Towards Sustainable Consumption: Understanding the Adoption and Practice of Environmental Actions in Households

Anna Kathrine Scott

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

Management School
University of Sheffield

June 2009

Abstract

Securing public participation in environmental actions (EAs) such as recycling as a means of making progress towards sustainable consumption is a central issue in UK environmental policy. Participation in EAs has typically been studied from the individual perspective, thereby ignoring the relevance of the social context of the household. This thesis advances understanding of the adoption and practice of EAs from the household perspective. A qualitative research approach is taken, utilising focus groups with 29 households within a constructivist grounded theory methodology.

In terms of theoretical contributions, the unlinked literatures on participation in EAs and household decision making are integrated in light of the research findings resulting in a conceptual framework of the adoption and practice of EAs in households which is grounded in the data. This framework considers EAs in isolation and patterns across EA repertoires and is applicable to the variety of commonly-promoted EAs and household types and different levels of engagement in EAs. Elements of the framework include the multiple units which drive EA adoption and are responsible for EA practice; the situational, household and individual characteristics which shape these units; the multiple routes to EA practice and their tentative differentiation in terms of desirability from a policy perspective; factors facilitating the maintenance of repetitive EAs; types and means of socialisation influence from a leader to other individuals; from where and how knowledge for action is acquired and transmitted through the household; and communication within the household about EAs. Particular empirical contributions include the recognition of the decoupling of attitudes towards an EA and behaviour as a result of factors pertaining to the social context of the household; a new understanding of motivation to engage in EAs relating to how a leader's motivation is established in the first instance and then transferred to other household members; and the recognition that specialised roles relating to EA adoption and practice may be taken up gradually.

In terms of methodological contributions, the literatures on focus groups and qualitative family research are integrated to coin the term 'household focus group'. To produce the necessary detail, an original interview activity involving the diagrammatic representation of EA adoption and practice is developed, which is extended into an original means of data analysis involving detailed visual representations of the processes within the household.

Acknowledgements

Firstly, I offer my sincere gratitude to my supervisors – Dr Caroline Oates of the Management School, University of Sheffield and Dr William Young of the School of Earth and Environment, University of Leeds. I am indebted to them for their unwavering patience, support and helpful guidance throughout my doctoral studies. Each has contributed to the development of my work in different but complementary ways, which I have valued and has been much to my benefit. I would also like to thank Dr Seonaidh McDonald for her brief but much appreciated supervision at the beginning of the project, and Prof Frank Birkin for his useful supervision during Dr Oates' maternity leave. I am also extremely grateful to Dr Oates, Dr Young and Dr McDonald for entrusting me with a White Rose Studentship and I thank the White Rose University Consortium (Universities of Leeds, Sheffield and York) for this financial support.

I thank the administrative and academic staff of the Management School for offering a supportive, accommodating and stimulating working environment. My thanks also go to all my doctoral student friends, but particularly Julie Alevizou, Athanasia Tziortzi and Moritz von Schwedler for taking such a helpful interest in my work. I also thank the academic staff and doctoral students of the Sustainability Research Institute, School of Earth and Environment, particularly Louise Ellis and Lucie Middlemiss. Being a member of these two different institutions has been to my advantage.

I thank all of the households who responded to my call but particularly those who participated in the project as without these households there would be no thesis.

My thanks also go to Alison Brown for providing me with valued feedback on my work and my colleagues at Waste Watch for their support and fresh perspectives.

I am grateful to my family for their continued love and support and particularly my parents for instilling me with all the qualities a doctoral student needs. Last but certainly not least, I thank Tim who has offered a much-needed limitless supply of love, care, interest and support, my gratitude for which is impossible to express.

Contents

List of figures

List of tables

Chapter 1

Setting the research agenda

Public participation in environmental actions is an important element of the necessary shift towards sustainable consumption. This thesis advances understanding of the adoption and practice of environmental actions in households. This chapter sets out the research agenda and begins with discussion of the research opportunity – a gap in the literature concerning participation in environmental actions from the *household* as opposed to the *individual* perspective. The research questions are then outlined. This is followed by delineation of the terms 'environmental actions', 'sustainable consumption' and 'households'. A reflexive introduction to the researcher is then provided before the chapter concludes with an overview of the thesis structure.

Identifying the research opportunity

> *"The message...is clear and urgent: we have been exceeding the Earth's ability to support our lifestyles for the past twenty years and we need to stop. We must balance our consumption with the natural world's capacity to regenerate and absorb our wastes. If we do not, we risk irreversible damage"* (WWF et al., 2006, p.1).

This passage is taken from WWF's *Living Planet Report 2006*, the environmental organisation's biennial report on the state of the natural world. Based on the latest figures for 2005, *Living Planet Report 2008* documents that humanity's Ecological Footprint (a measure of human impact upon the planet's natural resources) has more than doubled since 1961, and now exceeds the planet's ability to regenerate by about 30 per cent (WWF et al., 2008). Within this context, shifting lifestyles towards an environmentally sustainable level of consumption has become a central issue in UK environmental policy circles in recent years:

> *"Lifestyle change is fast becoming a kind of 'holy grail' for environmental and social policy. How can we persuade people to behave in more environmentally and socially responsible ways? How can we shift people's transport modes, appliance choices, eating habits...holiday plans, lifestyle expectations (and so on) in such a way as to reduce the damaging impact on the environment and on other people? How can we encourage 'sustainable living' and discourage unsustainable living? These questions lie at the heart of the emerging policy debate"* (Jackson, 2006, p.7-8).

The UK government's 'quick guide to greener living' advocates actions in five areas (Directgov, 2008):

1. Save energy and water at home: reduce indoor temperature, buy energy and water efficient appliances, install insulation
2. Getting around: buy a fuel efficient car, reduce car use, reduce air travel
3. Eating and drinking: buy fresh and seasonal food, reduce food waste
4. Recycling and reducing waste: reuse and repair, recycle, compost
5. Greener shopping: reuse shopping bags, buy recycled, buy eco-labelled products, e.g. sustainable fish, sustainable wood, peat-free compost

Public participation in such 'private-sphere environmentalism' (Stern, 2000) or 'environmental actions' (hereafter abbreviated to 'EAs') has been the focus of much research, but this has typically taken the *individual* rather than the *household* perspective. The household perspective on EA participation represents an important gap in the literature, a gap which this thesis addresses.

The field of research into EA participation (which spans many social science disciplines) has produced a voluminous literature and two main bodies of knowledge. The 'determinants of behaviour' body of knowledge represents an understanding of the factors which influence behaviour and the relationships between these factors. Strands of work include:

- Attempts to identify the socio-demographic and attitudinal characteristics of the recycler, e.g. Vining and Ebreo (1990), McDonald and Ball (1998), and the green consumer, e.g. Roberts (1996), Straughan and Roberts (1999).
- Assessment of the influence of a wider range of factors on behaviour without the use of a theoretical model of behaviour, e.g. Oskamp et al. (1991), Gamba and Oskamp (1994).
- Application of existing social-psychological models of behaviour for explaining and predicting behaviour, e.g. Davies et al. (2002), Bamberg and Schmidt (2003), and formulation of EA-specific models of behaviour, e.g. Ölander and Thørgersen (1995), Stern et al. (1999).
- Qualitative investigation of EA participation and non-participation, e.g. Hallin (1995), Holdsworth (2003).

The 'behaviour change' body of knowledge represents an understanding of how to most effectively bring about voluntary behaviour change. Strands of work include:

- Assessment of the effectiveness of various intervention strategies through field experiments with quasi-experimental designs, e.g. DeLeon and Fuqua (1995), Brandon and Lewis (1999).
- Qualitative investigation of responses to intervention strategies such as mass media information campaigns, e.g. Hinchliffe (1996), and behaviour change schemes such as Global Action Plan's *Action at Home* program, e.g. Hobson (2002; 2003).
- Policy orientated work which has drawn upon various behaviour change theories in order to offer insights into how to increase EA participation, e.g. Jackson (2005), Darnton (2008).

These strands of work have generally taken the individual as the unit of analysis. Empirically, the individual is typically the participatory unit, although this approach does not necessarily preclude a household perspective. More importantly, most work ignores that EA adoption and practice takes place in the social context of the household:

> *"Because households are units of interacting and interdependent personalities, who have a common theme and goals, who have a commitment over time and who share resources and living space, they form a specific context for decisions and activities in everyday life and consumption"* (Moll and Groot-Marcus, 2002, p.84).

Åberg et al. (1996) is one of the few studies which has examined EA (composting) participation from the household perspective:

> *"Many of the daily activities in the household are heavily routinised. When members of the household are exposed to new and alternative ways of handling their daily problems, active and conscious decision making is necessary. Participation in home composting represents a situation where active decision making and consideration of one's present routines are necessary. Decision making in households comes about by means of complex processes of interaction and negotiation between the members as well as through exchanges of information and goods between the household and its environment. Source-separation and composting in households with more than one member requires not only agreement about the decision but also enduring, action-oriented co-operation between the members of the family"* (Åberg et al., 1996, p.48).

Thus, taking the household as the unit of analysis naturally leads to two areas of focus. Firstly, EA adoption, i.e. the decision making processes leading to the practice of one-off EAs or the initiation of repetitive EAs. Moving on from the 'attitude-behaviour gap' (i.e. the discrepancy between environmental concern and EA participation), the contemporary position of the determinants of behaviour body of knowledge is that behaviour is influenced by a broad range of internal and external factors which may vary greatly across EAs and individuals, and interact with each other (Stern, 2000;

Barr, 2002; Kollmuss and Agyeman, 2002; Jackson, 2005; Darnton et al., 2006). For example, Stern (2000) refers to: attitudinal factors including general environmentalist disposition and behaviour-specific norms and beliefs; personal capabilities including financial resources and behaviour-specific knowledge and skills; contextual factors including appropriate infrastructure and social norms; and habit and routine. While some studies have made reference to the importance of the influence of household members within discussion of social norms, e.g. Kok and Siero (1985), Ewing (2001), it is more common for work to ignore household members as social references in relation to EAs. However, household members may *"suggest, support, question, oppose or in other ways influence household participation in these practices"* (Grønhøj, 2006, p.491).

