmental issues. Despite the findings of this study, the values of experiential ESD are being increasingly recognised in the UK, Spain and elsewhere. In the UK there are numerous strategies now used by schools to enhance the student experience of sustainability (Eco-Schools; Sustainable School Evaluation Tool (Ofsted 2005); Sustainable Schools Framework (DCSF 2007); Sustainable School Strategy DCSF 2006) and similar projects are underway in Andalusia with the *Junta de Andalucia Consejera de Medio Ambiente* (2008) making a public commitment to residential experiential ESD for every child (discussed further in 7.52).

Information and behaviour change strategies which target consumption remained noticeably absent from the educational and domestic experiences of many participants in this study. In most cases they demonstrated support for consumerist and materialistic ideologies and practices. Participants also had minimal experience in managing household budgets and negotiating consumer choices with an environmental dimension, a theme that schools could embed within their interpretation of the curriculum. However, although schools have the potential to explore sustainable consumption, the practice of consumption lies mostly outside the school environment. Policy-makers must therefore also seek alternative ways to influence teenage consumers by considering their lifestyle aspirations and the pivotal role of media and corporate actors in manipulating these desires.

Individual environmental responsibility is an additional factor in environmental development that ESD has the potential to address more directly. Teenagers would benefit from ESD programmes which frame individual environmental responsibility within the situated-ness of teenagers' lived experience. The concept of common inheritance, which is currently popular within discourses of responsibility, is problematic for teenagers as their experience of this concept is often relational to adults. Helping teenagers to realise that responsibilities and capabilities are not defined solely by political inclusion, (especially the right to vote) may reduce the perception that they are less well positioned to contribute to pro-environmental behaviours (in their broadest sense) than adults.

Accommodating externalities which are specific to teenagers may further assist in producing ESD programmes that are representative, enabling and connected to teenagers' lives. Such programmes would reflect more accurately the reality of

teenagers' lived experiences, positioning them within a complex network of influences interacting to generate barriers and drivers to pro-environmental behaviours, rather than as isolated recipients of educational programmes. Although it is not always possible or useful to differentiate between multiple influences on behaviour, in highlighting implications for policy-makers, a practical approach to differentiating between influences on pro-environmental behaviours is necessary in order to target particular behaviours. The evidence generated from this thesis suggests that ESD and the family are appropriate vehicles for facilitating policy delivery, but that the influence of less institutionalised organisations such as peers and media on transferring pro-environmental behaviour skills and intention to act must be taken into account.

A potentially useful model for achieving this type of integration is proposed by Defra (2005b) to promote more sustainable ways of living, working and producing (Figure 7.4). The model is based on extensive research into consumer behaviour (Jackson 2005) and recognises that individuals' responses depend on how situations are framed. One task of policy, therefore, is to encourage 'desired' responses to given situations. Defra suggests that core to achieving this equitably through policy-making is enabling access to pro-environmental behaviour choices, engaging people in initiatives to help themselves, exemplifying the desired changes within government's own policies and practice, and influencing the social and institutional context in favour of sustainability (Jackson 2005). Its content can be usefully applied to key sites of socialisation for teenagers; schools, homes and, to an extent, media, to enhance integration of strategies and influences relevant to their environmental development. Structuring the findings of this thesis within the Defra model, it would appear that although teenagers are currently enabled to undertake a range of pro-environmental behaviours through formal education and infrastructure provision, in many cases they lacked sufficient engagement, exemplars and encouragement to achieve this goal. How teenagers are engaged and

encouraged will, as this study has demonstrated, differ according to many factors. However, greater awareness of the junctures and social relations that combine to influence environmental development and behaviour between sites can lead to strategies which engage teenagers in issues which are local and relevant to them, to schools which both teach and function according to sustainability principles, and to recognition of the social situated-ness and between-ness of teenagers.

In taking these ideas forward, it is important to recognise there is no single exemplar or 'road map' to pro-environmental behaviours, as this will be influenced by numerous individual, situational and cultural characteristics. These factors generate barriers and drivers to pro-environmental behaviours which policy–makers can identify, and to a greater or lesser extent, engage with. Nevertheless, these ideas could be of interest to practitioners interested in pursuing ESD as a lifelong and community-based strategy and to those who are dedicated to increasing pro-environmental behaviours as an outcome of educational processes.

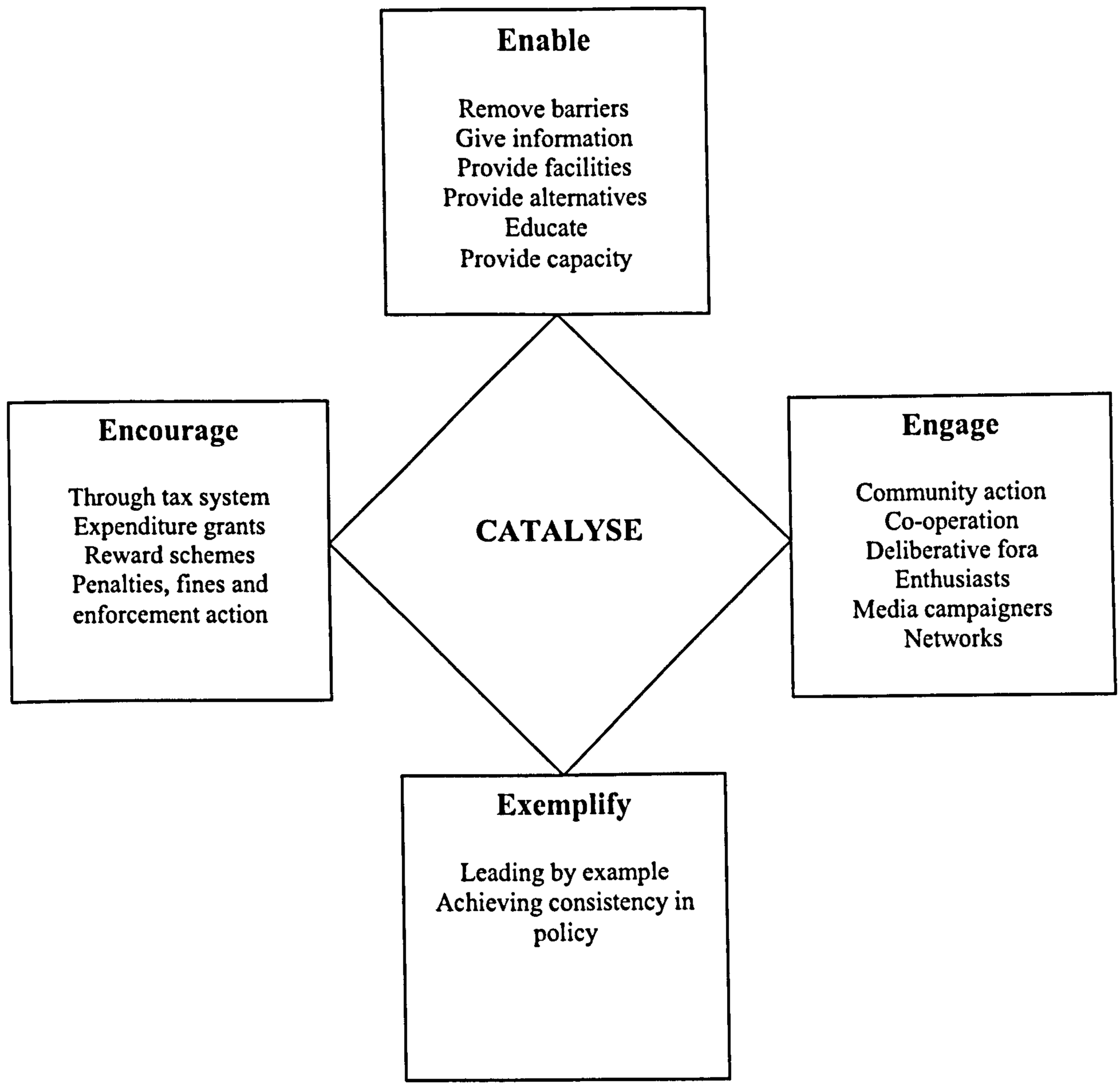

Figure 7.4 **'A New Approach'.** Transparency and authenticity in government and policy-making; to establish new sustainable ways of living, working and producing (Defra 2005a: no page).

7.5.2 Wider Debates

One of the key issues emerging out of this section and through various government-commissioned reports is the problem of translating national ESD policy into successful communication of ESD to students. As ESD is likely to remain the main vehicle for informing young people about environmental issues and strategies to ameliorate them, this will continue to be an issue for ESD pedagogy, teacher training, for schools'

interpretation of the curriculum and for schools as sustainable estates and actors within community initiatives.

These issues are now being recognised and addressed. In the UK, there are now strategic and sustained efforts to promote sustainable development within schools. The Department for Children, Schools and Families (DCSF) launched the Sustainable Schools Strategy in 2006 with the aim to make every school a sustainable school by 2020. The national framework for this strategy makes clear eight 'doorways' through which schools can progress sustainability[20] and advocates the use of school grounds, the local environment, off-site visits to other environments and residential visits as ways to increase the volume of experiential education within ESD. There are also increasing numbers of schools (currently 9000 in the UK) taking part in eco-school[21] initiatives which provide self- and externally accredited programmes of awards to member schools, the content of which closely mirror the requirements of the national framework of the Sustainable Schools Strategy. To monitor and evaluate the participation of schools Ofsted (2005) have created a 'Sustainable School Self-Evaluation Tool' and 'Self-Evaluation Form' which helps schools to identify their strengths and weaknesses in implementing the strategy.

Despite these progressive initiatives there are a number of policy issues for teacher training and development. For ESD to be a key feature for all trainee teachers, its validation within the Award of Qualified Teaching Status (AQTS) would significantly raise its profile. Currently, the only reference made to ESD in the Professional

[20] Food and drink, energy and water, travel and traffic, purchasing and waste, buildings and grounds, inclusion and participation, local well-being and the global dimension.
[21] Eco-school initiatives are run in the UK by Environmental Campaigns (ENCAMS). Eco-schools is one of five international education programmes run by the Foundation for Environmental Education (FEE). There are currently 40,000 Eco-schools in over 40 countries including the UK and Spain. More information on Eco-schools can be accessed at www.eco-schools.org.

Standards for Qualified Teacher Status (Dfes 2002) is that teachers must be aware of cross-curricular themes (which include ESD) at key-stage 3, a situation deplored at by the Geographical Association (GA) (2003) and which has consequences for the content and quality of ESD delivery. It is perhaps unsurprising, then, that a review of current debates on ESD reveals that teachers and schools have an acute need for educational support through toolboxes and examples of good teaching practice (Huckle 2006a; 2006b). Ofsted (2003), the QCA and 'teachernet'[22] all provide recommended resources and the DfES have launched a Sustainable Schools Framework (2007) advocating environmental and social actions necessary to ESD[23], supported by a web-service and a school self-evaluation tool. However, the QCA admit that the majority of web queries only seek an introduction to ESD rather than advice on specific teaching scenarios suggesting that more also needs to be done at school level to motivate teachers to seek out information that can improve the ESD component of teaching.

There are additional issues related to the teaching of geography in the national curriculum. In a report investigating teaching practice in geography, Ofsted (2008) highlight the decline in overall quality of provision in primary and secondary schools and dwindling student numbers, effectively reducing the numbers of young people who get to learn about sustainable development. Ofsted critiques the content and delivery of geography at secondary level and recommend a focus on environmental issues with a global dimension such as climate change, rising sea-level and sustainable development.

The situation in Spain where EA is also taught as a cross curricular theme is similar. There are significant doubts about the capability of the Spanish education system to

[22] 'Teachernet' is produced by the DfES as a resource to support the educational profession.

[23] 'Environmental actions are; food and drink, energy, water, purchasing and waste, buildings and grounds. Social actions are; inclusion and participation, local well-being (local citizenship), the global dimension (global citizenship). These actions can have learning benefits (fitter, more alert pupils), and economic benefits (lower bill for utilities), and the good practice demonstrated in schools can spread via parents, school suppliers and through the local community' (GA 2007: no page).

deliver and implement EA (amongst other forms of civic education). Naval *et al.* (2003) describe how the need for a broad educational remit at the national level to allow for interpretation by the *communidades autonomas* results in poorly defined criteria for EA. This results in EA which depends heavily on schools' own interpretation and willingness to integrate it within their teaching of the curriculum. Schools are expected to produce *'proyectos educativo de centro'*, school plans which outline how this is to be achieved. There has, to date, been little monitoring or evaluation of this system despite the role of the CIE in inspecting schools, however, in 2008 the MMA began offering conditional funding to Andalucian schools which can demonstrate adherence to the *Estrategia Andaluza de Educación Ambiental'* (Andalucian Environmental Education Strategy) (EAdEA)[24] (Junta de Andalucia 2001) and evidence of successful integration of EA into the school curriculum[25].

There have been further significant efforts to raise the profile of EA in Andalucia. In order to address the additional nature of EA to subject specific teacher training, the *Junta de Andalucia Consejería de Medio Ambiente* has, in 2008, promised publicly funded EA courses for all qualified teachers. Furthermore, in response the *Ley Orgánica 2/2006* (MEC 2006) which presents revised principles and objectives of the Spanish education strategy, the *Consejería* has committed to providing all primary and secondary age school students with a one to three day residential course in experiential environmental education at specially accredited centres.

[24] The EAdEA was set up in 2001 with the aim to develop programmes to promote EA across Andalucia. After extensive initial public consultation, the EAdEA has been slow to engage support for EA leading to annual reviews and continual emphasis on the need to strengthen commitment and communication between itself and target organisations.

[25] This funding scheme is only available to state funded and partly funded schools and not to independent schools (MMA 2008).

In addition to these developments the MMA and CENEAM now provide numerous electronic resources to promote EA in schools including, *'De mi Escuela para mi Ciudad'* (from my school to my town), *'CENEAM con la Escuela'* (CENEAM and the school) and *'Hogares Verdes'* (Green Homes). There are also increasing numbers of independent resources available for EA practitioners in Spain. Of note is the on-line service Ecourban[26] which provides information and activities to address sustainable development through the use of information technology.

It is apparent that in both case studies interpretation of the curriculum depends not only on its content as decided by the QCA and MEC, but on individuals and organisations within schools. At present ESD and EA sit uneasily within their respective curriculum driven by the statutory requirements of literacy, numeracy and examination targets. It is, therefore, essential to raise its profile to compete more effectively with these other curriculum strands and that school departments and teachers are encouraged more strongly to achieve excellence in delivering ESD and EA as an integral part of the curriculum. This will require strategies that comprise of both carrots and sticks as, in reality, it is unlikely that where schools are solely encouraged to become more sustainable that effective action will follow. Where affordable, designated ESD and EA co-ordinators are arguably the most effective way of facilitating ESD and EA throughout diverse curriculum subjects. Where cost is an issue, the provision of roving experts who can initiate, stimulate and support ESD and EA strategies within schools is a possibility. Such an approach would certainly address the climate of uncertainty that many authors claim restricts teachers' proclivity to embed ESD within their teaching (Calvo *et al.* 1998; GA 2004; Huckle 2006a; 2006b; Naval *et el.* 2003) and be valuable in spreading knowledge, experience and good practice. Other possible alternatives could

[26] www.ecourban.org

build upon the successes of charity-school partnerships which can provide advice on greening both the curriculum and estates management and include GAP in the UK and eco-school initiatives which are common to both countries.

Increasing the sustainability of school estates is part of both government's commitment to reducing energy and resource consumption and its carbon footprint across its estates (DfES 2005/6; MEC 1999). Apart from the long-term cost benefits of undertaking this task, the greening of school sites has the additional benefit of providing inexpensive opportunities for experiential learning. However, the findings here strongly suggest that achieving greater levels of success requires contributions from students to the design, implementation and maintenance of these types of projects. Indeed, teacher guided, student-led learning is an important, yet rarely[27] applied, pedagogic practice which can help students not only to understand the assumptions implicit within their own behaviour but also to broach broader issues of citizenship, inclusion and democratic process.

The desirability of promoting sustainability partnerships between schools and local communities is a natural theme of sustainability in its broadest sense. It requires improved communication and transfer of ideas between the school, local businesses, local government and NGOs to identify opportunities to teach ESD and EA through case studies and, ultimately, for students to participate in processes which motivate the transformative elements of ESD. This depends to a large degree on dedicated individuals who can set up and maintain the contacts and networks necessary to facilitate these events. Nevertheless, such approaches would have obvious benefit to teachers and students and would also assist businesses and government bodies that are increasingly subject to EU and national government sustainability objectives and,

[27] In the experience of teenagers who participated in this study.

increasingly, in need of employees who are well versed in the principles and practical applications of sustainable development[28].

In addition, it has been argued in this thesis that pro-environmental behaviour change is rooted in individuals' social relationships and sites of socialisation. Teenagers reported that public spaces were where they observed acute tensions between sustainability rhetoric and unsustainable practices, such as litter dropping, dog fouling, private car use, and industrial activity and increasing air travel. Public space is, therefore, an important learning environment where individuals learn that, in the main, unsustainable practice is socially accepted. By embedding ESD and EA within the community, students are given opportunities to question these events, gain multiple perspectives and, perhaps, to challenge the status quo.

Despite these arguments in favour of community strategies, several issues remain. Small- scale community initiatives are not always easily accommodated within societies which tend to prioritise individual liberties rather than collective responsibilities. This highlights a wider need to reconcile governance with individualism. Many social and institutional processes debilitate the conditions necessary to progress this type of management and, in the case of teenagers (and children), these inhibiting conditions appear to be accentuated by their exclusion from many democratic processes. The participants in this study felt they were not consulted or considered in many aspects of the democratic process and that, in general, they were less powerful than other groups of

[28] In the UK the DCSF is in the process of reforming 14-19 year education by introducing Diplomas which will be vocationally focused combining practical and theoretical education. There are several Diplomas which will directly promote sustainability. Beginning in September 2008; Society, Health and Development and Construction and the Built Environment, and planned to begin in 2009; Environment and Land-Use.

agents. Although, as a general political trend, many Western governments now promote governance through regional and community level partnerships involving individuals, experts and the state in pursuit of sustainable development (and pro-environmental behaviours) (Jackson 2005), teenagers' and other minors' participation in this process remains inconsistent. This study has established that participant experience of democratic decision-making about the environment is spatially constricted to local sites and mediated by adult agents, in some cases effectively minimising teenagers' perceived ability to contribute to these important debates. Addressing this requires a more 'hands on' policy approach which actively seeks to elucidate understanding of the social and institutional context of teenagers in order to stimulate realistic debates about, and participation in, democratic process, sustainability and pro-environmental behaviours amongst teenage groups. Although far from a complete solution, such an approach would be an important step in facilitating participation in community-based change.

The intention of this discussion is not to undermine traditional policy strategies of regulation and information, as in reality it is unlikely that any single approach can deliver widespread behavioural change. Rather, it points out that for this particular age-lifestyle group, community based strategies are likely to be the most successful in developing greater consistency and reflexivity in behavioural change throughout the different sites teenagers occupy.

Further issues exist for policy-makers interested in promoting sustainable consumption practices. The suggestions made here are not easily achievable within a neo-liberalist socio-economic policy climate which, in many ways, discourages less or alternative forms of consumption through the prioritisation of particular mainstream consumptive

practices. Neo-liberal approaches depend on markets as the primary vehicles of economic management and economic growth remains the traditional marker of government economic 'successes. This raises questions about the feasibility of policies which challenge these processes and ultimately, the political will to accept less efficient economics based on alternatives or reduced levels of consumption as a consequence of addressing unsustainable consumption practices.

Finally, in the light of these and other issues, there is evidence that policy is beginning to recognise diversity between population groups, as a key component of targeting information and pro-environmental behaviour strategies. In efforts to identify key groups, researchers and policy-makers are now experimenting with segmentation analysis (Hutt and Speh 2001). This posits that different people must be targeted in different ways as they are motivated by different factors and experiences (Straughan and Roberts 1999). It recognises that the same behaviour can take place for a multitude of reasons and that identifying individuals' who are motivated in similar ways increases the potential for targeting the social marketing of behavioural change policies (Bartels and Nelissen 2002). It is currently being used to develop applied understandings of sustainable lifestyles, travel behaviour (Anable *et al.* 2006) and littering (ENCAMS 2001; 2002; 2003) and could potentially be used to identify nuanced differences between consumer groups (including teenagers) making it an important tool in pro-environmental behaviour research.

In summary, this section has demonstrated how understanding the social and institutional context of teenagers is vital to effective policy-making and has discussed the challenges facing the integration of strategies which enable more consistent pro-environmental behaviours. Section 7.6 now summarises the key points of the chapter.

7.6 Chapter Summary

This chapter has explored the theoretical contribution of this research project by developing analytical frameworks that extend existing literatures about drivers and barriers to pro-environmental behaviour. The chapter has demonstrated how key themes within teenagers' geographies can be utilised to demonstrate how unequal power relations between adults and teenagers impact on teenagers' participation in pro-environmental behaviours. The chapter has then made a significant link between lifestyle choices and the ways in which key sites of socialisation and the people and processes within them restrict or create choices individuals feel able to make. Although this observation is made in the context of teenagers who experience spatial and other restrictions compared with adults, a case for the wider applicability of examining relationships between adult lifestyles and sites is presented with indications of how this can benefit pro-environmental behaviour strategies.

Finally, the chapter has outlined implications for policy-makers, advocating an emphasis on the integration of strategies within and between key sites and promoting a broader experiential base for ESD which can more accurately reflect the realities of teenagers' lived experiences and situated-ness. Chapter 8 now presents the final conclusions of this thesis, reiterating the key points of contribution before proposing suggestions for future research.