The behaviour change body of knowledge indicates that behaviour change is more effectively negotiated at the group rather than the individual level, as highlighted by the UK government's sustainable development strategy (HM Government, 2005). However, within such work, references to the household – arguably the primary group that individuals are part of – are virtually non-existent. One exception is Hobson (2001) who suggested that household 'politics' is an important determinant of EA adoption and called for work in this area. The information deficit model of environmental action with its assumption that simply educating people about environmental issues will automatically result in participation in EAs (Burgess et al., 1998; Kollmuss and Agyeman, 2002) has been rendered largely redundant by the behaviour change body of knowledge. Nonetheless, knowledge of what to do and how to do it (what Schahn and Holzer (1990) termed 'knowledge for action') remains a prerequisite to EA participation (Hines et al., 1987; Pieters, 1991; Barr, 2007). In relation to this, Pennartz and Niehof (1999, p.35) called for work on the way household members *"interact and communicate about matters of sustainability, and on the way households operate as sources of information"*. However, household decision making in relation to EA adoption remains relatively unexplored.

Taking the household as the unit of analysis also raises EA practice as an area of focus, particularly its nature (as for example, habitual or routinised), and the division of responsibility within the household. This latter issue is particularly relevant to recycling which consists of a series of tasks constituting a process rather than a single act (Pieters, 1991; Dickinson, 1994; Oates and McDonald, 2006). Dickinson (1994), Oates and McDonald (2006) and Carlsson-Kanyama and Lindén (2007) investigated the relationship between gender and the division of EA responsibility within the household.

However, despite this work and calls for further work (Pennartz and Niehof, 1999; Oates and McDonald, 2006), there remains much to explore in relation to EA practice.

In summary, the EA participation literature has focused on the unit of the individual, *"often treating him/her as an actor dissociated from everyday life"* (Burgess, 2003, p.83). Although a number of authors have argued the case for the household perspective (Åberg et al., 1996; Pennartz and Niehof, 1999; Hobson, 2001; Judkins, 2004; Grønhøj, 2006), the impact of household dynamics on EA adoption and practice remains relatively unexplored (Grønhøj, 2006). Some studies have squarely taken the household as the unit of analysis (Åberg et al., 1996; Shanahan, 2003; Judkins, 2004; Grønhøj, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007), but they are limited in scope and number and no studies are UK-based. Thus, the aim of this thesis is to advance understanding of EA adoption and practice from the *household* as opposed to the *individual* perspective on the basis that such insights can be used to inform behaviour change strategies.

Investigating EA adoption and practice in households can be approached in a number of ways. The first consideration is the context in which to examine EA adoption which equates to behaviour formation and behaviour change. Behaviour change has predominantly been studied in relation to specified intervention strategies. As such, research participants have been exposed to an intervention strategy and either the extent of behaviour change or why the strategy changed (or failed to change) behaviour has been examined. In order to advance understanding of behaviour formation and change in a natural setting, this thesis uses the less utilised approach of focusing on households which are already participating in a particular EA and examining *from their perspective* the circumstances surrounding EA adoption, e.g. Hallin (1995), Maiteny (2002).

The second consideration is the number and range of EAs to focus on. The vast majority of studies within the EA participation literature focus on a particular EA (typically recycling) or a limited selection of EAs. Given the amount of attention paid to recycling, the lack of work on the adoption and practice of this EA from a household perspective is even more apparent. Therefore, this thesis pays particular attention to recycling/composting. However, environmental policy circles are looking to effect behaviour change across lifestyles rather than just in specific sectors, as illustrated by the funding criteria of Defra's (2008a) Environmental Action Fund in 2005-08. The sectors that households are commonly encouraged to address are waste management, energy conservation, transport behaviour, water conservation, and green consumerism

as illustrated by the (albeit now defunct) *Are You Doing Your Bit?* campaign (DETR, 2000), Global Action Plan's (2008) ongoing behaviour change programme *EcoTeams*, and Defra's (2008b) *Framework for Pro-Environmental Behaviours*. As such, there is a need for holistic work. Therefore, this thesis also examines the adoption and practice of other EAs across the five sectors, *and* patterns of adoption and practice across EA repertoires, i.e. the collection of EAs evident in the household.

Research questions

This thesis aims to advance understanding of EA adoption and practice from the household perspective. Two research questions stem from this aim and the previous discussion which have been continually refined throughout the research process.

1. **How are environmental actions adopted in households?**

This question relates to the decision making processes leading to the practice of one-off EAs or the initiation of repetitive EAs, including what prompts adoption and from where and how knowledge for action is sourced and how it is transmitted through the household.

2. **How are environmental actions practiced in households?**

This question relates to how EAs are actually carried out including the nature of these acts and the division of responsibility within the household.

Both research questions are addressed with respect to: (a) a variety of lone EAs (i.e. EAs considered in isolation) although with particular emphasis on recycling/composting; and (b) EA repertoires. The research questions are addressed through a qualitative research approach utilising household focus groups within a constructivist grounded theory methodology.

Delineating the research terms

This section delineates the terms 'environmental actions', 'sustainable consumption' and 'households'.

Environmental actions

The number of EAs which could be focussed on is extensive; indeed, one of the growing collection of books on how to lead a greener lifestyle offers 1001 actions (Yarrow, 2007). Therefore, a particular set of EAs are focused on, which was developed and refined throughout the research process. The literature review included

work on participation in any EA. At the start of the main data collection period (around September 2004) the promotional material of various information-led initiatives from both governmental and non-governmental bodies in the public arena at that time was examined in order to draw up a set of EAs to focus data collection on. Such sources included the *Are You Doing Your Bit?* campaign brochure (DETR, 1999), the *Is Your Home Behaving Badly?* campaign brochure (Energy Saving Trust, 2002), a guide to waste and recycling (Friends of the Earth, 2003), and Yorkshire Water's online guide to saving water in the home (see Yorkshire Water (2008) for a recent version). Early in the data collection process the set was streamlined further for practical reasons resulting in the EAs shown in Table 1. There is much overlap between these EAs and the headline behaviour goals in Defra's (2008b) *Framework for Pro-Environmental Behaviours*. With respect to the classification of EAs in Table 1, it is acknowledged that while particular EAs have been classified under the sectors of waste management, energy conservation, transport behaviour, or water conservation (in keeping with the way in which EAs are commonly promoted), they could also be classified under green consumerism as they involve a purchase, e.g. buy goods made from recycled materials, buy energy saving lights bulbs, etc. (Barr, 2003). Classification of EAs by activity type, i.e. recycling/composting, repeated acts, repeated purchases, and one-off acts/purchases, is more theoretically useful. Support for classifying EAs in this manner will be outlined in the following chapter (p.33).

Table 1. The environmental actions of focus classified by sector and activity type.

Activity type		Sector				
		Waste management	**Energy conservation**	**Transport behaviour**	**Water conservation**	**Green consumerism**
	Recycling/ composting	• Recycle using kerbside collection services/bring banks • Home compost garden and kitchen waste				
	Repeated acts	• Reuse items	• Reduce temperature of home environment • Turn lights off in unused rooms • Turn appliances off rather than on standby • Heat only the water needed in kettle • Use washing machine on low temperature and with full loads	• Walk, cycle or use public transport instead of using car • Reduce car use in other ways, e g. car sharing • Drive fuel efficiently	• Take a shower instead of a bath • Turn off tap when brushing teeth	
	Repeated purchases	• Avoid buying goods with excess packaging • Buy goods made from recycled materials, e.g. toilet paper	• Buy energy saving light bulbs			• Avoid buying tropical timber and buy timber and paper from sustainable sources • Avoid buying peat • Avoid buying fish from unsustainable stocks and buy fish from sustainable stocks • Buy 'environmentally friendly' cleaning products • Buy organic food • Avoid buying food with air miles and buy locally produced/British food
	One-off acts/purchases	• Use Mail Preference Service to reduce junk mail	• Buy energy efficient appliances • Install loft and/or cavity wall insulation • Install double or secondary glazing • Switch to green electricity supplier • Install solar power system	• Buy a fuel efficient car • Avoid air travel	• Install duel flush toilet (and use short flush) • Install water saving device in toilet • Install a water butt	

There are two points to note about the EAs shown in Table 1. Firstly, while all the EAs are promoted as environmental in nature, particular EAs may be undertaken for non-environmental motives, such as saving money and health benefits (Barr and Gilg, 2003). Kollmuss and Agyeman (2002) defined EAs in terms of the conscious minimisation of environmental impacts. However, it can be argued that as long as households are participating in EAs, their motives are less important (although this position is increasingly being challenged, see Crompton (2008) for example). Therefore, environmental and non-environmental motives are of interest.

Secondly, the EAs predominantly equate to consuming more efficiently rather than consuming less. The dominant institutional perspective on sustainable consumption, which is broadly aligned to the ecological modernisation of consumption, emphasises efficiency-based EAs and regards the consumer as the driving force of market transformation (Seyfang, 2005; Hobson, 2006; Seyfang, 2006), a position which reflects the seemingly unquestionable position of economic growth and the acquisition of consumer goods in contemporary politics (Cohen, 2007). The alternative perspective on sustainable consumption advocates a wholesale rethinking of affluent lifestyles and material consumption. Although this perspective is beginning to be discussed in mainstream forums, see for example Jackson and Michaelis (2003), it remains at the fringes of environmental policy (Seyfang, 2005). Therefore, government and non-governmental organisations have focused on promoting efficiency-based EAs rather than the rejection of consumption. Furthermore, and arguably in response to what the public has been 'asked to do', the EA participation literature has generally focused on efficiency-based EAs which are thus also a logical focus for this thesis.

Sustainable consumption

It is pertinent to consider the extent to which participation in the EAs of focus represents 'environmentally sustainable living'. Although what is sustainable may be regarded as a normative rather than a technical question, e.g. Seyfang (2005), sustainable consumption is increasingly being framed in more absolute terms through the use of the Ecological Footprint (EF), which is both an indicator of the environmental impacts of consumption and a public awareness and education tool (Barrett et al., 2005). The EF provides a measure of *"the land and water area that is required to support indefinitely the material standard of living of a given population, using prevailing technology"* (Chambers et al., 2000, p.177). WWF-UK et al. (2006) calculated the UK's EF to be 5.4 global hectares per person (gha/cap) compared with a global average of 2.2 gha/cap and an available global biocapacity of 1.8 gha/cap. In simple terms, *"if everyone on Earth had the same consumption patterns as the average*

UK resident, humanity would need the resources of three planets to support itself" (WWF-UK et al., 2006, p.4). Thus, the challenge of sustainable consumption from a UK perspective is a shift from three planet living to 'one planet living', the latter representing an environmentally sustainable consumption level and a 'fair share' of the world's natural resources (HM Government, 2005; WWF and BioRegional, 2008).

Under the common form of EF analysis, consumption by government, services such as education and hospitals, and capital investment is attributed to individuals on a per capita basis. The environmental impact of such consumption represented just under 30 per cent of the EF of the average UK resident in one analysis (WWF-UK et al., 2006). Thus, a substantial component of an individual's EF is beyond their immediate sphere of influence and requires government action (James and Desai, 2003; Francis and Wheeler, 2006). With respect to the remainder of an individual's EF, it is commonly noted in the literature that individuals and households are 'locked in' to unsustainable patterns of consumption by their circumstances, e.g. long distance between home and work with an inefficient public transport system necessitating commuting by car (Sanne, 2002). Under today's infrastructure, Francis and Wheeler's (2006) scenario analysis calculated that an individual who was sufficiently motivated to try and reduce their environmental impact through for example, turning lights off in unused rooms, home composting, and reducing car use and air travel where possible, could potentially reduce their EF by around 25 per cent. James and Desai's (2003) scenario analysis calculated that an individual willing to make lifestyle choices to reduce their environmental impact, living in a Z^2 (zero fossil energy, zero waste) community could potentially reduce their EF by 40 per cent. Such a reduction is based on features such as deliveries of locally produced organic food, car clubs to minimise personal car use, and zero fossil energy homes. Thus, in order to achieve more significant reductions in EFs, an appropriate facilitating infrastructure needs to be put in place.

The purpose of the above discussion has not been to belittle the importance of public participation in EAs. Indeed, EAs *do* offer environmental savings. For example, an energy saving light bulb uses a fifth to a quarter of the electricity used by a traditional bulb to generate the same amount of light (Energy Saving Trust, 2008). Furthermore, public participation in EAs is vital if the government is to meet its targets relating to sustainable consumption. For example, England's household recycling/composting rate was 34.5 per cent in 2007/08 (Defra, 2008c), while the *Waste Strategy for England 2007* outlined a target for the recycling/composting of household waste of at least 40 per cent by 2010, 45 per cent by 2015, and 50 per cent by 2020 (Defra, 2007b). The

purpose of the above discussion has been to put the EAs of focus firmly in the context of the contemporary sustainable consumption debate. Public participation in such EAs represents *progress towards* sustainable consumption, not sustainable consumption per se.

Although there has been discussion of quantifying the impact of EA participation, this thesis does not link EA adoption and practice to any objective measurements of household environmental impact. The environmental impacts of households are varied and thus measuring overall environmental impact is problematic (Spangenberg and Lorek, 2002). While the EF offers an aggregate measure, very little work has been published on EF analysis at the level of the individual household and there are difficulties in collecting detailed and accurate primary data (Hunter et al., 2006). Less practical difficulties surround the measurement of environmental savings with respect to residual waste weight and gas, electricity and water consumption (Staats et al., 2004), an approach which is supported by Shanahan (2003) in relation to qualitative work. Nonetheless, given the paucity of work on EA adoption and practice in households and the complexities/practicalities of also incorporating objective measurements of environmental impact/savings, this thesis set out to focus purely on the former. However, the research findings do involve the subjective assessment of the various routes to EA practice in terms of environmental savings.

Households

This thesis broadly adopts the definition of a household employed by the UK government for statistical purposes:

> *"A household is defined as one person or a group of people who have the accommodation as their only or main residence and (for a group) either share at least one meal a day or share the living accommodation, that is, a living room or sitting room"* (Communities and Local Government, 2008).

However, common accommodation is emphasised rather than shared meals or living accommodation; these latter features may not be relevant to some shared households, but it remains pertinent to examine EA adoption and practice in such households. Thus, EA adoption and practice is considered in multi-person households representing the variety of living arrangements evident in contemporary society – couples, families, sharers, etc.

Household dilution refers to the trend of disproportional growth in the number of households compared to the population due to an increasing number of smaller households. There are scale advantages of multi-person households in relation to

energy demand, and to a lesser extent waste generation (van der Wal and Noorman, 1998), and therefore household dilution will intensify the environmental impacts of the domestic sector. Thus, while multi-person households are focussed on, single person households are not excluded.

Reflexive considerations: introducing the researcher

The research questions are addressed through a qualitative approach. A central tenet of qualitative research is reflexivity which refers to *"the ways in which a researcher critically monitors and understands the role of the self in the research endeavour"* (Daly, 2007, p.188). This research is situated within the constructivism paradigm of inquiry, as will be discussed in chapter 3 (p.56). As such, I recognise that my values, experiences and interests have shaped the research process from the selection of the research issue, to the shaping of questions, to the interpretation of data (Daly, 2007). Thus, at this point it is important to introduce myself in relation to the research issue.

Environmental concern has been an element of my life since I was around ten years old. Rather than due to parental influence, I believe that this interest is rooted in coverage of environmental issues in the media in the late 1980s, a time when environmental issues were once again coming centre stage. Taking personal action to counteract environmental problems has also been a constant in my life from a young age. For example, as a ten year old I began boycotting beef burgers due to their link to rainforest destruction which was quickly superseded by becoming a vegetarian for animal welfare reasons.

My interest in and knowledge about environmental issues grew substantially during my bachelor's degree in Biological Sciences which I followed with conservation work in the Philippines and a master's degree in Conservation. These latter experiences prompted two personal transitions. Firstly, my perspective on environmental issues shifted from the natural sciences to the social sciences. Secondly, I grew increasingly politicised realising that while personal actions are extremely important, I also needed to take on more of an activist role. Thus, as well as increasing my personal EA repertoire, I began to engage more in the political process from lobbying my MP to taking part in demonstrations. I also started to see the pursuit of a PhD as another way in which I could contribute to the solution of environmental problems. As such, my personal agenda in terms of this PhD has always been to cast as wide a sphere of influence as possible by reporting findings and practical recommendations which facilitate behaviour

change. In the later stages of my doctoral studies I began a professional career in the field of behaviour change working for two environmental organisations – BioRegional followed by Waste Watch. Thus, from a personal and professional perspective, and in the words of one interviewee, environmental issues 'colour my life'.

Daly (2007, p.189) remarks that when we study households, *"we are always, at some level, insiders in relation to the topic under study"*. Given my personal participation in EAs and my experiences of living in a variety of household types – family, numerous shared households and couple – this is certainly true here. I have encouraged fellow household members to recycle, not to leave appliances on standby, etc. with varying degrees of success. It irritates me when I see people failing to engage in EAs. However, I certainly do not regard myself as some kind of 'environmental saint' and can empathise to a large degree with people's logistical reasons for not participating in particular EAs. I am also acutely aware that there are EAs I am yet to fully embrace.

Thesis structure

An outline of chapters 2 through to 8 will now be provided. Chapter 2 presents a conceptual framework of the adoption and practice of EAs in households, consisting of two constituent frameworks – adoption and practice of lone EAs in households and patterns of adoption and practice across EA repertoires. Each constituent framework represents my interpretation of how the EA participation literature and the household decision making literature can be integrated in relation to the research issue, and is the product of an ongoing literature review shaped by the research findings. This chapter explicitly highlights the elements of each constituent framework in need of further investigation and subsequently advanced by the research findings.

Chapter 3 documents how the research questions were addressed. This chapter justifies the selection of a qualitative research approach and outlines the constructivism paradigm of inquiry. The methodology of constructivist grounded theory and the method of household focus groups are outlined and their selection justified. The practicalities of data collection are considered such as the focus group format and the sampling rationale, along with documentation of the data analysis process.

The majority of the research findings are presented in chapters 4, 5 and 6. Given the highly detailed nature of the findings and that many issues cut across these chapters, the findings are generally not discussed in relation to, or used to advance, the conceptual framework (although there are some exceptions). Also due to the highly

detailed nature of the findings, the main findings around which the chapters are structured are only outlined here.