Chapter 8

Conclusions

8.0 Introduction

The overall aim of the thesis has been to establish and explore significant influences on teenagers' environmental awareness and participation in pro-environmental behaviours in two distinct EU locations. From existing literatures several different frameworks for understanding how and why individuals perceive and participate in pro-environmental behaviours have been discussed and it has been argued that the most comprehensive of these are those which seek to integrate psychological variables and social context within a single schema (Blake 1999; Darnton 2004 a; 2004b; Jackson 2005; Stern 2000; Tanner 1999). In recognition of this, ESD, families, peers and media were all considered as influences on behaviour and included in the research framework.

The empirical evidence from this study establishes that teenagers' perceptions of environmental issues and their negotiation of pro-environmental behaviours are the products of an amalgam of these variables. The study also finds that teenagers' perceptions of drivers and barriers to behaviour are not static but subject to the social groups they belong to and the sites of socialisation they frequent and, furthermore, that certain drivers and barriers impact in subtly distinctive ways on teenagers compared with other age cohorts. These processes have significant implications for their participation in behaviour.

These findings have important consequences for academic and policy circles where ESD/EA has been the preferred vehicle for influencing pro-environmental change among this age group. The thesis argues that in some cases, ESD/EA is failing to deliver

and maintain changes on a sufficient scale and that this failure is due in part to reliance on simulated, didactic, classroom based pedagogy when experiential, authentic activities are also necessary to disseminate the transformative elements of ESD/EA. It also argues that ESD/EA will need to do more to recognise and internalise the influences of significant social groups and external sites of socialisation on environmental perception and behaviour. In short, ESD/EA is only part of the equation and this issue requires recognition.

To conclude this analysis and synthesise its findings, this chapter firstly reviews the key findings in relation to the original aims and discusses contrasts and continuities with established literatures (8.1). Section 8.2 then discusses the contributions the study makes to contemporary debates in human geography. Finally, section 8.3 suggests pathways for future research which can progress the findings established in this study.

8.1 Main Findings and Evaluation of the Thesis

Within the overall aim outlined above, there were three objectives. Section 8.1 considers the key findings of the thesis in relation to these. To reiterate, the objectives were:

1. to explore how teenagers understand and value the environment and sustainability;

2. to determine key barriers and drivers of pro-environmental behaviour amongst teenagers, including socio-demographic variables;

3. to evaluate the impact of differentiated power relations between adults and teenagers upon teenagers' participation in pro-environmental behaviours.

8.1.1 Environmental Perception

Teenagers in both case study locations held similar ontological views about the environment, constructing it as a series of embedded natural, social, economic and political issues. However, the conceptual links between these entities were, at best, inconsistent and rarely explicit. In exploring these links it appears that the main conceptualisations participants' associated with the environment were (i) nature and (ii) environmental problems.

How teenagers conceptualised and reconciled their relationship with nature was illustrative of many complexities inherent in their perceptions of the environment. Nature was often described as a proxy for the environment and used as a framework for debating appropriate uses of the environment. This proved to be a complex issue for teenagers to negotiate. In the majority of cases, the values they held for the environment had evolved from childhood interest in nature resulting in support for an inherent value of nature; yet, participants simultaneously (and increasingly with age) supported anthropocentric discourse which legitimised nature as having value mainly through its utility as a resource for people (McGregor 2004). This legitimisation took various forms. Teenagers tended to think of nature and animals as part of play and, therefore, as mostly suitable themes for younger children[1] rather than for adolescents, while language was an important tool in replacing emotive associations for nature that participants' held

[1] Although the findings suggest that in some cases animals are valued separately to other environmental concerns.

as children with utilitarian ones which better served anthropocentric objectives and the maximisation of individual benefit.

Participants also understood the environment as an amalgamation of complicated and problematic environmental issues. These issues were understood to have multiple foundations that originated out the social and economic mismanagement of physical resources and continued pollution over many decades. Participants tended to distrust actors with the power to influence these processes; namely the representatives of institutional and capitalist structures which were viewed as unsympathetic to the plight of nature (Bedford 2003; Burgess *et al.* 1998; Macnaughten and Scott 1994). The mistrust of high powered actors had further implications for participants' perceptions of the environment, resulting in pessimistic imaginations of the future and cynical views of human nature as fixed and immutable and, therefore, unable to affect the necessary changes to avoid serious environmental degradation (Worsley and Skypiec 1998).

These perceptions had consequences for participants' experiences of efficacy and agency to influence change (Uzzell 2000), suggesting that the ways teenagers understand and conceptualise the environment is imbued with meanings inextricably linked with their own position within power structures. If these perceptions affect individual negotiations of efficacy and agency to influence change, then they are important factors in individuals' intentions to participate in pro-environmental behaviour. Identifying a relationship between environmental perceptions and individual motivations to undertake behaviour (changes) is an important contribution from this thesis to a field of research which often specifies what respondents understand as the 'environment' but does not always explore the implications of this for behaviour (Darnton 2004a; Eurobarometer 1999; 2002; 2005).

The limitations to these findings should however, also be considered. First, participants were not always able to articulate the conceptual links between the social, economic and environmental pillars of sustainability when talking about their environmental perceptions. This suggests that these are not yet fully formed and so any resonance these have for behaviours may be subject to change as they continue their education and develop as young people (Mathews 1986). Also, it can only be suggested that a relationship exists between negative and problematic constructions of the environment and perceived efficacy and agency to influence change. It is beyond the remit of this thesis to test this relationship and although this observation is proposed as a barrier to pro-environmental behaviours, more work is needed to identify the mechanisms which link perception and behaviour (Uzzell 2000).

8.1.2 Determining Barriers and Drivers of Pro-environmental Behaviour

Participants cited a range of barriers and drivers which influenced their intention to participate in pro-environmental behaviours. Many of the barriers and drivers teenagers described were recognisable from the literatures informing this study, for example age, logistics, knowledge and information, time constraints, cost, convenience, comfort, perceived responsibility, family, peers and media. A brief synopsis of the most significant of these is now provided.

The study concludes that although individual factors such as attitude, personal responsibility and locus of control can pre-dispose an individual to participate in pro-environmental behaviours, all individuals are subject to a range of social and cultural influences which act as barriers and driver to behaviour. Certain individual characteristics emerged as important to teenagers' understanding of and response to

environmental issues, the most significant being age. Ollie *et al.* (2001) state that there is no correlation between age and behaviour and a definitive response to this is certainly beyond the remit of this thesis. However, the study clearly demonstrates that many of the age related experiences of teenagers do influence their perceived sense of agency to influence change. Examples of this include their tendency to discount responsibility through time, diminished economic accountability and ultimately, participation in pro-environmental behaviours. Therefore, it is not age that itself which influences behaviour but the way age groups are socially constructed which the thesis suggests can include or exclude them from personalising environmental responsibility and participating in pro-environmental behaviour.

Although the majority of participants reported attitudes supporting environmental protection and sustainability, the findings suggest there is a danger in confusing responses learnt through ESD and sustainability rhetoric with attitudes (Morris and Schagen 1996). It was evident that pro-environmental attitudes struggled to compete with simultaneously held attitudes about how to live which in some cases favoured environmentally unsustainable behaviours. It seems that although attitudes can represent a pre-disposition towards pro-environmental behaviours, these alone rarely produce it. It has therefore been argued that attitudes are multi-dimensional and are a better indicator of pro-environmental behaviours when based within knowledge, experience and conviction (Jensen 2002; Richard and Morgan 1974).

In terms of logistics, participants reported that they were more likely to participate in pro-environmental behaviours if opportunities and access were provided (Barr 2000; 2003). However, when discussing behavioural situations where these provisions were made (recycling facilities, litter bins at school, public transport provision), other barriers

and drivers were often cited as hindering participation. Therefore, although logistics are essential to enabling pro-environmental behaviours, they do not directly affect teenagers' participation in pro-environmental behaviours in a consistent or causal way.

In exploring cost as a barrier to or driver of pro-environmental behaviours, the majority of teenagers experienced limited economic citizenship which restricted their capacity to make decisions about consumption involving an environmental component. This resulted in many discounting decisions entailing financial responsibilities until they reached adulthood and full economic citizenry. Differences in the way families conceptualised cost as a parental or family wide responsibility also seemed influential in teenagers' participation in pro-environmental behaviours with a cost benefit. These observations demonstrate how cost as a barrier and driver of pro-environmental behaviour amongst teenagers is perhaps different to other population groups. It is embedded within notions of responsibility, of meaning and the socio-cultural intricacies of family structures. The evidence here also suggests that those with lower incomes are more susceptible to pro-environmental behaviour change strategies with a cost benefit.

The findings suggest that in terms of information provision, ESD is successfully raising awareness of environmental issues. Despite differences in ESD delivery in Devon and Malaga, high levels of awareness of a range of environmental issues were reported and only a minority of participants self-reported their environmental knowledge as 'not good' (Table 4.24). When discussing ESD delivery, it emerged that many students lacked opportunities to participate in experiential learning which can be helpful in promoting environmental values (Aldrich-Moodie and Kwong 1997; Basil and White 2000; Blades 1989; Hammond and Collins 1993; Hart 1997; Hutchison 1998; Jones 2003; Loughland *et al.* 2003; Palmer 1998; Palmer and Neil 1994; Pui Ming Yeung;

Scott and Gough 2003; Sterling 2001) and also that schools' estate management and sustainability policies were important factors in students' perceptions of sustainability as a legitimate paradigm (Morris and Schagen 1996). Many schools were tied to redundant systems of provision and were ineffective in generating and operating sustainability policies. This was often observed by students, many of whom felt that ESD paid only lip-service to sustainability goals and those school officials who promoted ESD in rhetoric but not in management and behaviours, often lacked the conviction and skills necessary to transform information into pro-environmental behaviours within the school or other key sites.

To date, research and policy have often promoted ESD as the dominant strategy for pro-environmental behaviour change. However, despite epistemological changes in the pedagogical nature of ESD (from a vehicle for information delivery to its present day conception as an action plan for achieving sustainability literacy and sympathies amongst individuals, estates and communities (DfES 2003)) the study's findings suggest that much work remains in order to achieve these objectives (Rickinson 2001). ESD appears imbued with assumptions that it can disseminate behaviour change within and beyond the immediate educational context but in many cases schools and teachers lack cohesive and longitudinal frameworks for doing so. From the analysis, several points of relevance to ESD research are noted: (i) ESD could benefit from focusing on positive environmental futures and promoting solutions to environmental issues as achievable through individual responses; (ii) ESD could be better promoted as a set of skills embedded in desirable career paths; (iii) schools can better equip students to support sustainability if they first consult student perspective; (iv) recognition of the situated-ness of students' lives in relation to adults, organisations and institutions is an important factor in teenagers' perception of environmental responsibility; (v) by

recognising the difficulties students encounter in transferring knowledge and pro-environmental behaviour skills between schools, home and other sites, ESD practitioners can better enable them to negotiate multiple socio-spatial contexts; and (vi) increased recognition of the home as a core site for pro-environmental behaviours and better integration of school-led behaviour strategies with those in the home to improve student's understanding of barriers and drivers to pro-environmental behaviours. Furthermore, this study reflects others in concluding that there continues to be an over-reliance on didactic teaching methods to communicate ESD and that this is unlikely to motivate a behavioural response form students (Envision 2004; Huckle 2006b; Palmer and Neil 1998). The ESD literature is rich with examples of the accomplishments of experiential approaches to facilitating environmental values and pro-environmental behaviours. However, educational practitioners (Calvo *et al.* 1998; Palmer and Neil 1994) also document the economic, logistical and management difficulties associated with such activities. The findings here suggest that on-site sustainability and pro-environmental behaviour strategies are better suited to student needs and can be more easily achieved than off-site activities. Such initiatives have the additional benefit of visibly progressing schools as examples of community level organisations where students can study *and* participate in sustainability[2].

The influence of media on pro-environmental behaviours amongst teenagers was difficult to identify. Participants believed that in particular, television was an important communicator of environmental information but that this was often framed as pessimistic and un-entertaining. Importantly, media representations of environmental social movements often distanced teenagers from considering participation in this type

[2] The same argument is being developed in HE through the work of the Environmental Association of Universities and Colleges (EAUC) which was launched in 1996 with the aim of raising the profile of environmental management and facilitating improvement of environmental performance in member institutions (EAUC 2008).

of behaviour, even when they were sympathetic to the organisation's cause. On the whole, participants felt that a more consistent and positive portrayal of environment and sustainability themes in the media was necessary, especially when television provides such a critical and high profile platform for unsustainable consumer practices through advertising and the celebration of pecunious lifestyles.

In contrast, families proved to be pivotal agents in the construction and maintenance of heuristics underpinning habitual pro-environmental behaviours and in engendering an overall predisposition towards environmental and sustainability themes. Mothers were especially significant in promoting pro-environmental behaviours among their children due to the perceived cost benefits of some behaviours and beliefs about appropriate social conduct. This observation offers fresh insights about the influence of gender on behaviour. Many previous studies have made comparisons between the sexes without full consideration of the influence that male and female roles may have upon individual responses to sustainability (Grob 1991; Hawthorne and Alabaster 1999; Lehmann 1999). It is then perhaps unsurprising that knowledge about the impacts of gender on pro-environmental behaviour has remained ambiguous (Kanagy *et al.*1994; Stern 1992). There was also evidence that cultural influences within families differed between Devon and Malaga and that this impacted on children's participation in pro-environmental behaviours.

Peer groups tended to categorise the environment as a scholarly activity and not one which merited sustained peer interest. Many individuals worried that expressing sympathies for environmental causes, or sustainability, would lead to being ostracised by their peer group and this was a powerful influence on behaviour with peers. However, there were instances of peers becoming motivated around local environmental

issues which coincided with peer concerns and these events demonstrated that peer groups have some potential as units for deeper reflection on environmental and sustainability themes.

Overall, although participants were well versed in the rhetoric of common inheritance and individual environmental responsibility, in many cases behaviour was mediated through adult controlled organisations and institutions. Adults were seen as actively contributing to environmental issues and as gatekeepers of behaviours where age was a factor, for example, driving or voting. These ideas are discussed further in 8.1.3.

The findings indicate that teenagers' participation in pro-environmental behaviours was strongly influenced by socio-spatial context. The difficulties many participants experienced in transferring pro-environmental behaviour skills between different sites of socialisation emerged as a significant barrier to consistent behaviour (Bedford 2003). The ontological and organisational differences between sites throw up obvious hurdles for members in terms of culture, provision of resources and opportunities, as does negotiating the multiple lifestyle and reference groups that were integral to different social sites. It seems, therefore, that decisions about pro-environmental behaviours are subject to a complex of economic, cultural, social and inter-personal relationships which are manifested as barriers and drivers which are particular to the immediate social context.

The thesis' observations about transference of behaviour between social contexts are important, empirically-based contributions to the existing literature. Although several influential authors have established the need to consider multiple influences when identifying causal factors of pro-environmental behaviours (Blake 1999; Leonard-

Barton 1981; Kaiser and Fuhrer 2003; Stern 2000), there is little empirical work available on the geographies of this issue. Therefore, many current understandings about individual negotiations of pro-environmental behaviours do not consider the individual as subject to multiple sites, restricting understanding of the impact of socio-spatial context on decision-making about pro-environmental behaviours and, by implication, of how best to target strategies to encourage consistent behavioural change.

In considering cultural influences on pro-environmental behaviour, post-materialism (Inglehart 1990) was utilised in chapter 3 as a conceptual framework to explain differences in how individuals from Devon and Malaga negotiate sustainability issues (the assumption being that evidence of post-material views on environmental sustainability will be observable in both populations but to a greater extent in the Devon sample). Indeed, the findings did suggest that the Devonian participants were more often encouraged to support environmental agendas and were more familiar with activist and non-activist public sphere citizenship behaviours. However, these social practices did not appear to motivate them to undertake pro-environmental behaviour. Although post-materialistic values were utilised to some extent by the majority of participants, the evidence suggests that only rarely were these values responsible for driving non-activist pro-environmental behaviours. This assertion is supported by the study's finding that although an established environmental social movement in the UK resulted in some teenagers participating in NGO and other environmental-political activities, it was the Malagueño teenagers who reported more consistent participation in pro-environmental behaviours. This appears to be the result of an emphasis on local issues, behavioural solutions, and the use of simple language referents when discussing the environment and sustainability, while family structures encouraged participation in certain low-level behaviours.

From the empirical evidence it seems that the decisive drivers and barriers to pro-environmental behaviour for the teenage participants in this study are their social groups and the multiple sites they frequent in daily life. These factors combined to impact on the Ipsative possibility sets teenagers considered when decision-making about pro-environmental behaviour.

In considering the limitations of these findings, the conceptualisation of pro-environmental behaviours in this study is generic and although specific examples have been explored during the course of the investigation, overall, the focus has been on exploring teenagers' responses to generic drivers and barriers. In reality, however, these will differ depending on which behaviours and which contexts are under discussion. However, ascertaining individuals' general pre-disposition towards pro-environmental behaviours has long been recognised as critical, and this knowledge is valuable in a research climate which tends to position teenagers as primarily responsive to ESD, rather than as reactive to a myriad of barriers and drivers.

8.1.3 Evaluating Differentiated Power Relations between Adults and Teenagers

Another key contribution of the study has been to establish that differentiated power relations between adults and teenagers are embedded within the contexts which shape teenagers' lives; living with parents, attending school and limited financial, social and political autonomy (Valentine 2003). These relationships can influence the sense of ownership teenagers have over pro-environmental behaviours and ultimately, the extent of their participation.

Teenagers are formally excluded by age from certain environmentally significant behaviours including driving and voting but are also distanced from other domestic environmentally significant behaviours e.g. choosing electricity or gas suppliers and deciding which grocery products to buy. Adults are viewed as gatekeepers of these behaviours and, therefore, often perceived as wholly responsible for them. In some cases these exclusions had additional repercussions for teenagers' participation in accessible low-level behaviours. Objective constraints governing political and activist activities had implications for the perceived efficacy of undertaking low-level behaviours as many teenagers believed themselves to be ineffective without parallel political action.

At school and within their communities only a minority of students had opportunities to generate or contribute to pro-environmental behaviour strategies and projects. Where these projects existed there were again, adults overseeing progress and common criticisms of such initiatives included elitism and lack of student consultation. Schools were also the main vehicles for disseminating ideas about environmental responsibility. These were not easily communicated to teenagers as they found the concepts of individual environmental responsibility and common inheritance untenable in the face of the unequal relationships they had with adults. These ideas were often reduced to rhetorical status and, in general, were not useful frameworks for embedding environmental responsibility.

Their identity as minors was further relevant for how responsibility for pro-environmental behaviours was disseminated within families. In Devon behaviours were often seen as the responsibility of parents, yet in Malaga responsibility was understood as shared by all family members (an illustrative example being cost). This trend seemed

embedded within distinct local constructions of 'child' and 'adult' and the activities, tasks and expectations associated with each. This suggests that greater expectations from parents about their children's participation in pro-environmental behaviours are vital to minimise the adverse impacts of these perceived responsibility hierarchies.

In terms of possible limitations of these findings, arguably many of the processes and constraints associated with the situated-ness teenagers describe can be likened to arguments of sequestration and disempowerment in the face of increasingly dominant globalisation. However, in this study it was teenagers' themselves who qualify that differentiated power relations between themselves and adults are additional to themes of sequestration.

The study's findings lend support to many established understandings of individuals' negotiation of pro-environmental behaviours as well as offering new insights about the ways teenagers as a social group experience and reproduce sustainability in their everyday lives and the impact of subtle cultural differences between the two locations. In so doing, the thesis contributes to a growing literature documenting how different populations negotiate sustainability issues through an amalgamation of individual, social and cultural processes (Burningham and Thrush 2001; Cowe and Williams 2001; Darnton 2004b; Holdsworth 2003; Macnaughten 1995; Stern 2000).

From these findings this thesis concludes that to promote behavioural change amongst this age-group, conditions need to be created which promote perceptions of the environment which encourage efficacy and agency, which reduce barriers and promote drivers of pro-environmental behaviour and which re-define the concept of individual environmental responsibility to accommodate teenagers' perceptions of unequal access

to environmental decision-making processes. This will require a more co-ordinated and visible campaign to pursue sustainability spanning government, industry, business, education and media.

8.2 Contribution to Contemporary Debates in Human Geography

In addition to enhancing understanding of influences of pro-environmental perceptions and behaviours, this thesis has also contributed to several contemporary debates in human geography. As sustainable development becomes an increasingly salient social and political issue, there is a need for research which challenges traditional epistemological and methodological boundaries between subjects to broaden scholarship (Hobson 2006). This study has drawn on ideas from environmental psychology, youth studies and human geography, three diverse subjects with contrasting approaches to the study of pro-environmental behaviours. Yet, despite these differences, the study's accomplishments demonstrate that there are benefits from enlisting ideas and concepts from a range of approaches and seeking out junctures at which they can 'align, triangulate, challenge' and contribute to existing knowledges (Hobson 2006:293). Indeed, the interplay of individual, social and cultural influences evident in this and other pro-environmental studies suggests the benefit of geographers not only drawing from, but collaborating with, expertise from other social science fields (Barr 2003; Hobson 2006).

The thesis also makes contributions to continuing debates within geography about ESD. In the UK the GA is keen to lay claim to ESD at primary and secondary level and this geographical focus has relevance for students' understanding of sustainability in FE and HE. It is, therefore, essential that within geography, the knowledge, skills and values which can encourage students to reflect on behavioural change are better communicated to students. This requires not only the continuation of information provision about

causes and effects of environmental issues but also greater emphasis on strategies to ameliorate issues and understanding the visions students have of their own place in the world and the implications of this for their interaction with sustainability (Jensen 2002; Payne 2000). In the light of the damning 2008 Ofsted report on teaching practice in geography, geography in secondary education seems to be facing several challenges; to re-invent itself as a modern and relevant curriculum subject, to strengthen assessment, to strengthen links with other civic education strands as well as to reinforce student understandings of sustainable development[3].