Chapter 4 addresses the research question – How are environmental actions practiced in households? – with respect to recycling/composting. Two main findings are presented. Firstly, that recycling and composting were maintained by a number of different units. Secondly, that recycling and composting practice was embedded in the everyday life of the household when a system for the separation, storage and removal of recyclables was evident.

Chapter 5 addresses the research question – How are environmental actions adopted in households? – with respect to recycling/composting. Three main findings are presented. Firstly, that recycling practice, and indeed repetitive EA practice in general, typically developed gradually rather than in one step. Secondly, that EA adoption and change to repetitive EA practice was driven by a number of different units. Thirdly, that multiple routes to recycling practice were evident when the driver of recycling adoption was followed through time to the present maintainer.

In the first instance, chapter 6 addresses both research questions with respect to other activity types (hereafter known as 'wider EAs'). Three main findings are presented, which parallel findings in the previous chapters but with differences in detail (therefore, there is some degree of repetition in this chapter; the alternative structure of addressing each research question with respect to all four activity types within one chapter proved too cumbersome due to the highly detailed nature of the findings). Firstly, that wider EAs were practiced/maintained by a number of different units. Secondly, that multiple routes to wider EA practice were evident. Thirdly, that repetitive wider EA practice was embedded in the everyday life of the household when EA practice was habitual and/or incorporated into domestic or general routines. In the second instance, chapter 6 addresses both research questions with respect to EA repertoires. Three main findings are presented. Firstly, that EA repertoires were underpinned by different patterns of motives. Secondly, that multiple routes to EA repertoire practice were evident with each route representing the dominant route(s) to EA practice across the EA repertoire. Thirdly, that EA repertoires developed gradually rather than in one step, with different constituent patterns.

Chapter 7 advances the conceptual framework of the adoption and practice of EAs in households. Findings from across chapters 4, 5 and 6 are summarised and used to explicitly address the elements of the original constituent frameworks identified as

requiring further investigation. This takes place within the presentation of advanced versions of the frameworks based on the research findings. Particular attention is paid to tentatively assessing the multiple routes to EA practice and the multiple routes to EA repertoire practice in terms of their desirability from a policy perspective. The advanced conceptual framework is used to further the argument that individual behaviour cannot be divorced from the social context of household and as such, the field of research into EA participation should shift its focus away from the individual to the household perspective and make greater use of qualitative research approaches.

Chapter 8 presents the conclusions of the thesis including contributions, practical recommendations for behaviour change policy makers and practitioners, limitations, and suggestions for future research.

Chapter 2

A conceptual framework of the adoption and practice of environmental actions in households

This chapter presents a conceptual framework of the adoption and practice of EAs in households which consists of two constituent frameworks. The two research questions – How are environmental actions adopted in households? How are environmental actions practiced in households? – are addressed with respect to a variety of lone EAs, i.e. single EAs considered in isolation. As such, the first framework relates to the adoption and practice of lone EAs in households and is presented as a single diagram (Figure 1). Here, I have brought together the limited and fragmented work which has examined EA participation from the household perspective (hereafter known as the 'household literature'), and integrated it with two other literatures of relevance. Firstly, the household decision making literature (hereafter known as the 'HDM literature'), which has scarcely been applied to the study of EA participation (Grønhøj, 2006). Secondly, the literature which has examined EA participation from the individual perspective (hereafter known as the 'individual literature'), specifically the literature pertaining to the determinants of behaviour and the limited and fragmented work which has examined behaviour change in a natural setting. The two research questions are also addressed with respect to EA repertoires, i.e. the collection of EAs evident in the household. As such, the second framework relates to the patterns of adoption and practice across EA repertoires and is presented as a descriptive framework. Here, I have drawn on the household literature, HDM literature and individual literature, specifically the literature pertaining to how participation in different EAs is related at the individual level.

This thesis employs a grounded theory methodology. While this methodology will be discussed in the following chapter (p.58), at this juncture it is important to discuss the place of the literature review in order to explain how the framework was developed. Within the grounded theory literature there is much debate surrounding whether or not

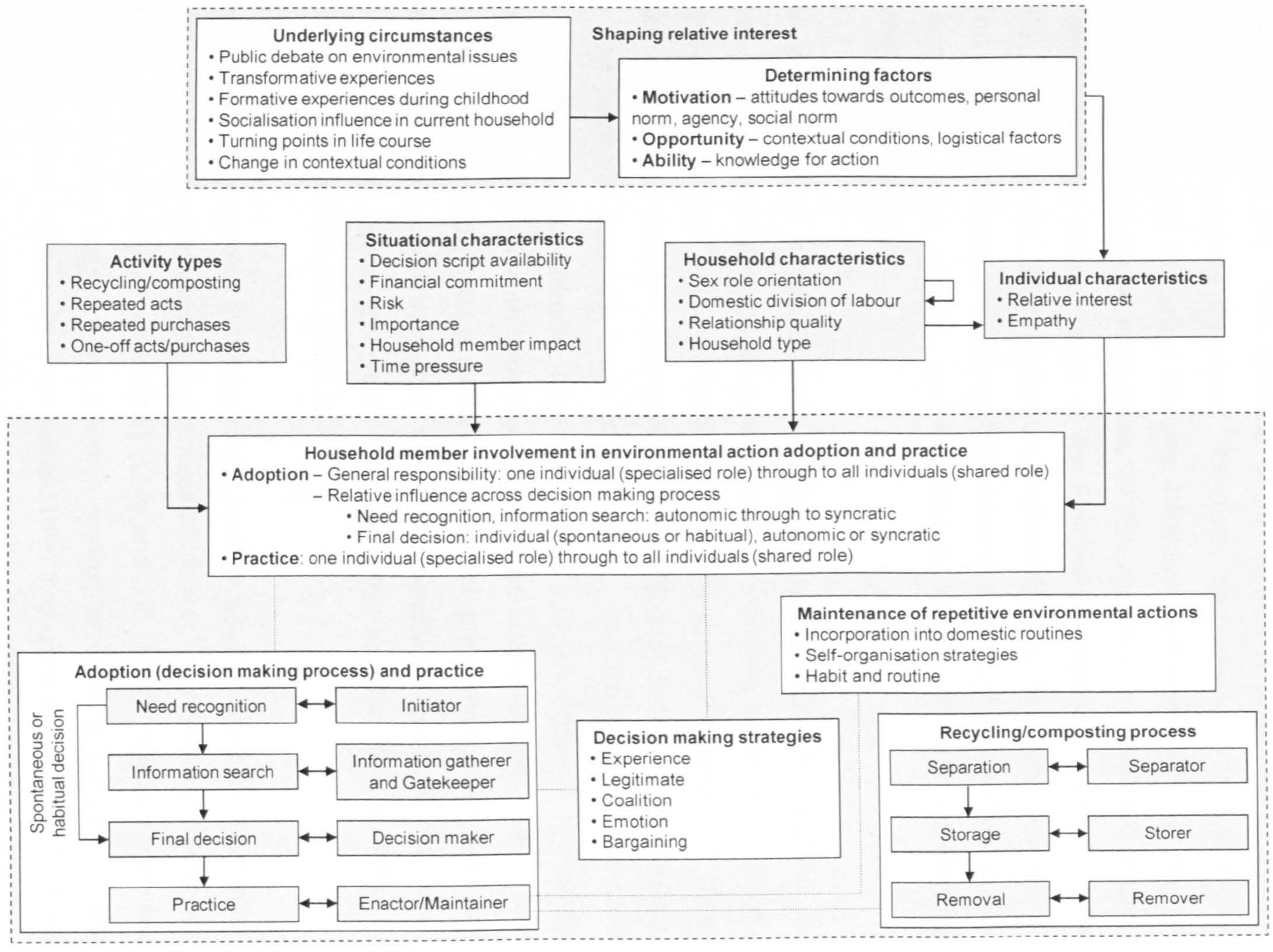
to conduct a literature review prior to commencing data collection and analysis, and if so, how extensive the literature review should be, see for example Cutcliffe (2000), McCann and Clark (2003), Charmaz (2006). These arguments are largely academic to a doctoral student who is required to present a literature review as part of the process of upgrading from MPhil to PhD. The initial literature review focused on the individual literature and the HDM literature as the household literature was extremely limited at this time. This process provided me with what Glaser and Strauss (1967, p.45) termed *"a partial framework of local concepts"*. This represented a number of relatively unlinked concepts of possible relevance to EA adoption and practice in households derived from the individual literature and the HDM literature. This partial framework was also somewhat informed by my experience of participating in EAs in different households which was particularly useful given the scant household literature from which to draw directly. Data collection and analysis commenced within this context. The literature review was ongoing, with the latter stages of the research process particularly characterised by the repeated movement between data collection, data analysis and literature review, which corresponded with an expansion of the household literature. Thus, each constituent framework represents my interpretation of how the household literature, HDM literature and individual literature can be integrated in relation to the research issue, and is the product of an ongoing literature review shaped by the research findings. My interpretation in relation to the framework of the adoption and practice of lone EAs in households was particularly informed by Lee's (1992) model of family buying behaviour and Levy and Lee's (2004) framework of family decision making.

The framework of the adoption and practice of lone EAs in households is presented in the first section (the majority) of this chapter. The second section presents the framework of patterns of adoption and practice across EA repertoires. These sections are structured around the examination of each component of the constituent framework. Throughout the discussion, the elements of each constituent framework requiring further investigation and subsequently advanced by the research findings are made explicit. As such, each constituent framework represents a map of existing knowledge of the research issue to which the findings will be related in chapter 7, thereby advancing the framework of the adoption and practice of EAs in households.