Also important to ESD and behaviour-change policy more generally is the issue of transferring behavioural skills between different sites. This evidence from this study suggests that a promising approach for addressing these issues is making drivers of pro-environmental behaviours both analogous across sites and sensitive to the idiosyncrasies of different lifestyle groups. Although policy responses are now beginning to recognise this (Figure 7.4), a crucial difficulty remains in how policy is constructed, implemented and communicated in schools, homes, and in corporate and public spaces. This raises questions for human geographers interested in the processes and spatial manifestations of government and governance for sustainability.

By exploring the influence of different sites occupied by teenagers on their behaviour, key geographical themes have been revealed concerning the importance of scale and agency to environmental perception and behaviour. Overall, recognising the importance of social sites to understanding pro-environmental behaviours in different populations is a valuable contribution that geographers can make, re-introducing the spatial into debates long dominated by arguments of rational choice versus social process. Similar arguments advocating spatial analysis can be applied to the social and cultural processes

[3] More information on proposals for how these criteria will be achieved can be found in the Action Plan for Geography (GA/RGS-IBG 2006)

which resulted in common understandings of sustainable development but differentiated pro-environmental behaviour responses in the two teenage populations.

The role of lifestyle as a set of preferred choices about how to live is of particular interest to human geographers experimenting with segmentation analysis. Segmentation analysis is becoming popular in pro-environmental research and is being used to develop applied understandings of sustainable lifestyles and travel behaviour (Anable *et al.* 2006). This suggests that although the lifestyle concept is not solely a geographical construct, it has the potential to be utilised by geographers to improve understanding of how individuals interpret and respond to their impacts on the environment.

Finally, within human geography there has been a growing and sustained interest in phenomenological interpretations of marginalised voices. Children have received increasing attention as a marginalised group and Weller (2006) argues that, as an extension of childhood, teenagers are a separate identity group which can be better understood from research which explores the themes of between-ness (Tooke 2000), responsibility, participation and social agency as well as the power relations informing these processes. These concepts proved useful in helping to understand teenagers' responses to sustainability and could be of benefit to human geographers studying this age group in other contexts.

8.3 Towards a Research Agenda

This thesis has identified and explored the mechanisms influencing teenagers' environmental awareness and participation in pro-environmental behaviours. However, although these findings offer new insights into the ways in which teenagers understand and respond to pro-environmental behaviour, like similar studies, they do not offer

exhaustive explanations or solutions to these issues. This section, therefore, suggests avenues for further research.

Undoubtedly, the critical role of parents in orientating their children's worldview of the environment, sustainability and participation in pro-environmental behaviours requires continued and sustained research. The study identified evidence of a generation of parents who lacked awareness of sustainability themes because they were educated before the assimilation of ESD into the curriculum. These individuals were often identified as ambivalent towards pro-environmental behaviours and these situations were frequently compounded by social contexts where individuals perceived little advantage from even pro-environmental behaviours with a cost-benefit. Researching this group could provide better understandings of the barriers young people experience in relation to pro-environmental behaviour change within families, as well as presenting policy-makers with an opportunity to target such households with appropriate information reflecting the totality of knowledge and skills held by family members, instead of targeting solely the adult householder.

The study also established that within many families, mothers were key agents in educating and involving their children in pro-environmental behaviours. Mothers tended to favour behaviours with a cost benefit but, in many cases, also motivated their children to take part in other behaviours which they perceived represented good conduct. This latter point could provide the basis for research which explores the roles of environmental responsibility and pro-environmental behaviour within discourses of parenting. Parental responsibility is legally defined in terms of rights and responsibilities and includes partial responsibility for educating children. There is, therefore, scope for expanding discourses associated with parenting and education to

include the promotion of knowledge, skills and opportunities to undertake pro-environmental behaviours. Controversial as this may initially appear, there is anecdotal evidence that parents are increasingly interested in integrating sustainability and/or environmentalism within their parenting strategies[4]. Research which can identify salient drivers and barriers to integrating environmental responsibility and pro-environmental behaviours within preferred parenting strategies could therefore provide deeper understandings of why differences exist between parents' motivations to instil these themes with their children.

One critique that can be applied to this thesis and to other pro-environmental research is a reliance on reported behaviour. This has posed, and continues to pose, difficulties, as SDB and over-reporting of participation are recognised methodological problems with researching valence issues such as the environment. In view of the study's emphasis on the criticality of family relations to teenagers' involvement in pro-environmental behaviours, participant observation offers possibilities both to reduce the influence of SDB and valence characteristics upon findings and to examine in more detail how families negotiate and produce pro-environmental behaviours. Participant observation would be potentially useful in: (i) highlighting barriers and drivers to behaviour at household level; (ii) identifying the motivations of family members who delegate environmentally significant routine tasks; (iii) illuminating how responsibility for pro-environmental behaviour is constructed within families; and (iv) providing opportunities to document parental strategies to motivate sustained behavioural responses from their children. To date, participant behaviour has rarely been used in pro-environmental behaviour research, mostly due to issues of privacy and invasiveness. However, it offers promising opportunities to broaden understandings of how families from different

[4] This is evident through the proliferation of books and magazines dedicated to green parenting. Examples in the UK include 'Teach Yourself Green Parenting (Cattanach 2007), The Green Parent (since 2004) and Juno (since 2003) and charities like 'Babygroe which' provide information for parents.

spatial, socio-demographic and cultural backgrounds negotiate pro-environmental behaviours. Despite assumptions of public resistance to being researched at such close quarters, excellent examples exist for participant observation research in this field (Bedford 1999; Hobson 1999; 2001; Payne 2005).

The study has raised questions as to how ESD can be better positioned to transform young people's behaviour considering that information about environmental and sustainability issues are not sufficient requirements for pro-environmental change and that many of the behaviour change strategies documented here were unsuccessful in motivating consistent, long-term changes. The thesis places emphasis on the need for schools to lead by example and to provide better access to experiential learning. Therefore, research which identifies knowledge and skills gaps amongst teachers and which casts light on the social, economic, organisational and logistical barriers faced by schools in relation to sustainability education would be useful.

The study's findings further suggest that embedding ESD strategies within local sustainability issues may assist teenagers in coming face-to-face with sustainability through engagement in local community management. This suggests two research avenues to further awareness of how this can be achieved. Firstly, evaluating the nature and effectiveness of partnerships between schools and non-school bodies to promote sustainability and pro-environmental behaviour could advance and help to disseminate best-practice. Secondly, small-scale research studies investigating the motivations for, and mechanisms of, participation by teenagers in such projects would be a valuable contribution to academic debate about 'children's' participation in environmental decision-making and broader political processes.

Although the study revealed some ways in which television influenced participants' perceptions of the environment, it was less successful in ascertaining how television influenced pro-environmental behaviours. As media are the main vehicles with which corporations communicate commercial information to target audiences, continued research into the impact of advertising on young people can help further understandings about the impact of knowledge communicated in this way and why unsustainable consumption remains largely unquestioned among this group and contribute to debates about media and marketing standards. Also, further research documenting individuals' expectations of, and responses to, programmes which attempt to motivate pro-environmental behaviour values and practice is necessary to ensure that media influences on sustainable and unsustainable practices are simultaneously addressed.

The study has highlighted the relevance of socio-geographical context to participation in pro-environmental behaviours and the benefits of researching individuals as subject to multiple contexts. Exploring the motivations for the behaviour of different groups between school, work, home and leisure spaces could also prove fruitful in identifying causal mechanisms responsible for encouraging and enabling site-based response generalisation and, as a result of this, how to promote more consistent and value based behaviour.

The study also identified prominent lifestyle components relevant to teenagers' negotiation of pro-environmental behaviour: socio-demographic characteristics, consumption practices, values and how the environment was embodied into chosen or socially constructed youth identities. There is scope to explore and expand the relevance of these categories for other age groups and, indeed, other identity groups. Nationality, occupation, ethnicity and gender all provide suitable bases for exploring how lifestyles

are constructed by particular groups at particular times in particular places and the effects of these processes upon participation in pro-environmental behaviours.

All of these research suggestions are, of course, also relevant to the international aspect of this study, as local ideography impacts on the ways families, ESD programmes and media influence teenager's environmental perceptions and participation in pro-environmental behaviours. Questions remain, then, as to how other teenage populations within the EU and, indeed, other age groups understand and produce pro-environmental behaviours to identify both trends and causes of difference. Assessing differences between teenagers (among others) in these respects throughout the EU is especially important in relation to the EU's recent enlargements to 27 countries and the status of Croatia, Turkey and the Former Yugoslav Republic of Macedonia as candidate countries (European Commission 2007). EU expansion results in greater movement of citizens, including the school-leavers who seek employment in other member states. It is critical, therefore, that these individuals are equipped with pro-environmental behaviour knowledge and skills applicable to multiple contexts. It is further relevant that the EU contains member states with diverse political and economic histories e.g. state socialism. It would therefore be a useful exercise to broaden the parameters of investigation to include examples of different social legacies to assess what impact this may have on individuals' responses to sustainability.

Finally, these suggestions are important in a policy climate which continues to emphasise the pivotal role of children and teenagers in sustainable development. Uzzell (1999:1) describes how children are seen 'tomorrow's opinion leaders and stewards of the Earth' (also Meinhold and Malkus 2005) and Alan Johnson, the erstwhile UK Minister for Education, stated that 'in achieving sustainable development, children are

the key to changing society long term' (2007: no page). Research which more accurately reflects the complex constellation of influences and motivations determining teenagers' participation in pro-environmental behaviours will thus be better placed to provide the detailed and nuanced understandings necessary to promote sustainability literacy among them.

Bibliography

Abrahamson, M. (1983). Social Research Methods. Englewood Cliffs, NJ. Prentice Hall.

Adam, B. (1998). Timescapes of Modernity: The Environment and Invisible Hazards. London, Routeledge.

Agnew, J. (2005). "Sovereignty regimes: territoriality and state authority in contemporary world politics." Annals of the Association of American Geographers **95** (2): 437-461.

Aitken, S. (2001). "Global crises of childhood, rights, justice and the un-childlike child." Area **33**(2): 119-127.

Aldrich-Moodie, B. and Kwong., J. (1997). Environmental Education. London, IEA.

Aldridge, A. (1994). "The construction of rational consumption in 'Which' magazine: The more blobs the better." Sociology **28**(4): 899-912.

Allen, J., B. and Ferrand, J, L. (1999). "Environmental locus of control, sympathy and pro-environmental behaviour: a test of Geller's Actively Caring Hypothesis." Environment and Behaviour **31**(3): 338-353.

Amit-Talai, V. (1995). The 'multi' cultural youth, in: Amit-Talai, V. and Wulff, H. (Eds) Youth Cultures: a cross-cultural perspective London, Routledge 223-233.

Anable, J., Lane, B. and Kelay, T. (2006). An Evidence based Review of Public Attitudes to Climate Change and Transport Behaviour. London, Department of Transport.

Anderson, A. (1997). Media, Culture and the Environment. London, UCL Press.

Arcury, T. (1990). "Environmental attitudes and environmental knowledge." Human Organisation **49**: 300-304.

Azjen, I. and Fishbien, M. (1980). Understanding Attitudes and Predicting Social Behaviour, Englewood Cliffs, NJ: Prentice-Hall,Inc

Azjen, I. and Madden, T, J. (1986). "Prediction of goal directed behaviour: attitudes, intention and perceived behavioural control." Journal of Experimental Social Psychology **22**: 453-474.

Ballantyne, R., Connell, S. and Fien, J. (1998a). "Factors contributing to intergenerational communication regarding environmental programmes: preliminary research findings." Australian Journal of Environmental Education **14**: 1-10.

Ballantyne, R., Connell, S. and Fien, J. (1998b). "Students as catalysts for environmental change: a framework for researching intergenerational influence through environmental education." Environmental Education Research **4**(3): 285-298.

Ballantyne, R., Fien, J. and Packer, J. (2001). "School environmental education programme impacts upon student and family learning: a case study analysis." Environmental Education Research 7(1): 23-37.

Barr, S. (2000). Factors influencing household attitudes and behaviours towards waste management in Exeter, Devon. Geography. Exeter, University of Exeter.

Barr, S. (2002). Household Waste in Social Perspective: Values, Attitudes, Situation and Behaviour Aldershot, Ashgate.

Barr, S. (2003). "Strategies for sustainability: citizens and responsible behaviour." Area 35(3): 227-240.

Barr, S. (2004). Global Action Plan: rural environmentalism in Devon Annual Review of the Centre for Rural Research. Exeter, Centre for Rural Research, University of Exeter.

Bartels, G., C. and Nelissen, W. (2002). Marketing for Sustainability. Netherlands, IOS Press.

Baston, C., D. (1994). "Why act for the public good? Four answers." Personality and Social Psychology Bulletin 20: 603-610.

Bauman, Z. (1992). Intimations of Post Modernity. London, Routeledge.

Baxter, J. and Eyles, J. (1997) Evaluating qualitative research in social geography: establishing 'rigour' in interview analysis. Transactions of the Institute of British Geographers. Vol 22. pp 505-525

Beare, H. and Slaughter, R. (1993). Education for the Twenty-First Century. London, Routeledge.

Beck, U. (1992). Risk Society: Towards a new Modernity. London, sage.

Beck, U. and Beck-Gernstein, E. (2002). Individualization: Institutionalised Individualism and its Social and Political Consequences. London, Sage.

Beder, S. (1997). Global Spin: The Corporate Assault on Environmentalism. Melbourne, Scribe Publications.

Bedford, T. (1999). Ethical consumerism: everyday negotiations in the construction of an ethical self. Unpublished PhD: University of London.

Bedford, T (2002) Barriers and Motivators for Sustainable Lifestyles: an Exploratory Analysis. Unpublished report for the New Horizons Research Programme. Available from the Department for Transport."

Bedford, T. (2003) Select Committee on Environmental Audit Minutes of Evidence Memorandum submitted by Dr Tracey Bedford

Bedford, T. Jones, P. and Walker, H. (2002). "Select Committee on Environmental Audit Minutes of Evidence." 2006, from http://www.publications.parliament.uk/pa/cm200203/cmselect/cmenvaud/472/3022702.htm.

Bedford, T., Jones, P. and Walker, H. (2004). Every Little Bit Helps: Overcoming the Challenges to Researching, Promoting and Implementing Sustainable Lifestyles. London, University of Westminster: 1-33.

Beresford, B. (1997). Personal Accounts: Involving Disabled Children in Research London, Social Policy Research Unit.

Berg, B. (2007). Qualitative Research Methods for the Social Sciences. Boston, Pearson Education.

Bertstecher, H. (1974). Educating beyond violent futures. F. Hutchison. London, Routeledge: 36-54

Biel, A. (2004). From habitual to value guided environmental behaviour and back again. Driving Forces of and Barriers to Sustainable Consumption. Hubaek, K., Atushi, I. and Stagl, S. Leeds, University of Leeds. Proceedings of an International Workshop.

Bixler, R. and Morris., B. (1997). The role of 'outdoor capital' in the socialisation of wild land recreationalists. Proceedings of the 1997 North eastern Recreation Research Symposium. H. Vogelson. Bolton, NY, North-eastern Forest Experiment Station.

Black, J. S. (1985). "Personal and contextual influences on household energy adaptations." Journal of Applied Psychology 70: 3-21.

Blades, M. (1989). "Children's ability to learn about the environment from direct experience and spatial representations." Children's Environment Quarterly 6(2-3): 4-14.

Blake J (1999). "Overcoming the 'value-action gap' in environmental policy: tensions between national policy and local experience." Local Environment 4(3): 257-278.

Blowers, A. (1993). Planning for a Sustainable Environment: A report by the Town and Country Planning Association. London, Earthscan.

Blowers, A. and Glasbergen, P. (1995). The search for sustainable development. Environmental Policy in an International Context: Perspectives. Glasbergen, P. and Blowers, A. London, Arnold: 163-183.

Blumer, H. (1969). Symbolic Interactionism. Englewood Cliffs NJ, Prentice Hall.

Boehmer-Christiansen, S. and Skea, S. (1991). Acid Politics: Environmental and Energy Policies in Britain and Germany. New York, Bellhaven Press.

Bognor, F, X. (2000). "Environmental perception of Italian and some European non-Mediterranean pupil populations." Fresenius Environmental Bulletin 9(9-10): 570-581.

Bognor, F, X. and Wiseman, M. (2002). "Environmental perception of French and some western European secondary school students." European Journal of Psychology of Education XVII(1): 3-18.

Booth, A. (1998). "Caring for nature 101, or alternative perspectives on educating natural resource managers and ecologically conscious citizens." Journal of Environmental Education 29(3): 4-9.

Borden, R., J. and Schettino, A, P. (1979). "Determinants of environmentally responsible behaviour." Journal of Environmental Education 10: 35-39.

Börzel, T. (2000a). Improving compliance through domestic mobilisation? New instruments and effectiveness of implementation in Spain. Implementing EU Environmental Policy: New Directions and Old Problems. Knill, C,L,A. Manchester, Manchester University Press: 122-151.

Börzel, T. (2000b). "Why there is no 'southern problem'. On environmental leaders and laggards in the European Union." Journal of European Public Policy 7(1): 141-62.

Börzel, T. (2003). Environmental Leaders and Laggards in Europe: Why there is (not) a Southern Problem. Aldershot, Ashgate.

Boulding, E. (1988). Building a Global Civic Culture: Education for an Interdependent World. Malmo Sweden, Department of Educational and Psychological Research Lund University.

Bourdieu, P. (1971). Outline of the Theory of Practice. Cambridge, Cambridge University Press.

Bourdieu, P. (1990). The Logic of Practice. Stanford CA, Stanford University Press.

Bowers, C, A. (1995). Educating for an Ecologically Sustainable Future: Rethinking Moral Education, Creativity, Intelligence and other Modern Orthodoxies. Albany, NY, State University of New York Press.

Bowers, C, A. (2001). "How language limits our understanding of environmental education." Environmental Education Research 7(2): 141-151.

Boyce, J. (2002). "The political economy of the environment." Environmental and Resource Economics 23(4): 482-485.

Breiting, S. (2000). Sustainable development, environmental education and action competence. Critical Environmental and Health Education: Research Issues and Challenges. B. Jensen, Schnack, K. and Simovska, V. Copenhagen, The Danish University of Education.151-165

Brook Lyndhurst and MORI (2002). Household Waste Behaviour in London. London, Resource Recovery Forum.

Bryant, C. and Hungerford, H. (1977). "An analysis of strategies for teaching environmental concepts and values clarification in kindergarten." Journal of Environmental Education 9: 44-49.

Bryman, A. (1995). Quantity and Quality in Social Research. London, Routeledge.

Bunge, W. (1973). "W.W. Bunge, The geography." The Professional Geographer 25(4): 331-337.

Burgess, J. (1990). "The production and consumption of environmental meanings in the mass media: a research agenda for the 1990's." Transactions of the Institute of British Geographers 15: 139-162.

Burgess, J. (1999). Environmental knowledges and environmentalism. Introducing Human Geographies. P. C. Cloke, P, and Goodwin, M. London, Arnold.141-150

Burgess, J., Honsen, K. and Bedford, T. (2003). Unsustainable Consumption. London, The Environment and Society Research Unit.

Burgess J, Harrisson, C. and Filius, P. (1998). "Environmental communication and the cultural politics of environmental citizenship." Environment and Planning A 30: 1445-1460.

Burke, P. (1980). "The self: measurement requirements from an interactionist perspective." Social Psychology Quarterly 43(1): 18-29.

Burke, P. and Reitzes., D. (1981). "The link between identity and role performance." Social Psychology Quarterly 44(2): 83-92.

Bürklin,W, P. (1985). The greens: ecology and the new left. West German Politics in the Mid-Eighties. Wallach, P,H, G. New York, Praeger: 187-218.

Burningham, K. and O'Brien, N. (2001). Rainforests are a long way from here: the environmental concerns of disadvantaged groups, Joseph Rowntree Foundation.

Burr, V. (1995). An Introduction to Social Constructivism. London, Routeledge.

Burton, R. and Wilson, G. (2006). "Injecting social psychology into conceptualisations of agricultural agency: towards a post-productivist farmer self-identity?" Journal of Rural Studies 22 (1) 95-115

Buttel, F, H. (1987). "New directions in environmental psychology." Annual Review of Psychology 13: 465-488.

Buttel, F. and Finn, H. (1978). "Social class and mass environmental beliefs: a reconsideration." Environment and Behaviour 10: 433-450.

Calvo, S., Gutierrez, J., and Benayas, J. (1998). Social and political context of the Spanish educational system. Environmental Education in the 21st Century: Theory, Practice, Progress and Promise. Palmer, J. London, Routeledge: 208-213.

Carson, R. (1962). Silent Spring. London, Penguin.

Castree, N. (2006). "From neo-liberalism to neo-liberalism: consolations, confusions, and necessary illusions." Environmental and Planning A **38**: 1-6.

Cattanach, L. (2007). Teach Yourself Green Parenting London, Hodder and Stoughton.

Catton, W., R. and Dunlap, R, E. (1978). "Environmental Sociology; A new paradigm." American Sociologist **13**: 41-49.

CASA (2006) Andalusia: an Overview. Retrieved on 23/02, 2006 from http://www.1casa.com/Andalucia_Overview.asp.

CDEJ. (1999). "Youth Policy in Spain." Retrieved 12/07, 2006, from http://www.coe.int/t/e/cultural_co-operation/youth/YP_spain.pdf.

Chan, K. (1998). "Mass communication and pro-environmental behaviour: waste recycling in Hong Kong." Journal of Environmental Management **52**: 317-325.

Chaney, D. (1996). Lifestyles. London, Routeledge.

Chawla, L. (1988). "Children's concern for the natural environment." Children's Environment Quarterly **5**: 13-20.

Chawla, L. (1998b). "Research methods to investigate significant life experiences: review and recommendations." Environmental Education Research **4**(4): 383-397.

Chawla, L. (1999). "Life paths into effective environmental action." The Journal of Environmental Education **31**(1): 15-26.

Chawla L (1998a). "Significant Life Experiences Revisited: a review of research on sources of environmental sensitivity." Environmental Education Research **4**(4): 369-382.

Childress, R, B. and Wert, J. (1976). "Challenges for environmental education planers." Journal of Environmental Education **7**(4): 2-6.

Christensen, P. and James, A. (2000). Research with Children. London Falmer Press.

CIA. (2003). "The World Fact Book 2002, Spain." Retrieved 12/12, 2004, from www.cia.gov/publications/factbook/geos/sp.html.

Clammer, J. (1997). Contemporary Urban Japan: A Sociology of Consumption. Oxford, Blackwell Publishers.

Clover, D. (2002). "Traversing the Gap: concientizacion, educative-activism in environmental adult education." Environmental Education Research **8**(3): 315-323.

Connell, S., Fien, J., Lee, J., Sykes, H. and Yencken, D, (1998). "If it doesn't really affect you, you don't think about it". A qualitative study of young people's attitudes in two Australian cities." Environmental Education Research **4**(3): 95-113.

Cornell, J. (1998). Sharing Nature with Children. Nevada City Canada, DAWN Publications.

Courtney- Hall, P. and Rogers, L. (2002). "Gaps in mind: problems in environmental knowledge- behaviour modelling research." Environmental Education Research 8(3): 283-298.

Cowe, R. and William, S. (2001). Who are the Ethical Consumers? MORI, NEF and the Future Foundation of the Co-operative Bank.

CSD (Commission for Sustainable Development) (1997). Earth Summit +5 Special Session of the General Assembly to Review and Appraise the Implementation of Agenda 21, New York.

Daemen, T, J. (2003). "The European Community's Evolving Precautionary Principle - Comparisons with the United States and Ramifications for Doha Round Trade Negotiations." The Environmental Law Review January.

Dahlstrand, U. and Biel, A. (1997). "Pro-environmental habits: propensity levels in behavioural change." Journal of Applied Social Psychology **27**: 588-601.

Dalton, R. (1994). The Green Rainbow: Environmental Groups in Western Europe. New Haven, Yale University Press.

Darbyshire, P., MacDougall, C. and Schiller, W. (2005). "Multiple methods in qualitative research with children: more insight or just more?" Qualitative Research 5(4): 417-316.

Darnton, A. (2004a). The Impact of Sustainable Development on Public Behaviour: Report 1 of Desk Research commissioned by COI on behalf of DEFRA.

Darnton, A. (2004b). "Driving Behaviours for Sustainable Lifestyles: Report 2 commissioned by COI on behalf of DEFRA."

DCSF (Department for Children, Schools and Families (2006) Sustainable Schools Strategy. Retrieved on 26/02, 2008 from http://www.teachernet.gov.uk/sustainableschools/

de Bruyn, S, M. and Heintz, R, J. (1999). The environmental Kuznets curve hypothesis. Handbook of Environmental and Resource Economics. van den Bergh, J. Cheltenham, Edward Edgar: 656–677.

De Young, R. (1986). "Some psychological aspects of recycling." Environment and Behaviour **18**(4): 435-449.

De Young, R. (1988-1999). "Exploring the difference between recyclers and non-recyclers: the role of information." Journal of Environmental Systems **18**(4): 341-351.

De Young, R. (1990). Recycling as appropriate behaviour: a review of survey data from selected recycling education programmes in Michigan. Michigan, Resources, Conservation Recycling: 253-266.

De Young, R. (1993). "Changing behaviour and making it stick: The conceptualisation and management of conservation behaviour." Environment and Behaviour **25**: 185-205.

De Young, R. (1996). "Some psychological aspects of reduced consumption behaviour. The role of intrinsic motivation and competence motivation." Environment and Behaviour **28**: 358-409.

De Young, R. (2000). "Expanding and evaluating motives for environmentally responsible behaviour." Journal of Social Issues **56**(3): 509-526.

Defra. (2001). "Education for sustainable development: Learning to create quality of life." 4th Annual report of the Sustainable Education Panel. Retrieved November, 2004, from http://www.defra.gov.uk/environment/sustainable/educpanel/2001ar/.

Defra. (2005a). "Changing Behaviour through Policy Making." Retrieved 12/12, 2007, from www.sustainable-development.gov.uk/what/priority/paf/change-behaviour-model.pdf.

Defra (2005b). The Sustainable Development Strategy. Defra, TSO: 24.

Derfa (2007) Survey of Public Attitudes and Behaviours Towards the Environment. Available from http://www.defra.gov.uk/environment/statistics/pubatt/download/pubattsum2007.pdf

Defra/ONS (2002). Survey of Public Attitudes to Quality of Life and to the Environment.

Dekker, P. and van der Broek, A. (1998). "Civil society in comparative perspective: involvement in voluntary associations in North America and Europe." Voluntas: International Journal of Voluntary and Nonprofits Organizations **9**: 11-38.

Denzin, N, K. (1978). The Research Act (5th Edition). New York, McGraw Hill.

Denzin, N, K. and Lincoln, Y, S. (Eds) The Sage Handbook of Qualitative Research.Sage: London

Derksen, I. and Gartell, J.(1993). "The social context of recycling." American Sociological Review **58**: 434-42.

Desforges, L. (1998). 'Checking out the planet'. Global representations / local identities and youth travel. Cool Places: Geographies of Youth Cultures. Skelton, T. and Valentine, G. London and New York, Routeledge: 175-192.

Devine-Wright, P., Devine-Wright, H. and Fleming, P. (2004). "Situational influences upon children's beliefs about global warming and energy." Environmental Education Research **10**(4): 493-506.

Devon County Council (DCC) (2006). "Statistics: Economic Activity." Retrieved 19/10, 2006, from http://www.devon.gov.uk/index/democracycommunities/improving_our_services/facts_figures_and_statistics/census_2001.htm.

Dfes (2002) "Professional Standards for Qualified Teacher Status and Requirements for Initial Teacher Training" Retrieved on 26/02, 2008 from http://rexs.ucsm.ac.uk/pgce/docs/qtsstandards.pdf

DfES (2003). Sustainable Development action plan for Education and Skills. London.

DfES (2005/6). Learning for the Future: The DfES Sustainable Development Action Plan 2005/6. DfES.

Diani, M. and Lodi, G. (1988). Three in one: currents in the Milan ecology movement. International Social Movement Research: Vol.1. From Structure to Action. Comparing Social Movements Research across Cultures. Klandermans, B. Kreisi, H. and Tarrow, S. Greenwich, CT, Jai Press: 103-124.

Dobson, A. (1998). Justice and the Environment. Oxford, Oxford University Press.

Dryzek, J. (2005). The Politic of the Earth: Environmental Discourses. Oxford, Oxford University Press.

Dunant, S. and Porter, R. (1996). The Age of Anxiety. London, Virago.

Dunlap, R., E. (1980). "Paradigmatic changes in the social sciences: fro human exemptions to an ecological paradigm." American Behavioural Scientist **24**(1): 5-14.

Dunlap, R., E. and Van Liere, K, D. (1978b). "The new environmental paradigm: a proposed measuring instrument and preliminary results." Journal of Environmental Education **9**: 9-19.

Dunlap, R, E., Gallup, J, R. and Gallup, A, M. (1993). "Of global concern: results of the health of the planet survey." Environment **35**(9): 7-39.

Dwyer F (1995). "Children's environmental attitude and knowledge scale: construction and validation." Journal of Environmental Education **(26)**: 3.

Dwyer W, O., Leeming, F, C., Cobern, M, K., Porter, B, E. and Jackson, J, M. (1993). "Critical review of behavioural interventions to preserve the environment: research since 1980." Environment and Behaviour **25**: 275-321.

Earl, P, E. (1990). "Economics and psychology; a survey." The Economic Journal **100**: 718-755.

EAUC (Environmental Association of Universities and Colleges) (2008). "Introduction: who we are." Retrieved 16/02, 2008, from http://www.eauc.org.uk/who_we_are.

Eckersley, R. (1992). Environmentalism and Political Theory: Towards an Ecocentric Approach. Albany, NY, State University of New York Press.

Eden, S. (1993). "Individual environmental responsibility and its role in public environmentalism." Environment and Planning A **25**: 1743-1758.

Eden, S. (1996). "Public participation in environmental policy: counter scientific and non-scientific contributions." Public Understanding of Science **5**: 183-203.

Eden, S. (1998). "Environmental issues: knowledge, uncertainty and the environment." Progress in Human Geography **22**(3): 425-432.

Eden, S. (2001). "Environmental Issues: nature versus the environment?" Progress in Geography **25**(1): 79-85.

Ehrlich, P. (1971). The Population Bomb. New York, Ballentine Books.

Einsberg, N. and Miller, P. (1987). "The relation of empathy to pro-social and related behaviours." Psychological Bulletin **101**: 91-119.

Elias, N. (1994). The Civilising Process. Oxford, Basil Blackwell.

Elwood, S. and. Martin, D. (2000). "Placing interviews: locations and scales of power in qualitative research." Professional Geographer **52**: 649–657.

ENCAMS (2001). Segmentation Research on Public Littering Behaviour. from http://www.encams.org/publications/main.asp?cat=5

ENCAMS (2002). Waste Segmentation Research. from http://www.encams.org/views/main.asp?pageid=266&sub=32

ENCAMS (2003). Youth Litter Segmentation Research. from http://www.encams.org/publications/main.asp?cat=5

Envision (2004). House of Commons Environmental Audit Written Evidence Envision.

Ernst, A, M., Bayden, U, J. and Spada, H. (1992). Informationssuche und-verarbeitung zur entsceidungsfindung bei einem okologischen problem [search for and processing of nformation in decision making about an ecological problem]. Umwelt und Verhalten: Perspektiven und Ergebnisse okopsychologischer Forschung. Pawlik, H, S. Bern, K,H. Switzerland, Huber: 107-127.

Eurobarometer (1999). What do Europeans think about the environment? Luxenbourg, European Commission.

Eurobarometer (2002). The Attitudes of Europeans towards the Environment, European Opinion Research Group. European Commission.

Eurobarometer (2005). The attitudes of citizens towards the environment, European Commission.

Eurobarometer (2008) The attitudes of EU citizens towards the environment. European Commission

Europa. (2002). "Executive Summary of the Sixth Community Environment Action Programme." Retrieved 13/09, 2005, from www.europa.eu.int/comm/environment/newprg/pdf/6eap_xsum_en.pdf.

Europa. (2007). "European Countries." Retrieved 17/12, 2007, from http://europa.eu/abouteuropa/index_en.htm.

European Commission (1973-1976). First Environmental Action Programme, OJ 1973 C112.

European Commission (1993) The Fifth Environmental Action Plan. Retrieved 26/02, 2008 from http://ec.europa.eu/environment/env-act5/5eap.pdf

European Commission. (2000). Global Assessment Europe's Environment: What Directions for the Future? Spain, European Communities

European Commission (2002). Choices for a Greener Future: The European Union and the Environment. Belgium, EC.

European Commission (2007). "Enlargement Strategy and Progress Reports." Retrieved 23/01, 2008, from http://ec.europa.eu/enlargement/key_documents/reports_nov_2007_en.htm.

Eurydice. (2000). "Summary Sheets on Education Systems in Europe." Retrieved 12/12, 2004, from www.eurydice.org.

Evans, K. (2002). "Taking control of their lives? Agency in young adult transitions in England and in the new Germany." Journal of Youth Studies 5(3): 245-269.

Evans, S, M., Gill, M, E. and Marchant,J. (1996). "Schoolchildren as educators; the indirect influence of environmental education on parent's attitudes towards the environment." Journal of Biological Education 30(4): 234-248.

Featherstone, M. (1991). Consumer Culture and Postmodernism. London, Sage.

Festinger, L. (1957). Theory of Cognitive Dissonance Stanford, CA, Stanford University Press.

Fielding, N, G. and Fielding, J, L. (1986). Linking Data. Newbury Park, CA. , Sage.

Fielding, N. and Schreier, M. (2001). "On the qualitative and quantitative research methods." Retrieved 01, 2004, from www.qualitativeresearch.net/fqs/fqs-eng-htm.

Fien, J. (1993). Education for the Environment. Critical Curriculum Theorising and Environmental Education. Geelong, Victoria, Deakin University Press.

Fien, J. (2002). "Teaching and Learning for a Sustainable Future." Retrieved 0105, 2006, from http://www.unesco.org/education/tlsf/theme_a/mod05/uncom05bod.htm.

Fien, J., Bentley, M. and Neil, C. (2000). "Young people as agents of change: the youth and sustainable consumption project." from www.iypf.org/Downloads/APRTSCP-Fien-et-al.pdf.

Fien, J. and Skoien, P. (2001). Towards sustainable consumption amongst Australian young people. In, Youth, Sustainable Consumption Patterns and Lifestyles, MOST: 49-72.

Fietkau, H. and Kessel, H. (1981). Umweltlernen: Veraenderungsmoeglichkeiten des Umweltbewusstseins. Modell-Erfahrungen. Hain, Koenigstein.

Fishbein, M. and Azjen, I. (1975). Belief, Attitude, Intention, and Behaviour: an introduction to theory and research. Reading, MA, Addison-Wesley.

Fliegenscnee, M. and Schelakovsky, M. (1998). Umweltpsychologie und Umweltbildung:eine Einfurung aus humanokologisher Sicht. Facultas Univesitats Verlang, Wein.

Foppa, K. (1989). "Grundlagen einer ipsativen Theorie des Handelns [Fundamentals of the Ipsative theory of action] " Unpublished manuscript Institute of Psychology(University of Bearne).

Fontana, A. and Frey, J, H. (2005) The interview: from neutral stance to political involvement in Denzin, N, K. and Lincoln, Y, S. (Eds) The Sage Handbook of Qualitative Research pp695-728

Frey, B, S. (1989). "Ipsative and objective limits to human behaviour." Journal of Behavioural Economics **17**: 229-248.

Froggatt, L. and Chamberlayne, P. (2004). "Narratives of social enterprise: form biography to practice and policy critique." Qualitative Social Work 3(1): 61-77.

Fuhrer, U., Kaiser, F, G., Seiler, J. and Maggi, M. (1995). From social representations to environmental concern; the influence of face to face versus mediated communications. Oekologisches Handeln als sozialer Prozess. U. Fuhrer. Basel, Birkhaeuser.

Furman, A. and Erdur, O. (1999). "Are good citizens environmentalists?" Human Ecology **27**(1): 181-188.

GA (Geographical Association) (2003). Response from the ESD working group of the Geographical Association to the TTA consultation on the scope for ESD within initial teacher education. London, GA.

GA (Geographical Association) (2004). Education For Sustainable Development (ESD) A Needs Analysis of School Teachers Executive Summary. London, GA.

GA. (Geographical Association) (2007). "GTIP Think Piece: Education for Sustainable Development." Retrieved 2007, 24/10, from http://www.geography.org.uk/projects/gtip/thinkpieces/esd.

GA/RGS-IBG. (2006). "Action Plan for Geography." Retrieved 16/02, 2008, from http://www.geographyteachingtoday.org.uk/what-is-geography/about-the-action-plan-for-geography/.

Gamba, R., J. and Oskamp, S. (1994). "Factors influencing community residents participation in commingled curb side recycling programs." Environment and Behaviour 6(5): 587-612.

Gambro, J., S. and Switzky, H. (1992). Locus of control as a motivational determinant of environmental knowledge at high school, ERIC Document Reproduction Services No. ED 379 163.

Gambro, J., S. and Switzky, H. (1994). A national survey of environmental knowledge in high school students: levels of knowledge and related variable students, ERIC Document Reproduction Service No. ED 379 164.

Gambro, J., S. and Switzky, H. (1999). "Variables associated with American high school students knowledge of environmental issues related to energy and pollution." The Journal of Environmental Education 30(2): 15-22.

Gardner, G. and Stern, P. (2002). Environmental Problems and Human Behaviour (2nd Edition). Boston, MA. , Pearson.

Garzon, A. and Seoane, J. (1991). "Estructura del espacio de creencias." Boletin de Psicologia 32(3): 73-91.

Gatersleben B, and Uzzell, D. (2003). "Local Transport Problems and Possible Solutions." Local Environment 8(4).

Gatersleben, B. and Vlek, C. (1998). Household consumption, quality of life and environmental impacts: a psychological perspective and empirical study. Green Households? Domestic Consumers, Environment and Sustainability. Noorman K J., Schoot Uiterkamp, A, J, M. London, Earthscan Publications: 141-183.

Geller, E, S. (1995). "Actively caring for the environment: An integration of behaviourism and humanism." Environment and Behaviour 27(4): 184-195.

Giddens, A. (1984). The Constitution of Society. Cambridge, Polity Press.

Giddens, A. (1991). Modernity and Self Identity. Self and Society in the Late Modern Age. Cambridge, Polity.

Giddens, A. (1994). Beyond Left and Right. Cambridge, Polity.

Gigliotti, L., M. (1992). "Environmental attitudes: twenty years of change." Journal of Environmental Education 24(1): 15-26.

Gigliotti, L., M. (1994). "Environmental issues: Cornell students' willingness to take action." The Journal of Environmental Education 25(1): 34-42.

Glaser, B. and Strauss, A. (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research. Chicago, Aldine.

Gonzalez-Guadiano, E. (2001). "Complenity in environmental education." Educational Philosophy and Theory 33(2): 153-166.

Gooch, G., D. (1995). "Environmental beliefs and attitudes in Sweden and The Baltic States." Environment and Behaviour **27**(4): 513-539.

Gray, D, B. (1985). Ecological Beliefs and Behaviours; Assessment and Change. Greenwood, Westport.

Greene, S., M. and Hill, M. (2005). Researching children's experiences: methods and methodological issues. Researching Children's Experiences: Approaches and Methods. Greene, M. and Hogan, D, M. London, Sage. 1-21

Greenall, A. (1981). An introduction to environmental education. Environmental Education: A Source Book of Primary Education. CDS. Canberra, Curriculum Development Centre.

Greenall Gough, A. and Robottom, I. (1993). "Towards a socially critical environmental education: water quality studies in a coastal school." Journal of Curriculum Studies **23**(4): 301-316.

Griffin, C. (1993). Representations of youth: the study of youth and adolescence in Britain and America. Oxford, Polity Press..

Grob, A. (1991). Meinung, Verhalten, Umwelt. Bern, Peter Lang Verlag.

Grove-White, R. (1995). "Environment and society: some reflections." Environmental Politics 4(4): 265-275.

Gruenewald, D., A. (2004). "A Foucouldian analysis of environmental education: towards the socio-ecological challenge of the Earth Charter." Curriculum Inquiry **34**(1): 71-107.

Guagnago, G., A. (1995). "Locus of control, altruism and agentic disposition." Population and Environment: A Journal of Interdisciplinary Studies **17**(1): 63-77.

Guagnago, G, A., Stern, P, C. and Dietz, T. (1995). "Influences on attitude - behaviour relationships. A natural experiment with kerbside recycling." Environment and Behaviour **27**: 699-718.

Gunderson, K., I. (1989). The state of environmental education in Montana public schools K-6., University of Montana.

Gurevitz, R. (1997). "Understanding Children's Worlds." Retrieved 12/03, 2003, from www.sussex.ac.uk/units/geo/pubs/briefing/sbrief2.pdf.

Halpern, D., Bates, C., Mulgan, G., Aldridge, S., Beales, G. and Heathfield, A. (2003). Personal Responsibility and Behavioural Change, The Cabinet Office Strategy Unit.

Hamer, J. E. (no date). "The Arhus Convention." Retrieved 12/09, 2005, from www.eel/nl/documents/arhus.pdf.

Hammond, M and Collins, R. (1993). One World - One Earth. Vermont, Capitol City Press.

Hansen, A. (1993). The Mass Media and Environmental Issues. Leicester, Leicester University Press

Harden, J. Scott, S., Backett-Milburn, K. and Jackson, S. (2002). "Can't talk, won't talk?: Methodological Issues in Researching Children." Sociological Research Online 5(2).

Hardin, G. (1968). "The tragedy of the commons." Science **162**: 1243-1248.

Harrison, C., M., Burgess, J. and Filius, P. (1996). "Rationalizing environmental responsibilities: a comparison of lay publics in the UK and the Netherlands." Global Environmental Change **6**: 215-34.

Harrison, C. and Davies, G. (1998). "Lifestyles and the Environment." Retrieved 16/07, 2003, from www.sussex.ac.uk/Units/gec/pubs/reps/dslifest.htm.

Hart, R. (1997). Children's Participation: The theory and practice of involving young citizens in community development and environmental care. London, UNICEF Earthscan.

Hawthorne M, and Alabaster. T. (1999). "Citizen 2000: development of a model of environmental citizenship." Global Environmental Change **9**: 25-43.

Heberlein, T., A. and Black, J, S. (1976). "Attitudinal specifity and the prediction of behaviour in a field setting." Journal of Personality and Social Psychology **33**: 474-479.

Herbert, S. (2000). "For Ethnography." Progress in Human Geography **24**: 550-568.

Herrera, M. (1992). "Environmentalism and political participation: towards a new system of social beliefs and values?" Journal of Applied Social Psychology **22**(8): 657-676.

Hicks, D. (1994). Introduction. Preparing for the Future: Notes and Queries for Concerned Educators. D. Hicks. London, Adamantine in association with Worldwide Fund for Nature.

Hicks, D. (1996). "Envisioning the Future: the challenge for environmental educators." Environmental Education Research **2**(1): 101-108.