A conceptual framework of the adoption and practice of lone environmental actions in households

The presentation of the framework of the adoption and practice of lone EAs in households (Figure 1) begins with the **'Household member involvement in environmental action adoption and practice'** component and is followed by **'Adoption (decision making process) and practice'**, **'Decision making strategies'**, and **'Maintenance of repetitive environmental actions'**. The discussion then turns to the four categories of factors influencing household member involvement in EA adoption and practice – **'Activity types'**, **'Situational characteristics'**, **'Household characteristics'**, and **'Individual characteristics'**. Finally, **'Shaping relative influence'** is considered, firstly in terms of **'Determining factors'** and secondly in terms of **'Underlying circumstances'**.

Figure 1. A conceptual framework of the adoption and practice of lone environmental actions in households.



Household member involvement in environmental action adoption and practice

In the first instance, household member involvement in EA adoption is conceptualised at the level of general responsibility, and as a spectrum from one individual being responsible for EA adoption in a specialised role through to all individuals being responsible in a shared role. This spectrum of involvement is supported by holistic examination of the household literature. As such, the household literature has generally not gone beyond indicating that one individual was responsible or several household members were jointly responsible for EA adoption, and different studies have tended to highlight different ends of the spectrum in relation to different EAs (Åberg et al., 1996; Grønhøj, 2006; Oates and McDonald, 2006; Grønhøj and Ölander, 2007). This spectrum of involvement therefore needs to be specifically examined in its entirety across the range of EAs, and the natures of the different involvement distributions require exploration.

The HDM literature offers a framework for exploring involvement in EA adoption in more detail, namely the relative influence of household members across the decision making process. Relative influence (influence relative to the influence of other household members) in decision making is a central concept in the HDM literature, although EAs have not been the focus of such work. Individuals can influence a decision both directly and indirectly (Rossiter, 1979). Direct influence represents actions by individuals that have an impact on the decision making process (Beatty and Talpade, 1994). Indirect influence is passive whereby the preferences of an individual are indirectly taken into account by another household member (Rossiter, 1979). Thus, influence in its broadest sense represents *"both the effort and the ability to affect or sway a decision"* (Lee and Beatty, 2002, p.26).

The three stages of the decision making process, namely need recognition, information search and final decision correspond to the roles of initiator, information gatherer and gatekeeper, and decision maker respectively (Levy and Lee, 2004). Numerous studies have characterised each stage of the decision making process as autonomic (one individual has dominant influence in a specialised role) through to syncratic (individuals have equal influence in a shared role), e.g. Belch et al. (1985), Martínez and Polo (1999), Belch and Willis (2002). However, Kirchler et al.'s (2001) broader characterisation of the final decision has been employed, in order to incorporate indirect influence. As such, an individual decision is made independently of other household members of which there are two types – spontaneous and habitual – both of which bypass active information search. An autonomic decision represents one

individual making the decision but with the preferences of other household members taken into account, while a syncratic decision refers to the household collectively making the decision, with both these types of decision involving the extended decision making process. Given that this framework of relative influence across the decision making process has not been utilised in relation to EA adoption, its relevance requires examination.

Relative influence studies have examined four types of decision – frequently purchased goods, durable goods, other economic decisions, and services – and thus are useful when considering EA adoption. For example, frequently purchased goods often include food and cleaning products which has relevance to buying organic food and 'environmentally friendly' cleaning products. Durable goods often include household appliances and cars which has relevance to buying energy and fuel efficient models. Relative influence studies have commonly reported that the relative influence of family members (including children) varies across decisions, stages of the decision making process, decision areas (such as when to buy, where to buy, how much to spend, etc.), and families, e.g. Davis and Rigaux (1974), Belch et al. (1985), Belch and Willis (2002).

Relative influence studies have tended to use small convenience samples (Burns and Granbois, 1980). Many such studies were conducted in the 1970s and 1980s and are US-based. Therefore, the generalisability of most studies is limited. However, trends of interest can be gleaned by examining these studies collectively. For example, it is commonly reported that decisions regarding food and cleaning products tend to be dominated by the female partner, which appears to be relatively consistent across decades and cultural contexts, e.g. Davis and Rigaux (1974), Ganesh (1997), Cooper (1998). In contrast, decisions which were identified as male dominated in early studies such as financial decisions and cars, have shifted towards more syncratic decision making in more recent studies, e.g. Davis and Rigaux (1974), Belch et al. (1985), Putnam and Davidson (1987), Belch and Willis (2002). Indeed, it appears that *"previous male specialisms are becoming [more democratic] whilst females retain most of theirs"* (Cooper, 1998, p.11). This issue will be touched upon again later in this section (p.26).

Involvement in EA practice is conceptualised as a spectrum from one individual practicing the EA in a specialised role through to all individuals practicing the EA in a shared role. This spectrum of involvement is supported by household-perspective insights from the individual literature and holistic examination of the household literature, as will be discussed shortly. As with EA adoption, different studies have

tended to highlight different ends of the spectrum in relation to different EAs. This spectrum of involvement therefore needs to be specifically examined in its entirety across the range of EAs. In addition to informing the conceptualisation of household member involvement in EA adoption and practice, the household literature also highlights relative interest (individual characteristic) and sex role orientation and the domestic division of labour (household characteristics) as factors which explain involvement in EA adoption and practice (Dickinson, 1994; Åberg et al., 1996; Díaz Meneses and Beerli Palacio, 2005; Grønhøj, 2006; Oates and McDonald, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007), highlights the incorporation of recycling into domestic routines (Oates and McDonald, 2002), examines the nature of communication within the household regarding EAs (Grønhøj, 2006; Grønhøj and Ölander, 2007), and highlights the existence of overt conflict-ridden *and* 'peaceful' interpersonal influence processes (Grønhøj, 2006; Grønhøj and Ölander, 2007). The studies listed which make up the household literature have so far remained unlinked. Therefore, the majority of the issues highlighted by the household literature will be discussed collectively in this section, with the exception of the issue of conflict which is reserved until discussion of decision making strategies (p.29).

Before the household literature is discussed, it is important to note an issue relating to recycling and composting practice. Pieters (1991), Dickinson (1994) and Oates and McDonald (2006) note that recycling and composting practice represents a series of tasks which constitute a process rather than a single act. The exact series of tasks is likely to vary according to whether a household recycles via bring banks or a kerbside collection, and across households. However, as a broad framework, Pieters' (1991) recycling process (which is also applicable to home composting) has been utilised. The three stages of separation, storage and removal correspond to the roles of separator, storer and remover respectively.

The individual literature has occasionally made reference to recycling falling to one household member. For example, while the survey element of Harrison et al.'s (1996) Netherlands-based study suggested that recycling was shared, in-depth discussion groups suggested that women were in fact responsible as only females discussed the new organisational practices associated with recycling. Similarly, Martin et al. (2006) reported that focus groups revealed that recycling seemed to be driven by the women of the household, but in group interviews with British-Asians which were largely single sex, both men and women claimed credit for being responsible for recycling. Along similar lines, McDonald and Ball (1998) reported that larger households were no more likely to recycle plastics than smaller households and suggested this may indicate that

recycling falls to one household member. Indeed, in a German context, Hormuth et al. (1991) found that responsibility for recycling was concentrated on one individual (most frequently a housewife) in around a quarter of recycling households. More recently in a UK context, Pocock et al. (2008) reported that just over half of households agreed that one person was responsible for recycling. The proposition that there is one recycler per household is rooted in the conceptualisation of recycling as a series of *domestic* tasks rather than a conscious green act (the typical viewpoint of the individual literature) (Oates and McDonald, 2002; 2006):

> *"Recycling entails a series of tasks carried out within the household. Although these tasks vary according to the material being processed, they can all be described as mundane, unskilled and repetitive. For example, dealing with glass or plastic bottles to take to a bottle bank involves rinsing them out, which is akin to washing dishes; contributing to a kerbside paper scheme entails gathering paper up from around the house, taking it out to the paper bin and putting the bin out for collection, which is not unlike the routines we have for general domestic waste. In other words, although recycling tasks are a new addition to the work we do in the home, they have many precedents and parallels in our established domestic routines"* (Oates and McDonald, 2006, p.421).

Depositing recyclables in bring banks when supermarket shopping is commonly reported in surveys of recycling behaviour, e.g. Ball and Lawson (1990), Belton et al. (1994), McDonald and Ball (1998). Considering the recycling process holistically, Oates and McDonald (2002) reported that the majority of interviewees indicated that recycling tasks were seen as part of their domestic routines, and as such recycling was not seen as additional work.

In their review of the domestic division of labour literature, Oates and McDonald (2006) concluded that domestic labour is made up of several different kinds of household tasks, for example cooking, cleaning/clothes care, childcare, shopping, gardening, odd jobs/DIY and domestic travel (Sullivan, 1997), and on the whole, women still take responsibility for domestic activities. As such, Oates and McDonald (2002; 2006) have suggested that the one recycler per household is the individual who is responsible for domestic activities and therefore is likely to be female. Some empirical evidence is provided by Brook Lyndhurst (2001) and Oates and McDonald (2006) investigated this issue further. With respect to initiation (who started the recycling), 31 per cent of multi-person households indicated that recycling was initiated jointly while 56 per cent indicated that recycling was initiated by a single person; of these households 75 per cent of initiators were female while 25 percent were male. With respect to sustaining recycling (who does most of it), 46 per cent of multi-person households indicated that recycling was sustained jointly while the same percentage indicated that recycling was sustained by a single person. Again, 75 per cent of single sustainers were female

while 25 percent were male. Thus, Oates and McDonald (2006, p.427) uncovered *"a significant amount of joint activity which was not anticipated"*. However, Oates and McDonald (2006, p.429) also recognised that *"the term 'joint' could have a whole range of meanings from an occasional contribution to an equally shared activity"*, an issue which they felt required further exploration before the notion of a single recycler per household is dismissed. However, on the issue of gender, where one individual was responsible for initiating and sustaining recycling, this individual was more likely to be female. Arguably, the meanings of both 'single' and 'joint' in relation to recycling maintenance require exploration. For example, while Oates and McDonald (2006) referred to one person doing 'most' of the recycling and Hormuth et al. (1991) and Pocock et al. (2008) referred to one person taking responsibility for the household, there was no exploration of what these scenarios 'looked like'.