Hicks, D. and Bord., A. (1994). "Visions for the future: student responses for ecological living." Westminster Studies in Education **17**: 45-55

Hicks, D. and Bord, A. (2001). "Learning about global issues: why most educators only make things worse." Environmental Education Research **7**(4): 413-425.

Hicks, D. and Holden., C. (1995). "Exploring the future: a missing dimension in environmental education." Environmental Education Research **1**(2): 185-194.

Hill, M. (2006). "Children's voices on ways of having a voice: children's and young people's perspectives on methods used in research and consultation." Childhood **13**(1): 69-89.

Hines, J, M., Hungerford, H, R. and Tomera, A. N. (1986-7). "Analysis and synthesis of research on responsible pro-environmental behaviour: a meta analysis." The Journal of Environmental Education **18**(2): 1-8.

Hobson, K. (2001). Sustainable lifestyles: rethinking barriers and behavioural change. Exploring Sustainable Consumption: Environmental Policy and the Social Sciences. Cohen, M, J. and Murphy, J. Oxford, Pergamon: 191-209.

Hobson, K. (2002). "Competing discourses of sustainable consumption: does the 'rationalisation of lifestyles' make sense?" Environmental Politics **11**(2): 95-120.

Hobson, K. (2006). "Environmental psychology and the geographies o ethical and sustainable consumption: aligning, triangulating, challenging?" Area **38**(3): 292-300.

Hobson K (1999). Sustainable Lifestyles: Rethinking Barriers and Behavioural Change. London, Environment and Society Research Unit, UCL.

Hodgson, J. and Dyer, A. (2003). Let Your Children go back to Nature. Milverton, Somerset, Capall Bann Publishing.

Hofstede, G. (1992). Cultural Consequences. New York, Sage Publications.

Hogan, K. (2002). "A socio-cultural analysis of school and community settings as sites for developing environmental practitioners." Environmental Education Research **8**(4): 413-437.

Hogg, M. V., G. (2002). Social Psychology. London, Prentice Hall.

Holdsworth, M. (2003). "Green Choice What Choice? summary of NCC research into consumer attitudes to sustainable consumption." Retrieved November, 2004, from http://www.ncc.org.uk/responsibleconsumption/green_choice.pdf.

Holloway, S, L. and Valentine, G. (2000). "Spatiality and the new social studies of childhood." Sociology **34**(4): 763-783.

Holstein, J. and Gubruim, J. (1997). Active interviewing. Qualitative Research: Theory, Method and Practice D. Silverman. London, Sage: 113-129.

Holt, L. (2004). "The 'voices' of children: de-centering empowering research relations." Children's Geographies **2**(1): 13-27.

Hopkin, J. (2002). Comparitive Methods. Theory and Methods in Political Science. D. S. Marsh, G. Basingstoke, Political Analysis: 249-267.

Hopkins, K. (2005). "Family comunication: a catalyst for socially desired behaviours." PRism **3**(2): 1-14.

Hopper, J, R. and Nielson, J, M. (1991). "Recycling as altruistic behaviour: normative and behviouralist strategies to expand participation in a commmunity recycling program." Environment and Behavior **23**(2): 195-220.

Huckle, J. (1991). "Education for sustainability: assessing pathways for the future." Australian Journal of Environmental Education **7**: 43-62.

Huckle, J. (2006a). Education for Sustainable Development A briefing paper for the Training and Development Agency for Schools

Huckle, J. (2006b). Towards and ESD indicator for the UK, Bath Royal Literary and Scientific Institute.

Hungerford, H, R. and Volk, T, L. (1990). "Changing learner behaviour through environmental education." Journal of Environmental Education **21**(3): 8-21.

Hunter, L, M., Hatch, A. and Johnson, A. (2004). "Cross-national gender variation in environmental behaviours." Social Science Quarterly **85**: 677-694.

Hutchinson, F. (1996). "Our children's futures: are there lessons for environmental educators?" Environmental Education Research 3(2): 189-201.

Hutchinson, F., Talnot, C. and Brown, L. (1992). Our Planet and Its People. Melbourne, Macmillan.

Hutchison, D. (1998). Growing up Green: Education for Ecological Renewal. London, Teachers College Press.

Hutt, M. and Speh, T. (2001). Business Marketing Management – A Strategic View of Industrial and Organisational Markets" Oxford, Harcourt College Publishers.

Hyun, E. (2005). "How is young children's intellectual culture of percieving nature different fromadults." Environmental Education Research **11**(2): 199-214.

IEEP (International Environmental Education Programme). (1975). "The Belgrade Charter." Retrieved 8/8, 2005, from http://portal.unesco.org/education/en/file_download.php/47f146a292d047189d9b3ea7651a2b98The+Belgrade+Charter.pdf.

Inglehart, R. (1977). The Silent Revolution: Changing Values and Political Styles among Western publics. Princeton, Princeton University Press.

Inglehart, R. (1990). Cultural Shift in Advanced Industrial Society. Princeton, Princeton University Press.

Iozzi, L, A. (1989). "What research says to the educator." Journal of Environmental Education **20**: 3-9.

IUCN (The World Conservation Union) (1970). International Working Meeting on Environmental Education in the School Curriculum, Final Report, USA, International Union for the Conservation of Nature and Natural Resources.

IUCN (The World Conservation Union), UNEP (United Nations Environment Programme) and WWF (World Wildlife Fund) (1980). The World Conversation Strategy. New York.

Jackson, T. (2005). Motivating Sustainable Consumption. Guildford, Sustainable Development Research Network (Briefing One).

Jackson, T., Hubacek, K., Inaba, A. and Stagl, S. (2004). Consuming paradise? Unsustainable consumption in cultural and social-psychological context. Driving Forces of and Barriers to Sustainable Consumption, Leeds.

Jacobs, M. (1997). The quality of life: social goods and the new politics of consumption. Greening the Millennium? The New Politics of the Environment. M. Jacobs. Oxford, Balckwell Publishers: 47-61.

James, A. Jenks, C. and Prout, A. (1998). Theorizing Childhood. Cambridge, Polity Press.

James, K. (1993). A qualitative study of factors influencing racial diversity in environmental education, University of Minnesota.

Jeffers, J. (1995). Opening remarks at the environmental maze seminar of the North East Environmental Network. Environmental Maze, Newcastle upon Tyne.

Jensen, B, B. (2002). "Knowledge, action and pro-environmental behaviour." Environmental Education Research 8(3): 325-333.

Jensen, B. and Schnack, K. (1997). "The action competence approach in envornnmental education." Environmental Education Research 3(2): 163-178.

Jeronen, E. (2002). "Thoughts of childrena nd adults about the environment and environmental education." International Research in Geographical and Environmental Education 11(4): 341-353.

Jimenez, M. (1999). "Ten Years of Environmental Protests in Spain: issues, actors and arenas." Retrieved 4/08, 2005, from www.essex.ac.uk/ecpr/events/jointsessioons/paperarchive/mannheim/w12/jimenez.pdf.

Johnson, A. (2007). Radio 2 News Programme. 02/02/07.

Jones, R, E. (1991). "Understanding paper recycling in an institutionally supportive setting; an application of the Theory of Reasoned Action." Journal of Environmental Systems 19(3): 307-321.

Jones, R, E. and Dunlap, R,E. (1992). "The social bases for environmental concern: have they changed over time?" Rural Sociology 57: 28-47.

Jones, V. (2003). Young People and the Circulation of Academic Knowledges. Department of Geography. Aberystwyth, Aberystwyth.

Junta de Andalusia. (2004). Estadisticas Retrieved 9/09, 2005, from www.juntadeandalucia.es/institutodeestadistica/padron/revpad/htm.

Junta de Andalucia (2001). Estrategia Andaluza de Educación Ambiental. Consejeria de Medio Ambiente. Junta de Andalucía: no page.

Jurin, R. R. and Fortner, R, W. (2002). "Symbolic beliefs as barriers to responsible environmental behaviour." Environmental Education Research 8(4): 373-393.

Kaiser, F., G. and Fuhrer, U. (2003). "Ecological behaviour's dependency on different forms of knowledge." Applied Psychology: An International Review 52(4): 598-613.

Kaiser, F, G., Wolfing, S. and Fuhrer, U. (1999). "Environmental attitude and ecological behaviour." Journal of Environmental Psychology 19: 1-19.

Kanagy, C., Humphrey, C. and Firebaugh, C. (1994). "Surging environmentalism: changing opinion or changing publics?" Social Science Quarterly 75(4): 804-819.

Kantola, S, J., Syme, G, J. and Campbell, N, A. (1982). "The role of individual difference and external variables in a test of the sufficiency of Fishbein's model to explain behavioural intention to conserve water." Journal of Applied Social Psychology 12(1): 70-83.

Kempton, W., Boster, J, S. and Hartley, J, A. (1995). Environmental Values in America Culture. Cambridge, MA, MIT Press.

Kilbourne, W, E., Beckmann, S, C., Lewis, A. and Dam Van, Y. (2001). "A multinational examination of the role of the dominant social paradigm in environmental attitudes of university students." Environment and Behaviour 33(2): 209-228.

Kinsey, T, G. and Wheatley, J, H. (1980). "An instrument to inventory the defensibility of environmental attitudes." Journal of Environmental Education 12: 29-35.

Klineberg, S. Mckeever, M. and Rothernbach, B. (1998). "Demographic predictors of environmental concern; it does make a difference how it's measured." Social Science Quarterly 79(4): 734-753.

Knafl, K, A. and Breitmayer, B, J. (1989). Triangulation in qualitative research: Issues of conception, clarity and purpose. Qualitative Nursing Research: A Contemporary Dialogue. J. Morse, M. Rockville, M,D., Aspen.

Kolmuss, A. and Agyeman, J. (2002). "Mind the gap: why do people act environmentally and what are the barries to pro-environmental behaviour?" Environmental Education Research 8(3): 239-260.

Kuhlemeier, M., van Den Bergh, H. and Lagerweij, N. (1999). "Environmental knowledge, attitudes and knowledge in Dutch secondary education." The Journal of Environmental Education 30(2): 4-14.

Kvale, S. (1996). An Introduction to Qaualitative Research Interviewing. London, Sage.

Lafferty, W, M. and Knutsen, O. (1985). "Postmaterialsim in a social democratic state." Comparitive Political Studies 17: 4-411.

Landwerlin, G, M. (2001). Individualization and Family Solidarity: The Case of Spain. The Second Demographic Transition in Europe, Bad Herrenlab, Germany.

Latour, B. (1987). Science in Action. London, Open University Press.

Lee, B. (2003). "Ecological Modernisation and the Precautionary Principle." Retrieved 26/01, 2006, from http://www.ccels.cardiff.ac.uk/literature/publications/2003/leepaper.pdf.

Leedy, P. and Omrod, J, E. (2001). Practical Research: Plannig and Design (7th Ediiton). Upper Saddle River, NJ., Prentice Hall.

Lehmann, J. (1999). Befunde empirischer Forscung zu Umweltbidung und Umbeltbewusstsein. Opladen, Leske und Budrich.

Leonard-Barton, D. (1981). "Voluntary simplicity lifestyles and energy conservation." Journal of Consumer Research 8: 243-252.

Leopold, A. (1948). A Sand County Almanac. New York, Oxford University Press.

Levin, G. (1993). "Too green for their own good." Advertising Age 64 (29).

Lexico (2007). Dictionary. Retrieved 13/16/2007 from www.dictionary.com

Lightfoot, J. and Sloper, P. (2002a). Having a Say in Health. York, SPRU.

Lipman, M. (1991). Thinking in Education. Cambridge, Cambridge University Press.

LOGSE. (1990). "La Ley Orgánica de Ordenación General del Sistema Educativo." Retrieved 29/1/08, 2008, from http://www.mec.es/mecd/atencion/educacion/hojas/E_SistemaEduc/e-1-4.htm.

Longino, H, E. (1990). Science as Social Knowledge: Values and Objectivity in Scientific Inquiry. Princeton, NJ, Princeton University Press.

Lopez, E., Kreider, H, and Caspe, M. (2004). "Co-constructing family involvement." Evaluation Exchange x (4): 2-3.

Lopez, G. (1997). Putting new bite into knowledge. Organising Knowledge for Environmentally and Socially Sustainable Development. I. E. A. Serageldin, The World Bank: 10.

Lord, R., G., Brown, D, J. and Freiberg, S, J. (1999). "Understanding the dynamics of leadership: the role of follower self concepts in the leader / follower relationship." Organizational Behaviour and Human Decision Processes 78: 167-203.

Loughland, T., Reid, A., Walker, K. and Petocz, P. (2003). "Factors influencing young peoples conceptions of environment." Environmental Education Research 9(1): 3-20.

Loughland, T., Reid, A., Walker, K. and Petocz, P. (2002). "Young people's conceptions of environment: a phenomenological analysis." Environmental Education Research 8(2): 187-197.

Lucas, A. (1979). Environment and Environmental Education: Conceptual Issues and Curriculum Implications. Sydney, Australia International Press and Publications.

Lury, C. (1996). Consumer Culture. Cambridge, Polity Press.

Lyons, E. and Breakwell, G, M. (1994). "Factors predicting environmental concern and indifference in 13-16 year olds." Environment and Behaviour 26(2): 223-238.

Lyons, E., Uzzell D. and Storey, L. (2001). Waste Attitudes and Actions Study, Report to CC and SITA Environmental Trust.

Macnaughten, P. (2003). "Embodying the environment in everyday practices." The Sociological Review: 63-84.

Macnaughten, P., Grove-White, R., Jacobs, M. and Wynne, B. (1995). Public Perceptions and Sustainability: Indicators, Institutions, Participation. Preston, Centre for the study of Environmental Change, Lancaster University.

Macnaughten, P. and Jacobs, M. (1997). "Public identification with sustainable development: investigating public barriers to participating." Global Environmental Change 7(1): 5-24.

Macnaughten, P. and Scott, J. (1994). "Changing world views of students." ECOS 15(2): 2-7.

Macnaughten, P. and Urry., J. (1998). Contested Natures. London, Sage.

Madge, N. and Wilmott, N. (2004). Children and Young People's Participation in Decision Making on the Environment, Sustainable Development, and the Countryside: a Review of Evidence. London, DEFRA.

Maiteny, P, T. (2002). "Mind the Gap: summary of research exploring 'inner' influences on pro-sustainability learning and behaviour." Environmental Education Research 8(3): 299-314.

Makki, M, H., Abd-El-Khalick, K. and Boujaode, S. (2003). "Lebanese secondary school students' environmental knowledge and attitudes." Environmental Education Research 9(1): 21-33.

Maloney, M, P. and Ward, M, P. (1973). "Ecology:-Lets hear it from the people." American Psychologist: 538-586.

Maloney, M, P. and Ward, M, P. (1975). "A revised scale for the measurement of ecological attitudes and knowledge." American Psychologist 30: 787-790.

Marcinowski, T. (1987). An Analysis of Correlates and Predictors of Responsible Environmental Behaviour. Psychology. Carbondale, Southern Illinois University.

Marton, F. and Booth, S. (1997). Learning and Awareness. New Jersey, Lawrence Erlbaum.

Maslow, A, H. (1954). Motivation and Personality. New York, Harper.

Maslow, A., H. (1971). The Farther Reaches of Human Nature. New York, Viking.

Massa, I. and Skou Anderson, M. (2000). "Special Issue Introduction: ecological modernization." Journal of Environmental Policy and Planning **2**: 265-267.

Massey, D. (1998). The spatial construction of youth cultures. Cool Places: Geographies of Youth Cultures. T. Skelton, V, G. London & New York, Routeledge: 121-129.

Mathews, M. (1986). Children as map makers. The Geographical Magazine. **August:** 47-49.

Matthews, H., Limb, M. and Taylor, M. (1998). "The geography of children: some ethical and methodological considerations for project and dissertation work." Journal of Geography in Higher Education **22**(3): 311-324.

Matthews, H., Taylor, M. and Limb, M. (2000a). "The unacceptable flanuer: The shopping mall as teenage hangout." Childhood **7**(3): 279-294.

Mayall, B. (1994). Children's Childhoods: Observed and Experienced. London, Washington DC, The Falmer Press.

McCann Erickson. (2001). Youth and Sustainable Consumption - A Worldwide Snapshot, UNEP.

McGregor, A. (2004). "Sustainable development and 'warm fuzzy feelings': discourse and nature within Australian environmental imaginaries." Geoforum **35**: 593-606.

McGregor, A. (2005). "Negotiating nature:exploring discourse through small group research." Area **37**(4): 423-432.

McKendrick, J., Bradford, M, G. and Fielder, A, V. (2000). "Kid customer? Commercialisation of playspace and the commondification of childhood." Childhood **7**(3): 295-314.

Mcormick, J. (1995). The Global Environemtnal Movement. Chichester, Wiley.

Meadows, G., Meadows, J., Randers, J. and Behrens, W. (1972). The Limits to Growth. London, Earth Island.

Mebbeleint, T, A. (1972). "The land ethic realised; some social psychological explanations." Journal of Social Issues **28**(4): 79-87.

MEC. (Ministerio de Educación y Ciencia) 1999) Libro Blanco de la Educación Ambiental en España.

MEC (2006). Ley Orgánica 2/2006. Ministerio de Educación y Ciencia. **7899.**

Meinhold, J. and Malkus, A, J. (2005). "Adolescent environmental behaviours: can knowledge, attitudes and self efficacy make a difference?" Environment and Behaviour **37**(4): 511-532.

Midgley, M. (1978). The Roots of Human Nature. New York, New American Library.

Milbrath, L. (1984). Environmental Vanguard for a new Society. Albany, State University of New York Press.

Milbrath, L. (1986). Environmental beliefs and values. Political Psychology. L. Hermann. San-Francisco, Jossey-Bass: 97-137.

Milbrath, L. (1989). Envisioning a Sustainable Society: Learning our way out. Albany, State University of New York Press.

Miles, S. (2000). Youth Lifestyles in a Changing World. Buckingham, Philidelphia, Open University Press.

Miller, J. (1975). "The development of pre-adult attitudes towards environmental conservation." School Science and Mathematics 75: 729-737.

Miller, J. and Glassner, B. (1997). The 'inside' and 'outside': finding realities in interviews. Qualitaitve Reseach: Theory, Method and Practice. Silverman, D. London, Sage 99-112

Mindell, A. (1988). City Shadow's: Psychological Interventions in Psychiatry. London, Routeledge.

Moorhouse, H. (1989). Models of work, models of leisure. Leisure for Leisure: Critical Essays. C. Rojek. London Macmillan.

Moreno Minguez, A. (2003). "The late emancipation of Spanish youth: keys for understanding." Electronic Journal of Sociology 17(1).

Morris M, and Schagen. I. (1996). Green Attitudes or Learned Responses. Slough, National Foundation for Educational Research.

Moscovi, S. (1984). The phenomenon of social representations. Social representations. Farr, R. and Moscovi, S. Paris, Cambridge University, Editions de la Maison des Sciences de l'Homme: 3-69.

Muntaner, C. and Gomez, M, B. (2003) Qualitative and quantitative research in social epidemiology: is complementarity the only issue? SciELO Public Health: 10.1590/S0213-91112003000900007

Munton, R. (1997). "Engaging sustainable development: some observations on progress in the UK." Progress in Human Geography 21(1): 147-163."

Myers, G. (1998). Children and Animals: social development and our connections to other species. Oxford, West View Press.

Myers, G., Boyes, E. and Stanisstreet, M. (1999). "Something in the air; school student's ideas about air pollution." International Research in Geographical and Environmental Education 8(2): 108-119.

Myers, G. and Macnaughten, P. (1998). "Rhetorics of environmental sustainability: commonplaces and places." Environment and Planning A 30(2): 333-353.

Myers, J., Optow, E. and Russell, A. (2004). Human identity in relation to black wild bears: a natural social ecology of subjective creatures. Identity and the Natural Environment. Clayton, S, and Optow, S. Cambridge, MA, MIT Press: 67-90.

National Statistics. (2001). "Devon: Residents by Age." from http://www.statistics.gov.uk/StatBase/xsdataset.asp?More=Y&vlnk=1835&All=Y&B2.x=7&B2.y=4.

Naval, C., Print, M. and Iriate, C. (2003) Civic education in Spain: a critical review. Journal of social Studies Research (6) no pages

Newhouse, N. (1991). "Implications for attitude and behavioural research for environmental conservation." The Journal of Environmental Education 22(1): 26-32.

Newman, H, R. (2001). "The Mineral Industry of Spain." Retrieved 19/08, 2005, from http://minerals.usgs.gov/minerals/pubs/country/2001/spmyb01.pdf.

Norman, D. (1991). The Green Maze: Environmental Information and the needs of the Public. Bristol, The Eco Environmental Education Trust.

Nyberg, A. and Stø, E. (2001). Is the future yours? Youth, sustainable consumption patterns and lifestyles, MOST, UNESCO and UNEP: 7-47.

O'Donoghue, R. (1993). "Clarifying environmental education: a search for clear action in Southern Africa." Southern African Journal of Environmental Education 13: 28-38.

O'Donoghue, R. (1997). Detached Harmonies: a Study in/on Developing Social Processes of environmental education in Southern Africa. Grahamstown, Rhode University.

O'Donoghue, R. and Lotz-Sisitka, H. (2002). "Some insights on the GAP." Environmental Education Research 8(3): 261-271.

O'Neil, J. (1997). Value pluralism, incommensurability and institutions. Valuing Natures: Economics, Ethics and the Environment. J. Foster. London, Routeledge.75-89.

O'Riordan, T. (1977). "Environmental ideologies." Environment and Planning A 9(1): 3-14.

OECD (2002). Towards Sustainable Household Consumption: Trends and Policies in OECD Countries, OECD.

Ofsted (2003). Taking the First Step Forward...Towards and Education for Sustainable Development.

Ofsted (2005). The Sustainable School Self-Evaluation Tool. London, Ofsted.