A final point of interest reported by Oates and McDonald (2006) represents the combinations of recycling initiator and sustainer in households. Without reference to gender, common combinations were: single initiator and single sustainer; joint initiator and joint sustainer; single initiator and joint sustainer; and joint initiator and single sustainer. Oates and McDonald (2006) reported a 61 per cent level of continuity of recycling responsibility from initiation to sustaining. Where the role did change hands, a single initiator changing into jointly sustaining recycling was much more likely than the opposite scenario. These different combinations of initiator and sustainer can be regarded as different routes to recycling practice and are also likely to reflect different routes to EA practice in general. The skeletal forms of the different routes to EA practice are in need of further exploration, and it is important to note that there has been no discussion of the possible differentiation of these routes in terms of their desirability from a policy perspective.

Related to Oates and McDonald's (2006) work is Díaz Meneses and Beerli Palacio's (2005) investigation of the socio-demographic and attitudinal characteristics of individuals carrying out glass recycling roles within Spanish households. These roles spanned adoption and practice although the roles were not comprehensive with respect to maintenance:

- Influencer – Individual who provided the greatest amount of information regarding recycling
- Initiator – Individual who first proposed the idea of starting to recycle
- Decision maker – Individual who decided the household should start to recycle

- Vendor – Individual responsible for transporting recyclables to the recycling facility
- Persuader – Individual who persuaded other household members of the need to recycle, i.e. the recycling promoter and encourager
- Enforcer – Individual in charge of ensuring that household recycling rules are obeyed
- Rejector – Individual who has most frequently voiced that the household should not concern itself with recycling

Díaz Meneses and Beerli Palacio (2005) reported that women were more likely to take on more of the recycling roles than men, which was attributed to the domestic nature of recycling. Similarly, household members with ecological motivation and ecological attitudes were more likely to take on more of the roles than those without such motivation and attitudes. Along similar lines, Åberg et al. (1996, p.60) investigated Swedish families' participation in a home composting programme and reported that *"a distinct distribution of work and responsibilities very soon developed in the families, based upon traditional sex roles and the relative interest of household members"*. Thus, there is evidence to suggest that relative interest influences involvement in EA adoption and practice. Returning to the issue of sex roles, Åberg et al. (1996) noted that the male spouse was almost always responsible for placement of the composter and in most households was responsible for emptying the composter; other tasks were usually undertaken by several individuals. Grønhøj (2006) and Grønhøj and Ölander (2007) also found that home composting was frequently attributed to the male spouse in Danish families. This was also associated with the *"traditional 'inside-outside' distribution of household chores"* (Grønhøj and Ölander, 2007, p.227) whereby females are assigned roles within the home such as childcare and housework, and males are assigned roles outside the home such as gardening and financial arrangements. Interestingly, Grønhøj and Ölander (2007) reported that male spouses were more inclined to behave positively with respect to glass recycling than female spouses, contradicting the work of Díaz Meneses and Beerli Palacio (2005) and Oates and McDonald (2006). Grønhøj and Ölander (2007) attributed this gender difference to women's lower tolerance of untidiness, making women more likely to bin separated recyclables. However, women's lower tolerance of untidiness may also be invoked to explain why women are more likely to be responsible for recycling than men.

In a parallel fashion to recycling, other authors have suggested that energy conservation EAs will mainly affect women as they carry out the majority of household chores (Roehr, 2001; Clancy and Roehr, 2003; Carlsson-Kanyama and Lindén, 2007).

By way of empirical investigation, Carlsson-Kanyama and Lindén (2007) interviewed 30 Swedish households that participated in energy conservation intervention measures and explored how the spouses divided the new household chores. They reported that EAs which involved a change in everyday habits and routines were usually carried out by the female spouse while EAs which involved structural changes such as installing insulation were the male spouse's responsibility. With respect to the specific situation of requesting that children do not use excessive amounts of hot water, Grønhøj and Ölander (2007) again invoked the inside-outside dichotomy referred to above; male spouses often indicated that they would intervene *"because their role as monitors of the household's energy consumption dictates it"* (p.228) while female spouses often indicated that they would intervene due to *"traditional family patterns of women caring for and educating the children"* (p.228-9).

Grønhøj (2006) reported that the adoption of buying organic milk was frequently attributed to the female spouse. This is in keeping with the earlier noted trend in the HDM literature of the female partner dominating food-related decisions (p.21). Grønhøj and Ölander (2007, p.229) reported a similar pattern with regard to the practice of buying organic food which in some households had resulted in inconsistent shopping practices whereby *"one spouse would buy organic products when shopping, while the other spouse would prefer to buy conventional products – even if he/she had been asked to buy the organic variant"*. However, Grønhøj and Ölander (2007) also found that in most households, an inconsistent shopping pattern became more consistent in favour of organic products over time. Thus, an EA had been *"started by one spouse, and subsequently accepted and adopted by the other"* (Grønhøj, 2006, p.500). Grønhøj (2006) and Grønhøj and Ölander (2007) recognised this process as a socialisation influence from one adult to another. Although most prominent in relation to organic food, socialisation influence was also evident in relation to other EAs such as recycling and composting (Grønhøj, 2006). Grønhøj (2006) also documented that parent to child influences (involving parents instructing their children) were widely reported in relation to using hot water, but child to parent influences were also evident. The issue of socialisation will be returned to later (p.46).

Discussion of the household literature has clearly highlighted the gendered nature of EA adoption and practice. Indeed, Grønhøj and Ölander (2007, p.231) noted that *"it is possible to trace the remains of a gender based inside-outside division of household responsibilities with regard to pro-environmental practices"*. As Grønhøj and Ölander (2007) also noted, this finding is particularly interesting given that Danish families are fairly egalitarian. However, another study in the household literature serves to reiterate

that the link between gender and involvement in EA adoption and practice is through the domestic division of labour. Dickinson (1994) quantitatively investigated the relationships between responsibility for a range of EAs (including recycling, composting and a number of green consumerism EAs), the division of labour with respect to associated domestic tasks (e.g. preparing meals, doing the dishes, cleaning the house, gardening, buying groceries, etc.), and gender in a US-setting. She concluded that the distribution of involvement in EA practice was related to the domestic division of labour rather than to gender itself although the role of gender in determining the domestic division of labour was recognised. Thus in summary, there is much evidence in the household literature indicating that the related issues of sex role orientation and the domestic division of labour influence involvement in EA adoption and practice.

Two of the previously discussed studies – Grønhøj (2006) and Grønhøj and Ölander (2007) – reported a number of findings relating to communication within the household about EAs. Grønhøj (2006) noted that EAs which had become habit were not on the communication agenda. Communication was also usually negligible where only one individual had an interest in the EA, even when the more interested individual preferred a change in their spouse's behaviour. However, in some cases differences of opinion would sometimes prompt discussion. Discussions between parents and children were more frequently reported than discussions between spouses. Grønhøj and Ölander (2007) reported that although spouses' responses to issues relating to EAs did not greatly differ, spouses perceived the differences between themselves and their spouse to be great. Couples who did not engage in EAs were more inclined to perceive such a difference. This led Grønhøj and Ölander (2007) to contend that perceived disagreement may be the result of a lack of communication within the household. As a result, *"established habits and routines are never challenged if couples avoid talking about these issues"* (p.230-1). Communication within the household about EAs has not received attention beyond the work of Grønhøj (2006) and Grønhøj and Ölander (2007); therefore, this issue warrants further investigation (Pennartz and Niehof, 1999).

Adoption (decision making process) and practice

EA adoption refers to the decision making process leading to the practice of a one-off act/purchase or the physical initiation of a repetitive EA (recycling/composting, repeated acts, repeated purchases). EA practice corresponds to the role of enactor if the EA is a one-off act/purchase, or the role of maintainer if the EA is repetitive.

The decision making process is conceptualised as a three stage process of need recognition, information search and final decision. This formulation is drawn from the

HDM literature where it has been commonly utilised in relative influence studies in relation to frequently purchased goods, durable goods and other economic decisions, e.g. Davis and Rigaux (1974), Belch et al. (1985), Martínez and Polo (1999). In line with the HDM literature, the information search stage has two aspects – seeking information from external sources and retrieving internal information from memory, e.g. Davis and Rigaux (1974), Olshavsky and Granbois (1979). The rationale underlying the utilisation of the three stage formulation of the decision making process as opposed to formulations with more stages will be detailed in the following chapter (p.69).

As noted earlier, Kirchler et al.'s (2001) characterisation of the final decision as either individual, autonomic or syncratic incorporates relative influence in the final decision *and* the nature of the decision making process itself. Accordingly, autonomic and syncratic decisions involve the extended decision making process whereas individual (spontaneous or habitual) decisions bypass active information search. Given that this conceptualisation of the decision making process has not been utilised in relation to EA adoption, its relevance requires examination. Indeed, as will be discussed later, the individual literature indicates that the public rarely searches for information from external sources about EAs and thus generally gathers information passively (p.43). This therefore suggests that the relevance of the extended decision making process to EA adoption may be somewhat overstated. However, the conceptualisation of the decision making process employed represents a starting point for empirical investigation rather than an assumed depiction of reality (Kirchler et al., 2001). In a similar fashion, although the decision making process is presented in a way which infers definable beginning and end points and step by step progression, this may not necessarily be the case (Kirchler et al., 2001).