Ofsted (2008). Geography in Scools: Changing Practice. London, Ofsted.

Olli, E., Grenstad, G. and Wollebaek, D. (2001). "Correlates of environmental behaviours." Environment and Behaviour 33(2): 181-208.

Oreg, S. and Katz.-Gerro, T. (2006). "Predicting proenvironmental behaviour cross-nationally." Environment and Behaviour 38(4): 462-483.

Oskamp, S. (2000). "Psychological contributions to achieving an ecologically sustainable future for humanity." Journal of Social Issues(56): 3.

Oskamp, S., Harrington, M, J., Edwards, T, C., Sherwood, D, L.,Okuda, S, M. and Swanson, D, C (1991). "Factors influencing household recycling behavior." Environment and Behaviour 23: 494-519.

Ostman, R. and Parker, J. (1987). "Impact on education, age, newspapers and television on environmental knowledge, concern and behaviours." Journal of Environmental Education 19: 3-9.

Owen, S. (2000). "Commentary." Environment and Planning A 32: 1141-1148.

Palmer, A. S., J. Bajd, B. Hart, K, P, P. and Tsaliki, E. (1998a). "Significant influences on the development of adult's environmental awareness in the UK, Slovenia and Greece." Environmental Education Research 4(4): 429-444.

Palmer, A., Suggate, J., Bajd, B., Hart, K, P, P., Ho, R, K, P., Ofono-Orecho, J, K, F., Peries, M., Robottom, I., Tsaliki, E. and Staden, C, V. (1998b). "An overview of significant influences on the development of adults environmental awareness in nine countries." Environmental Education Research 4(4): 445-464.

Palmer, J. (1992). "Life experiences of environmental educators: first report on autobiographical research data." Environmental Education 41(NAEE).

Palmer, J. (1998). Environmental Education in the 21st Century: theory, practice, progress and promise. London, Routeledge.

Palmer J, and Neil, P. (1994). The Handbook of Environmental Education. London, Routeledge.

Payne, P. (2000). "Identity and environmental education." Environmental Education Research 7(1): 67-88.

Payne, P. (2001). Embodiment and action competence. Critical Environmental and Health Education: Research Issues and Challenges. Jensen, B. Schnack, K. and Simovska, V. Copenhagen, The Danish University of Education: 185-208.

Payne, P. (2002a). "Post-metatheorizing Environmental Behaviours in Environmental Education." Environmental Education Research 8(3): 307-314.

Payne, P. (2005). "Families, home and environmental education." Australian Journal of Environmental Education 21: 81-95.

Pearce, D., Markandya, A., and Barbier, E. (1989). Blueprint for a Green Economy. London, Earthscan.

Pereyra, M, A. (2002). "Changing educational governance in Spain: decentralisation and control in the autonomous communities." European Educational Research Journal 1(4): 667-675.

Peters Grant, V, P. (1996). The Influence of Life Experiences on the Vocational Interests of Volunteer Environmental Workers. Orono, University of Maine.

Peterson, N. (1982). Developmental Variables Affecting Environmental Sensitivity in Professional Environmental Educators. Carbondale, Southern Illinois.

Petocz, P., Reid, A. and Loughland, T. (no date). "The importance of adult's conceptions of the environment for education." Retrieved 17/04, 2006, from http://www.aare.edu.au/03pap/pet03250.pdf.

Philo, G. (1993). "From Buerk to Bandaid: the media and the 1984 Ethiopian famine". in Eldridge, J, E, T. Getting the Message: News, Truth and Power. Glasgow, Routeledge 104-125.

Pierce, J, C., Lovrich, N, P Jr., Tsurutani, T. and Abe, T. (1987). "Environmental belief systems among Japanese and American elites and publics." Political Behaviour 9: 139-159.

Pooley, J., A. and O'Connor, M. (2000). "Environmental education and attitudes: emotions and feelings are what is needed." Environment and Behavior 32(5): 711-723.

Preuss, S. (1991). Umweltkatastrophe Mensch. Ueber unsere Grenzen und Moeglichkeiten, oekologisch bewusst zu handeln. Heidelberg, Roland Asanger Verlag.

QCA (Qualifications and Curriculum Authority). (1999). "The English National Curriculum." Retrieved 14/06, 2007, from http://www.nc.uk.net/webdav/harmonise?Page/@id=6016.

QCA. (Qualifications and Curriculum Authority) (2002). "Education for Sustainable Development." Retrieved 11/11, 2004, from. http://www.nc.uk.net/esd/school_management/practice/curriculum.htm.

QRS International (2007) NVivo 7 and XSight product comparison 2007. Retrieved 27/04, 2007, from http://www.qsrinternational.com/products/productoverview/product_overview.htm.

Regan, T. (1993). The Case for Animal Rights. Berkley, University of California Press.

Reimer, B. (1995). Youth and modern lifestyles. Youth Culture in Late Modernity. Fornas, J. and Bolin, G. London, Sage: 120-144.

Reusswig, F., Lotze-Campen, H., and Gerlinger, K. (no date). "Changing Global Lifestyle and Consumption Patterns: The Case of Energy and Food." Retrieved 0706, 2005, from http://www.populationenvironmentresearch.org/papers/Lotze-Campen_Reusswig_Paper.pdf.

RGS (Royal Geographical Society) (2005). "Education for Sustainable Development in the National Curriculum." Retrieved 12/09, 2006, from http://www.esd.rgs.org/link9.html.

Rickinson, M. (2001). "Learners and learning in environmental education: a critical review of the evidence." Environmental Education Research 7(3): 207-320.

Roberts, J, A. and Bacon D, R. (1997). "Exploring the subtle relationships between environmental concern ad ecologically conscious consumer behaviour." Journal of Business Research 40: 79-89.

Robottom I. and Hart, P. (1993). Research in Environmental Education: Engaging the Debate. Geelong, Victoria, Deakin University.

Rohrschneider, R. (1988). "Citizen's attitudes towards environmental attitudes: Selfish or selfless?" Comparative Political Studies **21**: 347-67.

Rosaldo, R. (1989) Culture and Truth. Beacon Press: Boston

Ross, A. (1994). The Chicago Gangster Theory of Life: Nature's Debt to Society. London, Verso.

Routeledge, P. (1997). "The Imagineering of resistance. Pollok Free State and the practice of post-modern politics." Transactions of the Institute of British Geographers **22**(3): 359-376.

Rowell, A. (1996). Green Backlash: Global Subversion of the Environmental Movement. London, Routeledge.

Samdahl, D, M. and Robertson, R. (1989). "Social determinants of environmental concern." Environment and Behaviour **21**: 57-81.

Schahn, J. (1993a). Die Kluft zwischen Einstellung und Verhalten beim individuellen Umweltscutz [The gap between attitude and environment protection behaviour]. Psychologie fur den Umweltschutz. Schahn, J. G. Weinheim, T. Germany, PVU: 29-49.

Schahn, J. and Holzer, E. (1990). "Studies of individual environmental concern: the role of knoweldge, gender and background variables." Environment and Behaviour **22**: 767-786.

Schnack, K. (2001). Action competence as a curriculum perspective. Critical Environmental and Health Education: Research Issues and Challenges. Jensen, B . Schnack, K. and Simovska, V. Copenhagen, The Danish University of Education: 107-125.

Schools Council (1974). Project Environment. Harlow, Longman.

Schultz, P, M. (2000). "Empathizing with nature: the effects of perspective taking on concern for environmental issues." Journal of Social Issues **56**(3): 391-406.

Schultz, P., W., Oskamp, S. and Mainieri, T. (1995). "Who recycles and when? A review of personal and situational factors." Journal of Economic Psychology **15**(105-121).

Schulze, G. (1997). From situations to subjects: moral discourse in transition. Constructing the New Consumer Society. Sulkumen, P., Holmwood, J., Radner, H. and Schulze, G. Basingstoke, Macmillan Press.

Schuman, H. Rieger, C. (1992). "Historical analogies, generational effects and attitudes towards war." American Sociological Review **57**: 315-26.

Schusler, T, M. and Krasny, M, E. (no date) Youth participation in local environmental action: integrating science and civic education.

Schwartz, S, H. (1973). "Normative explanations of helping behaviour. A critique, proposal and empirical test." Journal of Experimental Social Psychology **9**: 349-364.

Schwartz, S, H. (1977). Normative influences on altruism. Advances in Experimental Social Psychology. L. Berkowitz. New York, Academic Press. **10**.

Schwartz, S, H. (1994). "Universals in the content and structure of values; theoretical advances and empirical tests in twenty countries." Advances in Experimental Social Psychology **2**: 1-65.

Scott, J. (2000). Rational choice theory. Understanding Contemporary Society: Theories of the Present. G. Browning, A., Halcli, N., Hewlett, N. and Webster, F. London, Sage.126-138

Scott, W. and Gough, S. (2003). Sustainable Development and Learning: Framing the Issues. London, Routeledge.

Scruggs, L. (2003). Sustaining Abundance: Environmental Performance in Industrial Democracies. Cambridge, Cambridge University Press.

Sebba, R. (1991). "The landscapes of childhood: the reflection of childhood's environment in adult memories and children's attitudes." Environment and Behaviour **23**(4): 395-422.

Segger, M. (1999). "Sustainable consumption: the challenge of the coming generation." UNEP Industry and Environment **22**(4): 35-37.

Seldon, T. S., D. (1994). "Environmental quality and development. Is there a Kuznets curve for air pollution." Journal of Environmental Economics and Management **27**: 147-62.

Selman, P. (1994). "Canada's environmental citizens: innovation and partnership for sustainable development." British journal of Canadian Studies **9**(1): 44-52.

Sherif, M. (1936). The Psychology of Social Norms. New York, Harper.

Shove, E. (1999). Notes on Comfort, Cleanliness and Convenience. EFS Summer School.

Shove, E. (2000). Questions of Comfort: Challenging Research and Practice in the Built Environment, Department of Sociology at Lancaster University for ENERBUILD.

Sia, A., Hungerford, H, R. and Tomera, A, N. (1985). "Selected predictors of environmentally responsible behaviour." Journal of Environmental Education **17**: 31-40.

Sibley, D. (1995). Geographies of Exclusion. London, Routeledge.

Singer, P. (1976). Animal Liberation: A New Ethics for our Treatment of Animals. London, Jonathon Cape.

Sivek, D, J. and Hungerford, H, R. (1989/90). "Predictors of responsible environmental behaviour in members of three Wisconsin conservation organisations." Journal of Environmental Education **21**(2): 35-40.

Sivek, D. J. (2002). "Environmental sensitivity among Wisconsin high school students." Environmental. Education Research 8(2): 155-170.

Skelton, T. and Valentime, G. (2000). 'Nothing to do, no-where to go'. Teenage girls and public space in the Rhondda Valleys, South Wales. Children's Geographies: Playing, Living, Learning. Valentine, G. and Holloway S, L. London, Routeledge: 80-99.

Skelton, T. and Valentime, G. (1999). Cool Places: Geographies of Youth Cultures. London, Routeledge.

Skrentny, J., D. (1993). "Concern for the environment; a cross national perspective." Journal of Public Opinion Research 5(4): 334-352.

Smith, J. (2000). Introduction. The Daily Globe: Environmental Change, the Public and the Media. Smith, J. London, Earthscan Publications: 3-14

Sobel, M. (1981). Lifestyle and Social Structure; Concepts, Definitions and Analyses. New York, Academic Press.

Soutar, G, N., Ramaseshan, B. and Molster, C, M. (1994). "Determinants of pro-environmental behavioural consumer purchase behaviour: some Australian evidence " Asia Pacific Advances in Consumer Research **1**: 28-35.

Spaargaren, G. and van Vliet, B. (2000). "Lifestyle, consumption and the environment: the ecological modernisation of domestic consumption." Society and Natural Resources **9**: 50-76.

SSAT. (2006). "Specialist Schools and Academies Trust; Excellence and Diversity." Retrieved 12/01, 2006, from http://www.specialistschools.org.uk/default.aspa.

Stables, A. (2001). "Language and meaning in environmental education: an overview." Environmental Education Research 7(2): 121-128.

Stables, A. and Bishop., K. (2001). "Weak and strong conceptions of environmental literacy: implications for environmental education." Environmental Education Research 7(1): 89-97.

Stake, R, E. (2000). Case studies. Handbook of Qualitative Research (2nd Edition). N. Denzin, K. and Lincoln, Y, S. Thousand Oaks, CA. , Sage: 435-454.

Steger, M, A, E. and Witt, S, L. (1989). "Gender differentiations in environmental orientations; a comparison of publics and activists in Canada and the US." The Western Political Quarterly 42(4): 627-649.

Sterling, S. (2001). Sustainable Education: Revisioning Learning and Change. Totnes, Green Books Ltd.

Stern, D., Common, M. and Barbier, E. (1996). "Economic growth and environmental degradation: the Environmental Kuznets Curve and sustainable development." World Development 24: 1151-1160.

Stern, P. (1992a). "Psychological dimensions of global environmental change." Annual Review of Psychology 42: 269-302.

Stern, P. (1992b). "What psychology knows about energy conservation." American Psychologist 36(329-342).

Stern, P. (1997). Towards a working definition of consumption for environmental research and policy. Environmentally Significant Consumption: Research Directions. Stern, P., Ruttan, V, R., Socolow, R, H. and Sweeney, J, L. . Washington, National Academy Press: 12-35.

Stern, P. (1999). "Information, incentives, and pro-environmental consumer behaviour." Journal of Consumer Policy 22: 461-478.

Stern, P. (2000). "Towards a coherent theory of environmentally significant behaviour." Journal of Social Issues 56(3): 407-424.

Stern, P. and Aronson, E. (1984). Energy Use: The Human Dimension. New York, NY. W. H. Freeman and Company.

Stern, P., Dietz, T. and Kalof, L. (1993). "Values orientations, gender and environmental concern." Environment and Behaviour 25(3): 322-348.

Stern, P., Dietz, T., Guagnano, G. and Kalof, L. (1999). "A Value-belief-norm theory of support for social movements: the case of environmental concern." Environment and Behaviour 25(3): 322-348.

Stern P., Dietz, T., Kalof, L. and Guangnano, G. (1995). "Values, beliefs and environmental action; attitude formation towards emergent attitude objects." Journal of Applied Social Psychology 25: 1611-1636.

Stern, P. and Dietz., T. (1994). "The value basis of environmental concern." Journal of Social Issues 50: 65-84.

Stern, P. and Oskamp, S. (1987). Managing scarce environmental resources. Handbook of Environmental Psychology. Stokols, D. and Altman, I. New York, Wiley: 1043-1088.

Steuer, N., Thompson, S. and Marks, N. (2006) Review of the environmental

dimension of children and young people's well-being. A report for the Sustainable Development Commission. The New Economics Foundation. Available from. www.sd-commission.org.uk/publications/downloads/NEF-reviewof20%envdimensionofchildrenswellbeing.pdf

Straughan, R, D. and Roberts, J, A. (1999). "Environmental segmentation alternatives: a look at green consumer behaviour in the new millennium" Journal of Consumer Marketing **16**(6): 558 - 575

Strauss, A. and Corbin, J. (1990). Basics of Qualitative Research. Thousand Oaks, C.A, Sage.

Stryker, S. (1994). Identity theory: its development, research base, and prospects. Studies In Symbolic Interactionism Vol.16. Denzin, N, K. London, JAI Press: 199-219.

Sykes , H, D., Yencken, J., Fien, J. and Choo,, Ed. (2000). Young people and the environment: attitudes, knowledge and behaviour. Environment, Education and Society in the Asia Pacific: Local Traditions and Global Discourses. London, Routeledge.

Szerszynski, B. (1993). Uncommon Ground: Moral Discourse, Foundationalism and the Environmental Movement. Department of Sociology, Lancaster.

Tajfel, H. and Turner, J, C. (1979). An integrative theory of inter-group conflict. The Social Psychology of Inter-group Relations. Austin. W. G. and Worchel, S. (Eds.). Monterey, CA: Brooks/Cole.: 33-47.

Tajfel, H. and Turner, J, C. (1986). The social identity theory of inter-group behaviour. Psychology of Inter-group Relations. Worchel, S. and Austin, L, W. (Eds). Chicago, Nelson-Hall.

Tanner, C. (1999). "Constraints on environmental behaviour." Journal of Environmental Psychology **19**: 145-157.

Tanner, T. (1980). "Significant life experiences: a new research area in environmental education." Journal of Environmental Education **11**(4): 20-24.

Tanti, C. (2003). 'Populars, Nerds and Normals': Peer group categories and adolescent social identity processes. 32nd Annual Meeting of the Society for Australian Social Psychologists, Sydney, Australia.

Tarrant, M., Mackenzie, L. and Hewitt, L, A. (2006). "Friendship group identification, multidimensional self concept, and experience for developmental tasks in adolescence." Journal of Adolescence **29**: 627-640.

Taylo, S. and Bogdan, R. (1998). Introduction to Qualitative Research Methods (3rd Edition). New York, Wiley.

Taylor, S. and Todd, P. (1997). "Understanding the determinants of consumer composting behaviour." Journal of Applied Social Psychology **27**(7): 602-628.

Thogersen, J. (1999). "Spillover processes in the development of a sustainable consumption pattern." Journal of Economic Psychology **20**: 53-81.

Thomanshow, M. (1995). Ecological Identity: Becoming a Reflective Environmentalist. Cambridge, MA, MIT Press.

Thompson, S,C,G. and Barton, M, A. (1994). "Ecocentric and anthropocentric attitudes towards the environment." Journal of Environmental Psychology **14**: 149-157.

Tikka, P, M., Kuitunen, M, T. and Tynys, S, M. (2000). "The effects of educational background on students attitudes, activity and general knowledge concerning the environment." Journal of Environmental Education **31**(3): 12-19.

Tooke, J. (2000). "Betweenness at work." Area **32**(3): 217-224.

Torger, B. and Garcia-Vlinas, M, A. (2006). Participation in Environmental Organizations: An Empirical Analysis. Basel, Centre for Research in Economics, Management and the Arts (CREMA): 1-29.

Tucker, F. (2003). "Sameness or difference? Exploring girls' use of recreational space." Children's Geographies **1**(1): 111-124.

Tucker, F. and Matthews, H. (2001). "'They don't like girls hanging around there': conflicts over recreational space in rural Northamptonshire." Area **33**(2): 161-168.

Tuncer, G., Ertepiar, H. and Tekkaya, C. (2005). "Environmental attitudes of young people in Turkey: effects of school type and gender." Environmental Education Research **11**(2): 215-233.

UN (United Nations). (1976). "Belgrade Charter [on-line]." Retrieved 13/04, 2003, from www.eelink.net/FCCSET/Endnotes.html.

UN (United Nations). (1992). "Agenda 21." Retrieved 0202, 2002, from http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm.

UNCHE (United Nations Conference on the Human Environment) (1972). Report on the United Nations Conference on the Human Environment. Stockholm.

UNECE (United Nations Economic Commission for Europe) (1998). Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters. Aarhus, Denmark, UNECE.

UNEP (United Nations Environment Programme) (2002). The International Children's Conference on the Environment,, British Columbia, Canada.

UNEP (United Nations Environment Programme) (2005). International Children's Conference on the Environment, Tunza, Japan.

UNEP (United Nations Environment Programme) (2006). International Children's Conference on the Environment, Putrajaya, Malaysia.

UNESCO (United Nations Educational, Scientific and Cultural Organisation) (2000). Youth, Sustainable Consumption Patterns and Lifestyles. Paris, UNESCO.

UNESCO (United Nations Educational, Scientific and Cultural Organisation) /UNEP (United Nations Environment Programme) (1977). Intergovernmental Conference on Environmental Education, Tblisi.

University of Plymouth. (2006) "Sustainability Policy Summary" Retrieved on 13/9/2006 from http://csf.plymouth.ac.uk/files/UPSUSTPOLICY12.pdf

University of Plymouth. (2005) "CFS Home" Retrieved on 13/9/2006 from: www .csf.plymouth.ac.uk

UrbanAudit. (2001). "City Profile." Retrieved 10/10, 2005, from http://www.urbanaudit.org/CityProfiles.aspx.

Uzzell, D. (1994). Children as Catalysts of Environmental Change. Surrey, University of Surrey.

Uzzell, D. (2000). "The psycho-spatial dimension of global environmental problems." Journal of Environmental Psychology **20**: 307-318.

Uzzell, D. (2003). Memorandum from Professor David Uzzell. London, The United Kingdom Parliment.

Uzzell D (1999). "Education for environmental action in the community: new roles and relationships." Cambridge Journal of Education **29**(3): 397-413.

Uzzell, D., Davallon, J., Bruun Jensen B., Gottesdiener, H,. Fontes, J., Kofoed, J., Uhrenholdt, G. and Vognsen, C. (1994). Children as catalysts of global change: REPORT TO dgxii/d-5 research on economic and social aspects of the environment (SEER). Brussels, European Commission.

Uzzell, D. and Leach, R. (2003). Implementation and Evaluation of Cotton Nappy Provision at East Surrey Hospital, East Surrey Hospital.

Valentine, G. (2000). "Exploring children and young people's narratives of identity." Geoforum **31**: 257-267.

Valentine, G. (2003). "Boundary crossings: transitions from childhood to adulthood." Children's Geographies **1**(1): 37-52.

van Liere K, D. and Dunlap, R., E.(1981). "Environmental concern: does it make a difference how it is measured?" Environment and Behaviour **13**: 651-676.

van Liere K., Kent, D. and Dunlap R, E. (1980). "The social basis of environmental concern: a review of hypotheses, explanations and empirical evidence." Public Opinion Quarterly 44(181-197).

Van Matre, S. (1972). Acclimatizing: A Personal and Reflective Approach to a Natural Relationship. New York, American Camping Association.

Vining, J. E., A. (1990). "What makes a recycler? A comparison of recyclers and non-recyclers." Environment and Behaviour **22**(1): 55-73.

Vlahov, S, J. and Treagust, D, F. (1988). "Student's knowledge of energy and attitude to energy conservation." School Science and Mathematics **88**(8): 452-458.

Votaw, T., A. (1983). "Antecedents of environmental attitudes: a survey of seasonal naturalists at Denali National Park and Reserve." unpublished.

WCED (World Commission for Sustainable Development) (1987). Our Common Future. Oxford, Oxford University Press.

Weening, W, H. and Midden, C, J, H. (1991). "Communication network influences on information diffusion and persuasion." Journal of Personality and Social Psychology **61**(734-742).

Weigel, R. and Weigel, R. (1978). "Environmental concern: the development of a measure." Environment and Behaviour(10) 3-15.

Weller, S. (2006). "Situating (young) teenagers in geographies of children and youth." Children's Geographies 4(1): 97-108.

West, A. (1996). "Citizenship, children and young people." Youth & Policy **55**: 69-74.

Wiidegren, O. (1998). "The new environmental paradigm and personal norms." Environmental and Behaviour 30(11): 75-100.

Wilcox, D. (1993). The Guide to Effective Community Participation. London, Partnership Books.

Wilson, A. (1992). The Culture of Nature: North American Landscape from Disney to the Exxon Valdez. Cambridge, MA: Blackwell.

Wilson, R. (1993). "The importance of environmental education at early childhood level." Environmental Education and Information **12**: 17-24.

Wilson, R. (1997). "The wonder of nature: honouring children's way of knowing." Journal of Professional Development: Early Childhood News **March / April**: 6.

Witherspoon, S. and Martin, J. (1992). What do we mean by green? British Social Attitudes; The 9th Report. Jowell, R., Brook, L., Prior, G. and Taylor, B. Dartmouth, Aldershot, Hants. 1 – 26

World Bank Group (2004). "World Development Indicators, Data Query." Retrieved 4/10, 2005, from http://devdata.worldbank.org/data-query/.
World Bank. (2004). World Development Indicators, World Bank Publications.

World Bank. (2005). "World Development Indicators: Size of the Economy." Retrieved 08/08, 2006, from http://devdata.worldbank.org/wdipdfs/table1_1.pdf.

Worsley A, and Skypiec, G. (1998). "Environmental attitudes of senior secondary school students in South Australia." Global Environmental Change 8(3): 209-225.

WSSD (World Summit for Sustainable Development) (2002) "Johannesburg Plan of Implementation". Retrieved 08/08, 2007, from http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIToc.htm

Wynn, B. (1996). May the sheep safely graze? A reflexive view of the expert-lay knowledge divide. Risk, Environment and Modernity: Towards a new Ecology. Lash, S., Szerszynski, B. and Wynne, B. London, Sage.44-83

Wynne, B. (1994). Scientific knowledge and the global environment. Social Theory and the Global Environment. T. R. Benton, M. London, Routeledge.

Yearley, S. (1992). The Green Case. London, Routeledge.

Yin, R, K. (1993). Applications of Case Study Research London, Sage.

Yin, R., K. (2003). Case Study Research. Thousand Oaks, CA., Sage.

Yin, R., K. (1994). Case Study Research: Design and Methods (2nd Edition). Beverly Hills, CA. Sage.

Zey, M. (1992). Decision Making: Alternatives to Rational Choice Models London Sage.

Appendix 1. The Questionnaire (English version)

This questionnaire will take about 20 minutes to complete. You will need to return it to your teacher in the envelope provided.

1.0 You, Your Home and Family

Date: / / 2003
Name of School.....

1.1 Your Name.....

1.2 What you would like to be called in the project.....

1.3 Are you Male? ☐ Female? ☐ **1.4** Date of Birth / / 19.....

1.5 Which school year are you in? 9 10 11 12 13

1.6 (Years 9 and 10 only) Which class are you in for:

Maths ☐ English ☐ Science ☐

1.7 How many people over 18 years old live in your home? ☐

1.8 How many people under 18 years old live in your home? ☐

1.9 About your home, do you live in a:

Detached House ☐ Flat ☐

Semi-detached House ☐ Caravan ☐

Terraced House ☐ Other ☐

1.10 What do your parent(s) or the adult(s) you live with do for a living?

.....

.....

.....

1.11 Do you have a garden at home? Yes ☐ No ☐

1.12 Do you have an open area, such as a park, near your home? Yes ☐ No ☐

1.13 If you do have a garden or an open area near your home, what do you use it for?
You can tick as many boxes that apply

- Playing Sports ☐
- Relaxing/ playing with friends ☐
- Keeping Pets ☐
- Gardening ☐
- I never go there ☐
- Other (please tell me about it) ☐

1.14 Do you have any pets?

Yes ☐ No ☐

1.15 If yes, what are they?

- Dog ☐
- Cat ☐
- Bird ☐
- Fish ☐
- Rabbit / Guinea pig ☐
- Gerbil / Hamster ☐
- Other ☐

1.16 Are you involved in making any of the following family decisions?

	Yes	No	Sometimes
Everyday Shopping (e.g. food)	☐	☐	☐
Clothes Shopping	☐	☐	☐
What is done with waste	☐	☐	☐
What transport is used for journeys	☐	☐	☐
Saving energy in the home	☐	☐	☐
Where you go on holiday	☐	☐	☐
Family Outings	☐	☐	☐

1.17 Do your family ever buy 'green' products such as organic or fair trade?

Yes, always ☐ Sometimes ☐ No ☐ Don't know ☐

1.18 Are you a vegetarian? Yes ☐ No ☐

1.19 Is anyone in your family vegetarian? Yes ☐ No ☐

2.0 About Transport

2.1 How many cars are there in your household? ☐

2.2 How many bicycles are there in your household? ☐

2.3 In the table below please tell me about the transport you and your family use

	YOU				YOUR FAMILY			
	Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never
Car	☐	☐	☐	☐	☐	☐	☐	☐
Bicycle	☐	☐	☐	☐	☐	☐	☐	☐
Local Buses	☐	☐	☐	☐	☐	☐	☐	☐
Coach	☐	☐	☐	☐	☐	☐	☐	☐
Trains	☐	☐	☐	☐	☐	☐	☐	☐
Walking	☐	☐	☐	☐	☐	☐	☐	☐

3.0 Media

3.1 Please tick which of the following media types you or your family use in your home

	YOU				YOUR FAMILY			
	Daily	Weekly	Monthly	Never	Daily	Weekly	Monthly	Never
Watching TV	☐	☐	☐	☐	☐	☐	☐	☐
Newspapers	☐	☐	☐	☐	☐	☐	☐	☐
Radio	☐	☐	☐	☐	☐	☐	☐	☐
Internet	☐	☐	☐	☐	☐	☐	☐	☐
Books	☐	☐	☐	☐	☐	☐	☐	☐
Magazines	☐	☐	☐	☐	☐	☐	☐	☐
Computer Games	☐	☐	☐	☐	☐	☐	☐	☐

3.2 Which media type do you believe is the most trustworthy in giving important information? Please tick one box only.

TV	☐	Internet	☐
Radio	☐	Magazines	☐
Newspapers	☐	Books	☐

3.3 Which of the following sorts of TV programmes do you watch? Please tick one box for each option.

	Daily	Weekly	Monthly or Less	Never
Soap Operas	☐	☐	☐	☐
The News	☐	☐	☐	☐
Science Programmes	☐	☐	☐	☐
Reality TV	☐	☐	☐	☐
Nature Programmes	☐	☐	☐	☐
Music TV	☐	☐	☐	☐
Drama Serials	☐	☐	☐	☐
Holiday Programmes	☐	☐	☐	☐
Documentaries	☐	☐	☐	☐

4.0 Money

4.1 Do you have any money to spend yourself? Yes ☐ No ☐

4.2 How much approximately per week?.....

4.3 If you do have your own spending money, what sorts of things do you like spending your money on?

.....

.....

.....

4.4 Have you ever donated money to an environmental cause? Yes ☐ No ☐
If you have could you tell me who you donated the money to?

.....

4.5 Have you ever donated time to an environmental cause? Yes ☐ No ☐
4.6 If you have could you tell me who you donated the time to?

.....

5.0 About You and the Environment

5.1 Please can you indicate which of the following organisations you are aware of and whether you have ever been a member of them?

	I am aware Of this organisation	I have been a member of this organisation	Members of my family belong to this organisation
Greenpeace	☐	☐	☐
Friends of the Earth	☐	☐	☐
National Trust	☐	☐	☐
RSPB	☐	☐	☐
WWF	☐	☐	☐

5.2 Perhaps you are a member of another? Please tell me about it.

.....
.....

5.3 Can you look at the following table and tell me how these different things influence how you feel about the environment.

	Makes me care for the environment	Makes me feel concern	Don't Know	Does not influence me	Totally disinterested
Keeping pets	☐	☐	☐	☐	☐
Parents	☐	☐	☐	☐	☐
Teachers	☐	☐	☐	☐	☐
Religion	☐	☐	☐	☐	☐
Outdoors	☐	☐	☐	☐	☐
Education	☐	☐	☐	☐	☐
Organisations	☐	☐	☐	☐	☐
TV/Media	☐	☐	☐	☐	☐
Travel Abroad	☐	☐	☐	☐	☐
Environmental Issues	☐	☐	☐	☐	☐
Friends	☐	☐	☐	☐	☐
Books/ Magazines	☐	☐	☐	☐	☐

5.4 How do you rate your knowledge of environmental issues? (Please circle)

Excellent Good Medium Not Good Don't Know

5.5 In the following table I would like you to tell me which subjects you study and if the environment is discussed in subjects.

	Do you study this subject?	Is the environment ever discussed in this subject?		Do you study this subject?	Is the environment ever discussed in this subject?
Art	☐	☐	English	☐	☐
Biology	☐	☐	Geography	☐	☐
Chemistry	☐	☐	History	☐	☐
Citizenship	☐	☐	IT	☐	☐
Drama	☐	☐	PE	☐	☐
Design	☐	☐	Physics	☐	☐

5.5 Please give me an example of how the environment is discussed in one of your subjects.

The subject is.....

The example is.....

.....

.....

5.7 Please tell me about other subjects you study in this space.

.....

5.8 Are you a member of a school council? Yes ☐ No ☐

5.9 Are you a member of a youth group? Yes ☐ No ☐

5.10 If you are could you tell me what type of youth group?

.....

5.11 Which of the following environmental issues are you aware of and are you knowledgeable about? Do any of the issues below make you concerned?

	Please tick if:		
	You have heard of this issue	You are knowledgeable about this issue	You ever worry about this particular issue
Chemicals being put into rivers and the sea	☐	☐	☐
Sewage contamination of beaches	☐	☐	☐
Radioactive waste	☐	☐	☐
Destruction of the ozone layer	☐	☐	☐
Oil spills at sea and on beaches	☐	☐	☐
Loss of wildlife and habitats	☐	☐	☐
Litter and rubbish	☐	☐	☐
Overpopulation	☐	☐	☐
Destruction of the rain forest	☐	☐	☐
Noise	☐	☐	☐
Using up non-renewable resources (such as oil or gas)	☐	☐	☐

	Please tick if:		
	You have heard of this issue	You are knowledgeable about this issue	You ever worry about this particular issue
Sewage pollution	☐	☐	☐
Pesticides and fertilizers on food	☐	☐	☐
Acid rain	☐	☐	☐
Dogs mess	☐	☐	☐
Traffic exhaust fumes	☐	☐	☐
The greenhouse effect	☐	☐	☐
Loss of trees and hedgerows	☐	☐	☐
Fumes from factories	☐	☐	☐
Building of houses	☐	☐	☐
Lack of access to countryside	☐	☐	☐
Quality of drinking water	☐	☐	☐

Thank you for taking the time and care to fill in this questionnaire. Before you finish please comment below on how you found filling out this questionnaire, was it difficult? Fun? Boring? Is there any way the questionnaire could be better explained or written? Please feel free to be honest, I appreciate your comments, whatever they are!

.....

.....

.....

Appendix 2. The Questionnaire (Spanish Version)

1.0 Tu, tu hogar y familia

Fecha: / / 2004
Nombre del colegio.....

1.1 Tu nombre.....

1.2 Como quieres ser llamado en este proyecto.....

1.3 ¿Masculino? ☐ ¿Femenino? ☐ **1.4** Fecha de nacimiento ..../..../19..

1.5 ¿En qué ano escolar te encuentras? ☐

1.6 ¿Tienes las siguientes materias?

Matemática ☐ Español ☐ Ciencias ☐

1.7 Cuantas personas mayores de 18 anos viven en tu hogar? ☐

1.8 Cuantas personas menores de 18 anos viven en tu hogar? ☐

1.9 Con respecto al hogar en que vives:

Casa separada de vecinos ☐ Apartamentos ☐

Casa adjunta a 1 vecino ☐ Casa rodante ☐

Casa adjunta a 2 vecinos ☐ Otras ☐

1.10 ¿A que se dedican tus padres o los adultos con los que vives?
.....
.....
..... **1.11** Tu

casa tiene jardín? Si ☐ No ☐

1.12 ¿Tienes lugares de esparcimiento, como parques cerca de tu casa?

Si ☐ No ☐

.

1.13 ¿Si tú tienes un jardín o lugar de esparcimiento cerca de tu casa para que lo usas? Marca con x en las casitas correspondientes usa las casillas necesarias.

- Jugar deportes ☐
- Jugar con amigos ☐
- Animales ☐
- Jardinería ☐
- Nunca lo uso ☐
- ¿Otro, cual? ☐

1.14 ¿Tienes animales en casa?

Si ☐ No ☐

1.15 ¿Cuáles?

- Perro ☐
- Gato ☐
- Pájaro ☐
- Pez ☐
- Conejo/chanchito de india ☐
- Hámster ☐
- Otro ☐

1.16 ¿Estas involucrado/a en la toma de decisiones con los siguientes en tu hogar?

	Si	No	A' veces
Compra de comida diaria	☐	☐	☐
Compra ropa	☐	☐	☐
Que sucede con las desechos del hogar	☐	☐	☐
Que medio de transporte se usa	☐	☐	☐
Ahorro de energía en el hogar	☐	☐	☐
Donde van de vacaciones	☐	☐	☐
Paseos con la familia	☐	☐	☐

1.17 ¿Tu familia compra productos orgánicos?

Sí, siempre ☐ A'veces ☐ No ☐ No se ☐

1.18 ¿Eres tu vegetariano? Si ☐ No ☐

1.19 ¿Alguien en tu familia es vegetariano? Si ☐ No ☐

2.0 Transportes

2.1 ¿Cuantos vehículos hay en tu hogar? ☐

2.2 ¿Cuantos bicicletas hay en tu hogar? ☐

2.3 En este cuadro dime el transporte que tú y tu familia utiliza

	TU				TU FAMILIA			
	Diario	Semanal	Mensual	Nunca	Diario	Semanal	Mensual	Nunca
Auto	☐	☐	☐	☐	☐	☐	☐	☐
Bicicleta	☐	☐	☐	☐	☐	☐	☐	☐
Autobús	☐	☐	☐	☐	☐	☐	☐	☐
Moto bicicleta	☐	☐	☐	☐	☐	☐	☐	☐
Trenes	☐	☐	☐	☐	☐	☐	☐	☐
Caminar	☐	☐	☐	☐	☐	☐	☐	☐

3.0 Medios

3.1 Marca con x las clases de medios que tú y tu familia usa en tu hogar

	TU				TU FAMILIA			
	Diario	Semanal	Mensual	Nunca	Diario	Semanal	Mensual	Nunca
Televisión	☐	☐	☐	☐	☐	☐	☐	☐
periódicos	☐	☐	☐	☐	☐	☐	☐	☐
Radio	☐	☐	☐	☐	☐	☐	☐	☐
Internet	☐	☐	☐	☐	☐	☐	☐	☐
Libros	☐	☐	☐	☐	☐	☐	☐	☐
Revistas	☐	☐	☐	☐	☐	☐	☐	☐
Juegos computadoras	☐	☐	☐	☐	☐	☐	☐	☐

3.2 Que tipo de medios tú piensas es el de mayor veracidad al proveer información, marca solo una casilla.

TV	☐	Internet	☐
Radio	☐	Revistas	☐
Periódicos	☐	Libros	☐

3.3 Cual de lo siguientes programas tus miras, marca una para cada programa

	Diario	Semanal	Mensual	Nunca
Novelas	☐	☐	☐	☐
Noticas	☐	☐	☐	☐
Programas de ciencia	☐	☐	☐	☐
Televisión Realidad	☐	☐	☐	☐
Programas de animales	☐	☐	☐	☐
Musicales	☐	☐	☐	☐
Drama	☐	☐	☐	☐
Programas de vacaciones	☐	☐	☐	☐
Documentales	☐	☐	☐	☐

4.0 Dinero

4.1 ¿Tienes dinero para gastar tu mismo? Si ☐ No ☐

4.2 ¿Cuanto tienes aproximadamente por semana?.....

4.3 ¿Si tienes tu propio dinero, en qué clase de cosas te gusta gastarlo?

.....

.....

.....

4.4 ¿Alguna vez donaste dinero para ayudar al medioambiente? Si ☐ No ☐
¿Si tu lo has hecho, Puedes decirme a quien?
.....

4.5 ¿Alguna vez donaste tiempo para causas del medioambiente? Si ☐ No ☐
4.6 ¿Si tu lo has hecho, Puedes decirme a cuales?
.....

5.0 Tu y el medioambiente

5.1 Puedes indicar cuál de estas organizaciones le es familiar y si ha sido miembro

	Estoy en conocimiento de esta organización	Yo era miembro de esta organización	Miembros de mi familia pertenecen a esta organización
Greenpeace España	☐	☐	☐
Amigos de la tierra	☐	☐	☐
SEO	☐	☐	☐
Aedenat	☐	☐	☐
WWF/ Adena	☐	☐	☐

5.2 Quizás tu eres miembro de otra organización. ¿puedes decirme cual?

.....
.....

5.3 Mira la siguiente tabla y dime como estas diferentes cosas influyen en tus sentimientos con respecto con el medio ambiente.

	Me influyen positivamente	Me preocupan	No se	No me influyen	Totalmente desinteresa
Animales domésticos					
Padres					
Profesores					
Religión					
El Campo					
Educación					
Organizaciones					
TV/Medios					
Viajes a otro país					
Problemas con medio ambiente					
Amigos					
Libros / Revistas					

5.4 ¿Cómo calificarías tu conocimiento de los problemas del medioambiente?
(Marcar con círculo)

Excelente Bueno Mediano No Bueno No Se

5.6 En la siguiente tabla puedes decirme cuales de los siguientes objetivos tu estudias y si el medio ambiente es discutido en las clases

	¿Estudias esta materia?	¿Es el medio ambiente discutido en clase en esta materia?		¿Estudias esta materia?	¿Es el medio ambiente discutido en clase en esta materia?
Arte	☐	☐	Ingles	☐	☐
Biología	☐	☐	Geografía	☐	☐
Química	☐	☐	Historia	☐	☐
Educación Cívica	☐	☐	Computación	☐	☐
Drama	☐	☐	Educación Física	☐	☐
Diseño	☐	☐	Física	☐	☐

5.6 Dame un ejemplo de cómo el medio ambiente es discutido en las clases

Materia.....

Ejemplo.....

.....

.....

5.7 Dime con respecto a otras materias tu estudias

.....

5.8 ¿Eres miembro del consejo de estudiantes? Si ☐ No ☐

5.9 ¿Eres miembro del grupo juvenil? Si ☐ No ☐

5.10 Si te eres miembro de grupos juvenil dime cual

.....

5.11 ¿Cuales de los siguientes temas del medio ambiente tú eres consciente? ¿Alguno de estos temas te preocupan?

	Marca con x si has oído te esto	Marca con x Si te preocupa esto en particular
Químicos puestos en los ríos y el mar	☐	☐
Contaminación de playas con cloacas	☐	☐
Desechos radioactivos	☐	☐
Destrucción de la capa de ozono	☐	☐
Derrame de petróleo en el mar y playas	☐	☐
Perdida de flora y fauna	☐	☐
Desperdicios y basura	☐	☐
Súper población	☐	☐
Destrucción de bosques lluvioso	☐	☐
Ruido	☐	☐
Extinguir recursos no renovables (petróleo – gas)	☐	☐

	Marca con x si has oído te esto	Marca con x Si te preocupa esto en particular
Cantidad de agua	☐	☐
Fertilizantes y pesticidas en comidas	☐	☐
Lluvia ácida	☐	☐
Caca de perro	☐	☐
Gases producíos por transportes	☐	☐
Efecto invernadero	☐	☐
desertización	☐	☐
Gases producidos por fabricas	☐	☐
Construcción de casas	☐	☐
Falta de acceso al campo	☐	☐
Áreas súper desarrolladas	☐	☐

Gracias por tomar el tiempo y dedicación para completar este cuestionario, antes de terminar por favor comente debajo como has encontrado el completar este cuestionario. ¿Fue difícil? ¿Divertido? ¿Aburrido? ¿Hay algunas manera este mismo pueda ser mejor explicado o mejor escrito? Aprovecha esta oportunidad para ser honesto, apreciare sus comentarios sean positivos o negativos.

.....

.....

.....

Appendix 3. Interview and Focus Group Structure (Semi-standardised)

Focus Groups

- Introduce myself
- Explain the project
- Explain the structure of what we are going to do, that I will ask questions to prompt discussion and that the session will be recorded
- Explain issues of confidentiality
- Ask them to introduce themselves to me and to fill in and wear a name badge
- Explain that there are no right and wrong answers, that I am interested in what they have to say, that it is important, I would like everybody here to get the opportunity to speak so please feel free to voice your opinions and if you have any questions you would like to ask me during the session then please feel free to do so

Completion of the questionnaire to be made beforehand and brought to the session

Focus Group Discussion

You are aware that my research involves exploring how young people like yourselves think and feel about the environment. To begin with then I would like you to tell me what you think the term environment is all about and what importance (if any) it has for you.