Recent work in the individual literature by Oates et al. (2008) and Young et al. (forthcoming) has focussed on unpicking the decision making processes associated with sustainable technologies (e.g. energy efficient appliances, green electricity tariffs, etc.). Oates et al. (2008) documented the interplay between various types of decision criteria and information sources, while Young et al. (forthcoming) increased the complexity of this picture with the addition of other factors for the 'greenest' consumers such as the time available for research and decision making. This highlights the likely complexity of the decision making process, particularly in relation to repeated purchases and one-off acts/purchases, and households with the strongest environmental orientation.

Decision making strategies

The HDM literature contends that some degree of conflict is highly likely in the decision making process as individual preferences are unlikely to be uniform across the household, e.g. Wilkie et al. (1992), Lee and Collins (2000). Indeed, Åberg et al. (1996) stressed the importance of not assuming that household members have identical values in relation to EA participation. The term 'conflict' refers to explicit or implicit disagreement between household members on the rationale or outcome of a decision (Nelson, 1988). Lee and Collins (2000) identified five decision making strategies that households may use in an attempt to resolve conflict and come to a joint decision – experience, legitimate, coalition, emotion, and bargaining – by integrating strategies identified by Sheth (1974), Davis (1976), Spiro (1983), and Qualls and Jaffe (1992) (Table 2). The legitimate strategy is particularly notable in that it may involve a specialist, i.e. an individual who is perceived as being responsible for a particular aspect of decision making (Davis, 1976).

Table 2. Household decision making strategies (after Lee and Collins, 2000).

Decision making strategy	Definition
Experience	Using experience and knowledge as a source of information that will influence the decision outcome
Legitimate	Emphasising a role stereotype in order to obtain influence
Coalition	Two or more household members collude in order to obtain a particular outcome
Emotion	A household member tries to persuade or dominate others by using emotive appeals, crying, pouting and other non-verbal techniques in order to achieve influence
Bargaining	A household member gives in on one occasion in return for getting their way on some other occasion

Given that Lee and Collins' (2000) framework of decision making strategies has not been utilised in relation to EA adoption, its relevance requires examination. However, it is important to note that work by Grønhøj (2006) and Grønhøj and Ölander (2007) suggests that the relevance of the HDM literature on overt conflict and decision making strategies to EA adoption may be somewhat overstated. Grønhøj (2006) indeed identified interpersonal influence (regarded as one household member bringing about a change in another household member's behaviour) through overt conflict-ridden discussions. However, Grønhøj (2006) also reported that communication was usually negligible where only one spouse had an interest in the EA, even when the more interested individual preferred a change in their spouse's behaviour, which was

regarded as conflict minimising behaviour (Commuri and Gentry, 2000; Kirchler et al., 2001). Thus, conflict was often implicit and unspoken (Grønhøj and Ölander, 2007). Furthermore, Grønhøj (2006) and Grønhøj and Ölander (2007) also identified interpersonal influence through 'peaceful' communicative acts. Thus, Grønhøj (2006) indicated that the most fruitful approach involves the examination of overt conflict-ridden *and* peaceful influence processes. These influence processes have not received attention beyond the work of Grønhøj (2006) and Grønhøj and Ölander (2007). Therefore, overt conflict-ridden and peaceful interpersonal influence processes remain in need of further investigation. In particular, issues relating to socialisation influence require exploration, as will be discussed later (p.46).

Maintenance of repetitive environmental actions

Three of the four types of EA based on activity type are repetitive in nature – recycling/composting, repeated acts and repeated purchases. Any given household lies on a spectrum from never practicing a particular repetitive EA to practicing the EA at every available opportunity. This issue is particularly pertinent in relation to recycling. For example, Brook Lyndhurst (2004b) classified recycling households as High, Medium and Low based on the types of items they recycled and how often they recycled them. Interestingly, Brook Lyndhurst (2004b) also found that many High recyclers had started recycling a limited range of items but 'ratcheted up' their recycling repertoire as they became used to recycling and found that more comprehensive recycling required less effort than previously thought. Furthermore, while any given household may recycle a particular material (e.g. paper) this is not to say that every possible item is actually recycled. Recent research by Pocock et al. (2008) demonstrated a spatial dimension to the capture of recyclables within the home with 41 per cent of recyclers stating that they sometimes or often failed to recycle recyclables generated in the bathroom. Such behaviour was also the case for 32 per cent of the most enthusiastic recyclers. The collective impact of such behaviour should not be underestimated. For example, Brook Lyndhurst (2004b) estimated that as much as 40 per cent of the domestic paper and cardboard not recycled in London originated from Medium and High recycling households. Therefore, the current policy goal as highlighted by the *Recycle Now* campaign is to *"encourage people to recycle more things more often"* (WRAP, 2008b). In response, the underperformance of existing recyclers has begun to receive attention (Pocock et al., 2008), but remains worthy of further investigation.

Åberg et al. (1996) and Tucker and Speirs (2003) make a distinction between the factors influencing the initiation of a repetitive EA and the factors influencing its

persistence. Indeed, studies which have specifically examined repetitive EA maintenance as opposed to generic participation in an EA point to the importance of three issues – the incorporation of EA practice into domestic routines, self-organisation strategies with respect to recycling, and habit and routine. With respect to the first issue, Oates and McDonald (2002) highlighted the incorporation of recycling tasks into domestic routines, as discussed earlier (p.23). Similar findings were reported by Pocock et al. (2008) with 95 per cent of recyclers agreeing that recycling is part of their regular household routine. Given that the household literature indicates that sex role orientation and the domestic division of labour influence involvement in the adoption and practice of EAs other than recycling/composting, and the repetitive nature of repeated acts and repeated purchases, it would seem reasonable to suggest that the practice of these types of EAs may also be incorporated into domestic routines. However, the possible domestic nature of the practice of repeated acts and repeated purchases remains in need of examination.

In a study by Werner and Makela (1998), participants were asked the question 'what do you do to make recycling easier?'. Two particular responses were the separation of recyclables into containers and the combining of recycling tasks with other activities, which were termed 'self-organisation strategies' by Hansmann et al. (2006). Werner and Makela (1998) reported that people who were more favourable towards recycling were more likely to have made recycling more manageable in their home and more likely to recycle on a long term basis. In a Swiss study, self-organisation strategies were significantly and positively related to battery recycling and the percentage of batteries recycled (Hansmann et al., 2006). In their study of household waste behaviour in London, Brook Lyndhurst (2004b) reported that keeping a box in the house served as a reminder to recycle, i.e. a prompt (Porter et al., 1995; Schultz et al., 1995; McKenzie-Mohr and Smith, 1999). Brook Lyndhurst (2004b) also reported that Medium and High recycling households more commonly exhibited more elaborate storage systems involving a 'staging post' in the kitchen for recyclables generated during cooking and a main container kept elsewhere in the home. Pocock et al. (2008) identified household disorganisation as a barrier to recycling as much as possible and household organisation as a feature of 'unconscious competence' with respect to recycling (embedded systematic routines that can be carried out without conscious effort). Although these studies highlight the importance of self-organisation strategies in recycling maintenance, the role of such strategies remain underrepresented in research on recycling behaviour (Hansmann et al., 2006); this issue therefore warrants further attention.

Shove (2003b) noted that much environmentally significant consumption, particularly the consumption of energy and water, is bound up with routine and habit. Indeed, such consumption *"is occasioned by the routine accomplishment of what people taken [sic] to be normal and ordinary practice"* (Shove, 2006, p.294). Such normal and ordinary behaviour may represent non-participation in a repetitive EA, and the consequently unquestioned nature of these everyday practices may be a barrier to EA participation. For example, Hobson (2003) noted that the practices changed as a result of Global Action Plan's *Action at Home* behaviour change program tended to represent repeated acts such as turning lights off in unused rooms and turning the tap off when brushing teeth: *"participants stated that they had never really thought about these habits before the program and could not understand why they had gone unnoticed for so long"* (Hobson, 2003, p.104). Using Giddens' (1984) structuration theory, Hobson (2003) conceptualised the routine practices as part of the individual's practical consciousness – a form of 'hidden' knowledge that individuals make use of in going about their everyday lives, which negates the need to make new decisions every moment. Reading information packs and answering questionnaires as part of *Action at Home* brought these practices into discursive consciousness – knowledge that individuals think and argue with. Consequently, new habits were created within a reformed practical consciousness. Thus, the maintenance of a repetitive EA may involve either conscious or habitual behaviour. When such behaviour is habitual, participation in a repetitive EA may also represent normal and ordinary behaviour. As Burgess et al. (2003, p.278) notes, *"many different kinds of social practices and behaviours are learned in childhood and subsequently enacted without any kind of conscious thought or reasoning"*. Therefore, it is important to recognise the role of parental influence in shaping routine and habitual behaviour (Shove, 2003a) and thus determining what is seen as normal practice (whether this represents participation or non-participation in a repetitive EA), an issue which will be returned to later (p.45-6).

Hobson's (2003) conceptualisation of habitual behaviour change has strong parallels with Lewin's (1958) change theory and Dahlstrand and Biel's (1997) model of habitual behaviour change; all three perspectives highlight the discursive nature of habitual behaviour change, which is facilitated by social interaction (Jackson, 2005). Indeed, the *EcoTeams* program which succeeded *Action at Home*, which is one of the most successful behaviour change programs in terms of quantified environmental savings and enduring behaviour (see Staats et al. (2004) for example), revolves around discursive processes and social interaction in a group setting (Burgess, 2003; Global Action Plan, 2006). However, how habitual behaviour is changed in the group environment of the household has remained unexplored.