Place a piece of paper with the word **'environment'** on the table as a reference.

CORE QUESTIONS ARE IN BLACK
1. Environment

What does the term environment mean to you?
Are there particular images or places that you are thinking of

When you hear this term, 'environment' what good things come to mind?
What about more negative or bad things?
Animals, nature?
Pollution?
Personal experiences?

Out of these 'bad' things that you have associated with the term environment, which do you think are the worst and why?
Do you all agree on this?
Is there a difference between things we can lose and live without e.g. animal species and things we cannot live without e.g. clean air and water, ozone layer etc

Do you think it is important to look after the environment? Why do you think this?
For survival?
For pleasure?
For the rights of other species?
For future generations?
For mankind now?
All of the environment or just parts of the environment?

What do they feel has been and will be lost through environmental problems (in their region, country, globally)
Which is more important to them?
Which are more important globally?

What is it about the environment do you cherish?
Why?
Do you think that your friends / family feel the same way?

What aspects of the environment are nationally famous in your country?

Why do you think it is these in particular?
Has it always been this way?

2.0 Now I would like to talk a little about you as a young person.

What do you think is important to young people, what are their interests and their concerns generally?
What about your interests and concerns?
Do you think these are different from older people?
Why are young people interested in these particular issues?

How relevant are environmental issues to you as young person?
Are they part of your everyday life?
As compared to other concerns in your life?
Are they only really thought about as part of your education?
Do you have any direct experiences of environmental problems?

Do you think your point of view/ concerns over the environment are taken seriously?
Who by and how?
Are you concerned enough to want to be heard?
Are young people listened to enough?
How can you make yourself heard?

I would now like to talk to you about your education, and specifically how education about the environment influences you. I know that in the questionnaire there were a couple of questions about this and what you will talk about now will lead on from there

3.0 Education and the Environment

In the questionnaires I asked you in which subjects you discussed the environment.
Can you give me an example of an environmental topic you have been learning about recently?
How did learning about the topic make you feel?
Was it the first time you had heard about this topic?
Were you interested in the topic?

Which of these do you find the most or least enjoyable and why?

Are there any particular teachers or classes that have made you want to learn more about the environment and to protect it?
How did they do this?
Why did this seem special to you?
Do you think teachers are important in getting young people interested about the environment?
Do you think that other people in your class feel the same?

Do you have the opportunity to get outdoors much with your school? Field trips, activities weeks etc. If you do what do you like or dislike about such trips?
Where have you been?
What kind of trip?
Why was it a success?
Why was it different?

Have you ever had the opportunity to do something practical for the environment, for instance getting involved in a recycling scheme or writing to an important person about an environmental issue? What was it like, what did you learn from it?
Was it at school or somewhere else?
Was it challenging?
Would you do it again?
Were your friends or family involved as well?

As young people you spend a lot of your time at school but outside of school there are many other influences like the media and friends which may affect the way you think and feel about the environment. I would like to talk to you about these.

4.0 Media

Do you watch programmes on TV that look at the environment, or at nature?
What do you like about them?
Do they make you want to do stuff to protect the environment?

Do you think that environmental issues get as much media attention as they should? Why do you feel this way?
What sort of programmes do you think gets the most attention on TV?

Are you interested when you see information about environmental issues in the media?
What kinds of issues are likely to interest you?
Can you give me an example?

Which celebrities or public people do you admire and why?
Are there any celebrities who you know actively protect the environment?
What do you like or dislike about them?
Would you like to be like this person when you grow up?

5.0 Friends

What interests do you and your friends have together?
What do you like to do?
Where do you like to go?
Just hang out or do you go to clubs together?
Where do you play?

Do you have any friends who are really interested in the environment?
Do they actively do stuff to protect the environment?
How do you know they are interested?
Is it one friend or a group of them?

Do you ever talk about any environmental issues with friends?
Do you and your friends find these issues worrying?
What sorts of things do you talk about?
Does this happen often?

6.0 Family

What do you do with your families in your leisure time?
Do you get into the outdoors much with your family?
What kinds of places do you go?

What can be done at home to help look after the environment?
Do you do any of these things you have suggested? Why do you /don't you?

What is done at home which is might be harmful to the environment?

Does your family do anything at home to protect the environment?
Energy conservation?
Recycling?
Organic food etc?

What would you do differently if you lived on your own or had grown up?

Now I would like to talk a little bit about **protecting the environment** and practices which help to slow down the results of environmental problems.

7.0 Protecting the Environment

Who or which industries do you think are most responsible for environmental problems?
Why have you chosen these?
Do you all agree?
Who or what industries do you think has the solution to environmental problems?
What could the solutions be?

Who or what industries and businesses set a good example of environmental practice?
Why do you believe this?
Why do you think these people / companies do and others not?
What role do you think the government plays in this?

What is it do you think that makes people act in environmentally friendly ways?
What prevents them?
What are the strongest influences?
Environmentally harmful?
Do people think it is that important at all?

8.0 Solutions

Finally I would like to ask you if you believe that technology will ultimately sort out any severe environmental problems we may have in the future or if you believe that our lifestyles as we know them will have to change?
What do you think will happen?
How will our lifestyles change?
If the solution is scientific, when do you think it will happen?
Are you willing to begin making the changes?
When do you think the severe problems will begin occurring?

Before we finish there are a few more questions I would like to ask you.

Do you believe that you can make a contribution to changing something about the environment on a regional scale, within Devon? What about a national or global scale?
How can you do this?
How effective do you think what you do will be?
Is this action alone or with other people?

Have you ever tried to change a person's perception or view of an environmental problem or issue? What happened?
Did you think they were interested?

Who was it?
Has anyone ever changed your mind over an environmental issue? Can you tell me about any environmental disasters that you remember?
Did this happen in your country?
Why do you remember it?
How did it make you feel?
Did you feel enough was dome to make sure it did not happen again?
What others can you think of?

I would like to thank you for your contributions today. Before we break up is there anything that you would like to ask me about what we have discussed today or about my project in general.

Appendix 4. Letter of Introduction to Students and Consent Form (English version)

University of Plymouth
Drake Circus
Plymouth
Devon
PL84AA

Your school contact is:

October 2003

Dear Student

I am writing to thank you for agreeing to take part in an interview/focus group for my research project 'From Environmental Awareness to Action'.

I will be coming to your school soon to conduct the interviews and focus groups with you. The things that we will talk about will be to do with the environment, what you think it is and how you feel about environmental issues. We will also talk a little bit about environmental education, who you think is responsible for environmental problems and what kinds of behaviours can solve the effects these problems can have.

I am very interested in your opinions and feelings about different environmental issues; whatever your opinion is. There are no right or wrong answers to the questions I will ask and the topics we will talk about. Please do not think of this as a test – it most certainly is not!

Before the interview sessions you will be asked to fill out a questionnaire which is also part of the project. This will take you about 20 minutes and should be returned to your teacher.

You do not need to bring anything with you to the session. If you find you cannot attend then please let your school contact know as soon as possible.

Please note that you will only be able to take part in the study if you have returned the permission slip from your parents and the one below which you sign to the school contact named at the top of this letter.

I am really looking forward to meeting you, and thank you again for your interest and for getting involved.

See you soon,

Jennie Winter

I (name).....consent to taking part in the research project 'From Environmental Awareness to Action' conducted by the University of Plymouth.
Signature of student.....
Date.....

Appendix 5. Letter of Introduction to Parents and Consent Form (English version)

NAME OF SCHOOL

September 2003

My contact details
Office:
Mobile:

Your School Contact is:
_____

Dear Parent/ Guardian

I write to request your son / daughter's assistance in a research programme I am currently undertaking.

I am a doctoral student with the School of Geography at the University of Plymouth and am researching young people's perceptions of and engagement with environmental issues. The project compares young people's experiences in the UK and Spain and seeks to highlight similarities and differences between young people's environmental experiences in these two countries.

I am looking for students who would be interested in taking part in my study. The research will require your son/daughter to complete a questionnaire and take part in either an interview, which I will conduct, or take part in a discussion with up to seven other students and myself. In either case the session will last around an hour. This will take place during the autumn term of this school year.

Any information and data received will be treated in accordance with the University's Ethical Research Code a copy of which is held at each school participating in the study. I am also happy to send you a copy if you wish to see one. Each school will also hold a copy of the questions I will ask and I will be conducting a review session with all participating students to inform them of how their contribution has helped my work. Your son / daughter's contribution will remain confidential; a pseudonym of their choice will be used to retain anonymity and only those at the university who are working on the project will have access to the interview transcripts.

If you would like more detailed information about this project please feel free to contact me. My contact details are at the top of this letter.

I hope your son / daughter is able to participate in this research. Their opinions are extremely important and this is a great opportunity for them to take part in discussion that explores their feelings and experiences of environmental issues. Please fill out and return the slip below to the school contact named at the top of this letter.

Yours Sincerely,

Jennie Winter

I give permission for my son / daughter (name).....
To participate in the research project 'From Environmental Awareness to Action' conducted by the University of Plymouth.
Name of Parent/ Guardian.....
Signature of Parent / Guardian.....
Date.....

Appendix 6. Letter to Spanish Schools Requesting *Participation*

Appendix 4 Letter to Request School Participation in Research (Spain only)

Dirección del escuela

Fecha
Estimado Director/a:

Linea Directa:
0044 1752
E mail:
Jennie.winter@plymouth.ac.uk

Le he escrito en Julio del corriente año, y al no recibir respuesta le reitero mi pedido.

Le escribo con la intención de solicitar su ayuda con el proyecto de investigación que actualmente estoy haciendo.

Soy una estudiante de doctorado de la escuela de geographia en la universidad de Plymouth, y estoy investigando my tesis en 'la percepción de jóvenes y / o la relación con los problemas del medio ambiente". El proyecto compara experiencias en el Reino Unido y España. Y apunta a resaltar las similitudes y diferencias entre las experiencias ecológicas de la gente joven de estos dos países.

Yo estoy buscando grupos escolares que estén interesados en participar en mi investigación. Estoy interesada en dos grupos de edades, 13-14 y en 17-18 anos.

La investigación incluirá breve cuestionarios, entrevistas individuales (1 hora de duración). Trabajos y debates grupales 8 estudiantes por grupo 1 hora de duración).

Yo quisiera idealmente poder conducir la investigación con alrededor de 8 estudiantes de cada grupo de edades y una entrevista / trabajo grupal en su establecimiento.

Estoy planeando realizar las entrevistas, en España entre mediados de febrero y mediados de Mayo de 2004. Estipulando la fecha que sean de su conveniencia.

Toda información recibida y contacto con estudiantes y docentes de su establecimiento, será tratada de acuerdo con el código de ética de investigación de la Universidad. Y una copia del mismo le será enviada si ustedes están interesados en formar parte.

Estoy en conocimiento que consentimiento de los padres o tutores de los alumnos será necesario para cada alumno que desee tomar parte. Para los cuales proveeré una carta de introducción para estudiantes y padres, en la cual pediré autorización de los mismos.

También proveeré una copia de los cuestionarios que intento presentar a los estudiantes. Estoy dispuesta a realizar una presentación ante todos los alumnos participantes en la cual les informare de como su contribución ayudara a mi proyecto de investigación.

Yo poseo el titulo TEFAL para ensenar ingles como lengua extranjera, a cambio de su cooperación con mi proyecto, me ofrezco para dar clases de conversación en Ingles.

Si sudeste dispuesto/a a que realice el proyecto en su establecimiento, podría un responder me a la dirección de la Universidad en el encanecimiento de esta carta.

Y le enviare un folio, el cual incluiría ejemplos de los siguientes:
Una copia del código de ética de la Universidad.
Una copia del cuestionario que utilizaré con los estudiantes.
Una copia de las preguntas que tomare como base para las entrevistas y debates.

Apreciare respuesta para fines de Noviembre 2003.

Desde ya muchas gracias.

Appendix 7. Letter accompanying Questionnaires to Spanish Schools

School of Geography
University of Plymouth
Drake Circus
Plymouth
Devon
PL48AA
United Kingdom

Fecha

Estimado

Le escribo para enviarle a usted los cuestionarios de entrevistas y las preguntas del debate, que yo desearía utilizar para con los estudiantes, cuando visite su colegio.

Podría asegurarse que usted, esta de acuerdo con los mismos, y decirme si hay algo que prefería cambiar u omitir. También incluyo en ejemplo de las cartas de consentimiento de alumnos y autorización de padres.

Cuando los haya examinado, podría informarme si son adecuados. También necesitaría que me confirme cuales de los grupos de estudiantes usted me puede proveer acceso (mire pagina adjunta).

Cuando yo reciba su respuesta, yo le enviare los cuestionarios y cartas necesarias y fecha propuesta le visita al colegio apreciaré su respuesta a la brevedad. Ya que desearía enviarle cuestionarios y cartas anterior a navidad.

Nuevamente le agradezco su parte y estoy ansiosa de realizar mi investigación en su colegio,

Los Saluda, atentamente.

Jennie Winter

Appendix 8. Letter of Introduction to Parents and Consent Forms (Spanish version)

Dirección de Escuela
Tu contacto en el colegio:

Fecha:

School of Geography
University of Plymouth
Drake Circus
Plymouth
Devon
PL48AA
United Kingdom

Estimados padres o tutores

Le escribo para solicitarle la colaboración de tu hijo/a en el programa de investigación que estoy llevando a cabo.

Soy estudiante de doctorado de la escuela de geografía de la universidad de Plymouth en el Sur-Oeste de Inglaterra y estoy investigando la percepción de los jóvenes con relación al medioambiente.
El proyecto busca resaltar las similitudes y diferencias entre las experiencias que los jóvenes ingleses y españoles. Hayan tenido con respecto al medioambiente.

Estoy buscando estudiantes que estén interesados en tomar parte de este proyecto. La investigación implica que los estudiantes completen un cuestionario y tomen parte de una entrevista o debate con otros 7 estudiantes y yo en cualquiera de los dos casos la sesión durara una hora aproximadamente y se llevara a cabo durante Febrero – Abril 2004.

Toda información y datos recibidos serán tratados de acuerdo al código ético de investigación de la universidad de Plymouth. Copia del cual será enviado a cada escuela participante del proyecto. Puedo enviarle una copia a usted, Si así lo desea. Cada colegio tendrá una copia de las preguntas que formulare. La contribución de su hijo/a permanecerá de manera confidencial y un seudónimo de su elección será usado para mantener su anonimato y solo aquellas personas de la universidad que han trabajado en el proyecto tendrán acceso a la información recavada de las entrevistas.

Espero que su hijo/a puede participar en este proyecto. Su contribución es sumamente importante y esta es una gran oportunidad para que pueda expresar sus vivencias y experiencias relacionadas con el medioambiente.

Por favor complete con sus datos en el talón de la pagina y envíelo al contacto en el colegio que figura al comienzo de esta carta,

Los Saluda, atentamente.

Jennie Winter

Autorizo a mi hijo/a (Nombre) _____
A tomar parte en el proyecto de investigación' de conciencia medio ambiente a acción' conducido por la universidad de Plymouth, Reino Unidad.
Nombre de Padres/Tutores:_____
Firma de Padres / Tutores:_____
Fecha:_____

Appendix 9 Letter of Introduction to Students and Consent Forms (Spanish version)

Dirección de Escuela
Tu contacto en el colegio:

Fecha:

School of Geography
University of Plymouth
Drake Circus
Plymouth
Devon
PL48AA
United Kingdom

Estimado estudiante,

Le escribo para agradecerle por tomar parte en la entrevista o debate grupal para mi proyecto de investigación.

Yo estaré visitando su colegio muy pronto para conducir las entrevistas o debates con usted. Las cosas que hablaremos serán con relación al medioambiente que es lo que es el medioambiente, y cuales son los problemas que el medio ambiente presenta también hablaremos con respecto a educación medioambiental, quien piensas es responsable por los problemas que el medio ambiente presenta y que clase de comportamiento puede solucionar los efectos que estos problemas podrían tener.

Yo estoy muy interesada en sus opiniones y sentimientos con respecto a diferentes temas del medioambiente cualquiera sea tu opinión no ahí respuestas correctas o incorrectas a las preguntas que yo haré y con los temas que discutiremos
Por favor, no pienses en este cuestionario como en un examen – ya que no lo es!
Antes de la entrevista o el debate, se le pedirá que compete un cuestionario, el cual también formara parte del proyecto, tomara 20 minutos y debe de ser entregado a su docente tú no necesitaras nada con tigo, en las sesiones y de no serle posible para asistir hágaselo saber a su contacto en el colegio lo antes posible.

Por favor note que solo le será posible tomar parte en este proyecto, si ha retornado el permiso de sus padres autorizándolo a tomar parte y el que esta al pie de esta pagina firmado por usted alumno y entregarlo a su contacto nombrado en la cabeza de le pagina.
Yo espero poder conocerle y le agradezco desde ya su interés en tomar parte
Los saludo, atentamente

Yo (nombre) _____ acepto tomar parte en el proyecto de investigación'de conciencia medio ambiente a acción' conducido por la universidad de Plymouth, Reino Unido.
Firma de estudiante:_____
Fecha:_____

Appendix 10. Description of Schools

Table 1. School 1 Devon

School Code	1
Size of school (no of students)	2230
Type of school	Secondary school (11-18yrs)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Geography
Student Sample	Year 10 Geography students
Students selected or self selected	Selected and self-selected
Comments	School located in a town (20000 people). Students from 100km² dispersed rural and urban area. % of students gaining 5+ GCSE's including maths and English 56%.

Table 2. School 2 Devon

School Code	2
Size of school (no of students)	1380
Type of school	Secondary School (11-18 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Sixth Form
Student Sample	Year 12 students various subjects
Students selected or self selected	Selected
Comments	School located in suburbs of Plymouth. % of students gaining 5+ GCSE's including maths and English 20%.

Table 3. School 3 Devon

School Code	3
Size of school (no of students)	1365
Type of school	Secondary School (11-16 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Year 9
Student Sample	Year 9 students various subjects
Students selected or self selected	Self-selected
Comments	School located in inner city of Plymouth. % of students gaining 5+ GCSE's including maths and English 24%.

Table 4. School 4 Devon

School Code	4
Size of school (no of students)	800
Type of school	Secondary School (11-18 years)
Sex (mixed/ girls/boys)	Boys
Gatekeeper	Head of Geography and Head of Sixth Form
Student Sample	Years 9 and 12/13 students various subjects
Students selected or self selected	Self-selected
Comments	School located in suburbs of Plymouth. % of students gaining 5+ GCSE's including maths and English 47%.

Table 5. School 5 Devon

School Code	5
Size of school (no of students)	1219
Type of school	Secondary School (11-16 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Year 10
Student Sample	Year 10 various
Students selected or self selected	Selected and self-selected
Comments	School located in suburbs of Plymouth. % of students gaining 5+ GCSE's including maths and English 24%.

Table 6. School 6 Devon

School Code	6
Size of school (no of students)	1228
Type of school	Secondary School (11-18 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of RE
Student Sample	Years 9 and 10 various
Students selected or self selected	Selected and self-selected
Comments	School located in suburbs of Plymouth. % of students gaining 5+ GCSE's including maths and English 45%.

Table 7. School 7 Devon

School Code	7
Size of school (no of students)	2519
Type of school	College of Further Education (16+ years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Geography
Student Sample	Geography GCSE and A-level
Students selected or self selected	Selected
Comments	College located in inner city Plymouth.

Table 8. School 8 Devon

School Code	8
Size of school (no of students)	896
Type of school	Secondary Grammar School (11-18 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Year 10 and Headmaster
Student Sample	Years 9 and 10 various subjects
Students selected or self selected	Selected and self-selected
Comments	School located in suburbs of Torbay. % of students gaining 5+ GCSE's including maths and English 95%. School has specialism in ESD and has a sustainability policy entitled 'Force for Change' in place. The school has also undertaken GAP initiatives and is working towards the Eco-school award.

Table 9. School 9 Devon

School Code	9
Size of school (no of students)	1372
Type of school	Secondary School (11-16 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Year 10
Student Sample	Year 10 various
Students selected or self selected	Selected and self-selected
Comments	School located inner city of Exeter. % of students gaining 5+ GCSE's including maths and English 39%.

Table 10. School 10 Devon

School Code	10
Size of school (no of students)	2519
Type of school	College of Further Education (16+ years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Animal Science lecturer
Student Sample	Animal Behaviour students
Students selected or self selected	Selected
Comments	School located in suburbs of Plymouth. % of students gaining 5+ GCSE's including maths and English 24%.

Table 11. School 11 Malaga

School Code	11
Size of school (no of students)	1200
Type of school	Public Secondary School (11-18 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Headmaster
Student Sample	Year 12 various
Students selected or self selected	Selected and self-selected
Comments	School located in town of Antequera

Table 12. School 12 Malaga

School Code	12
Size of school (no of students)	1500
Type of school	*Concertado* Primary and Secondary School (3-18 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Year 9
Student Sample	Year 9 various
Students selected or self selected	Selected
Comments	School located in suburb of Malaga

Table 13. School 13 Malaga

School Code	13
Size of school (no of students)	1100
Type of school	Public Primary and Secondary School (3-18 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of Biology and Sciences
Student Sample	Year 12 Biology students
Students selected or self selected	Selected and self-selected
Comments	School located in suburb of Malaga

Table 14. School 14 Malaga

School Code	14
Size of school (no of students)	800
Type of school	*Concertado* Secondary School (11-18 years)
Sex (mixed/ girls/boys)	Mixed
Gatekeeper	Head of English
Student Sample	Year 9 and 10 English students
Students selected or self selected	Selected and self-selected
Comments	School located in suburb of Malaga