The discussion will now turn to the four categories of factors conceptualised as influencing household member involvement in EA adoption and practice, namely activity types, situational characteristics, household characteristics, and individual characteristics. The latter three categories have been drawn from the HDM literature, particularly the frameworks of family decision making offered by Gupta et al. (1983), Lee (1992), Kirchler et al. (2001), and Levy and Lee (2004), although such support is not EA-related. The inclusion of some factors is also supported by the household literature, although in some cases this is from a limited number of studies. Thus, all of the factors are, to a greater or lesser extent, in need of further examination. The identification of factors which influence involvement in EA adoption and practice is particularly important as the explanation of role structure has greater theoretical value than simply identifying role structure (Morgan, 1961; Lackman and Lanasa, 1993).

Activity types

In terms of activity type there are four types of EA, namely recycling/composting, repeated acts, repeated purchases, and one-off acts/purchases, as shown in Table 1 (p.8). Gilg and Barr (2005) provide empirical evidence that EAs are more usefully conceptualised by activity type than by sector; factor analysis on behavioural data in relation to 36 EAs produced three factors pertaining to recycling, habits and purchase decisions. With respect to the latter factor, an existing classification of decisions is evident in the HDM literature based largely around the nature of the goods being purchased (Kirchler et al., 2001). For example, Davis (1976) and Martínez and Polo (1999) distinguished between frequently purchased goods, durable goods which are purchased less frequently, and other economic decisions such as those relating to financial management. The classification of EAs into recycling/composting, repeated acts, repeated purchases, and one-off acts/purchases is also supported by Defra's (2008b) *Framework for Pro-Environmental Behaviours* which employs parallel activity types.

The following section outlines a number of situational characteristics which may influence involvement in EA adoption, specifically the nature of the final decision. While the relevant situational characteristics are likely to vary according to the EA and household in question, Åberg et al. (1996) imply that activity type may implicitly determine the nature of the final decision. Specifically:

> *"Source-separation and composting in households with more than one member requires not only agreement about the decision but also enduring, action-oriented co-operation between the members of the family" (Åberg et al., 1996).*

Thus, recycling/composting may be intrinsically associated with a syncratic decision. However, the relationship between the other activity types and the nature of the final decision has not been explored.

Situational characteristics

Situational characteristics include decision script availability, financial commitment, risk, importance, household member impact, and time pressure. The HDM literature and issues within the individual literature suggest that these factors may influence involvement in EA adoption, specifically the nature of the final decision. However, these issues have not been explored. Within the HDM literature, Kirchler et al. (2001) refers to three situational characteristics which are relevant to EAs, namely decision script availability, financial commitment and household member impact. Decision script availability refers to the cognitive complexity of EA adoption. The more familiar the decision and the less information needed, the more likely it is that cognitive scripts are available and therefore the less likelihood of a syncratic decision. Thus, if EA adoption relates to an EA which an individual has experience of or an EA which involves a simple choice as opposed to choosing between a complicated set of alternatives, then an individual decision may be the norm. EAs which involve high monetary outlay may be associated with a syncratic decision due to the commitment of shared finances. This may apply to the range of repeated purchases and one-off acts/purchases given the subjective nature of cost which will be discussed later (p.42). With respect to household member impact, the more individuals within the household who are affected by an EA, the greater the likelihood of a syncratic decision.

Sheth (1974) proposed that the greater the perceived risk of making a wrong decision for the household or the greater the importance of a decision to the household, the greater the likelihood of a syncratic decision. Repeated purchases and one-off acts/purchases in particular may be associated with high levels of risk due to perceptions of such choices as expensive, unattractive and low quality (Holdsworth, 2003; Brook Lyndhurst, 2004b). Purchases traditionally recognised as important include appliances and cars (Sheth, 1974) which suggests that buying an energy efficient appliance and a fuel efficient car may be associated with a syncratic decision. Sheth (1974) also proposed that the more a household is pressed for time, the less the likelihood of a syncratic decision. This issue is particularly pertinent given the growth of time poverty in workers' lives, e.g. Warren (2003).

Household characteristics

Household characteristics include sex role orientation, the domestic division of labour, household type, and interpersonal relationship quality. The HDM literature and the household literature suggest that role orientation influences involvement in EA adoption, specifically the nature of the final decision, and involvement in EA practice. Within the HDM literature, Sheth (1974) noted that if specific roles have been implicitly or explicitly assigned to individuals then this tends to bring about greater autonomy and less syncratic decision making. The HDM literature and the household literature point to the relevance of two inter-related perspectives on role orientation – sex role orientation and the domestic division of labour.

With respect to sex role orientation, couples can be identified along a continuum from traditional to modern (Qualls, 1987). In traditional couples, there is a clear distinction between male and female type roles with the male spouse tending to dominate the decision making process. Modern couples, on the other hand, have a more democratic structure with the male and female spouse making syncratic decisions and a blurring between male and female type roles. Indeed, within the HDM literature, Qualls (1987) reported a relatively strong relationship between sex role orientation and the relative influence of husbands and wives.

As discussed earlier, there is much evidence in the household literature linking gender and involvement in EA practice and adoption through the domestic division of labour (Dickinson, 1994; Åberg et al., 1996; Díaz Meneses and Beerli Palacio, 2005; Grønhøj, 2006; Oates and McDonald, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007) (p.26). Therefore, the household literature suggests that the inter-related issues of sex role orientation and the domestic decision of labour influence involvement in EA practice and adoption.

The HDM literature focuses firmly on decision making in couples and families with almost no reference to decision making in other household types such as shared households, although many of the concepts relating to family decision making should also apply to other household types (Wilkie et al., 1992). Nonetheless, it would also seem likely that household type would have some bearing on involvement in EA adoption and practice. Kirchler et al. (2001) notes that there is less likelihood of a syncratic decision if interpersonal relationship quality is poor. Furthermore, an individual's empathy towards another household member is likely to depend on relationship quality (Kirchler et al., 2001). In their study of young professional shared household living, Heath and Kenyon (2001) reported that shared households can be

the site of close friendships but also intense animosities. Of course, animosities are possible within couple and family households. Thus, household type does not necessarily indicate interpersonal relationship quality.

Individual characteristics

Individual characteristics include relative interest and empathy. Within the HDM literature, relative interest refers to the how important the outcome of a particular decision is to an individual, e.g. Burns and Granbois (1977), Blackwell et al. (2001). Relative interest *"has not been conceptualised clearly or integrated into the environmental behaviour literature"* (Gregory and Di Leo, 2003, p.1266). Thus, within the framework, relative interest refers to the level of importance a household member places on participating in a particular EA (interest relative to the interest of other household members). As such, relative interest is a preference regarding personal action rather than how favourable an individual is towards the EA in general (attitude) or a cognitive commitment to act (behaviour intention) (Fitzmaurice, 2005).

The HDM literature suggests that relative interest influences involvement in EA adoption, specifically the nature of the final decision; the greater an individual's relative interest, the greater their relative influence in the decision, e.g. Gupta et al. (1983), Corfman and Lehmann (1987), Levy and Lee (2004). The household literature also broadly suggests that relative interest influences involvement in EA adoption and practice (Åberg et al., 1996; Díaz Meneses and Beerli Palacio, 2005), as discussed earlier (p.25).

Within the HDM literature, empathy represents the importance to an individual that the preferences of other household members are accounted for in the decision (Morgan, 1961; Burns, 1976). This concept has not been utilised or explored in relation to EA adoption and practice. Therefore here, empathy refers to how important it is to an individual that the preferences of other household members are accounted for in the adoption and practice of a particular EA. The HDM literature suggests that empathy influences the decision outcome, specifically that where relative interest in an EA differs, the decision outcome is likely to reflect the preference of the individual who is the object of other household members' empathy (Burns and Granbois, 1977). An individual is likely to value the preferences of other household members more highly when the ties between household members are stronger (Kirchler et al., 2001). Hence, empathy may be influenced by the household characteristic of interpersonal relationship quality.

Shaping relative interest

Relative interest refers to the level of importance a household member places on participating in a particular EA. As this concept has not been specifically utilised in relation to EAs, it is conceptualised that relative interest is shaped in the same way as actual behaviour, a point which requires confirmation. As such, in keeping with the contemporary position of the determinants of behaviour body of knowledge (emanating from the individual literature) (Stern, 2000; Barr, 2002; Kollmuss and Agyeman, 2002; Jackson, 2005; Darnton et al., 2006), relative interest is influenced by a broad range of internal and external factors which may vary greatly across EAs and individuals, and interact with each other. These determining factors are in turn shaped by various underlying circumstances.

Determining factors

A modified version of Ölander and Thørgersen's (1995) motivation-ability-opportunity-behaviour model provides a means of organising the determining factors and conceptualising broadly how these factors interact. As such, an individual's relative interest is shaped by their motivation to participate in the EA as well as the opportunity and their ability to do so. Rather than conceptualising motivation in terms of Fishbein and Ajzen's (1975) theory of reasoned action or Schwartz's (1977) norm-activation model of altruism as Ölander and Thørgersen (1995) have done, as these models are not overly helpful to qualitative research (Jackson, 2005; Darnton et al., 2006), motivation is conceptualised as four factors which represent internal reasons to participate in an EA: attitudes toward the outcomes of the EA (e.g. environmental protection, saving money, etc.); personal norm (a feeling of moral obligation to act); agency (a belief that one's actions make a difference); and social norm (a feeling of social pressure to act). Ölander and Thørgersen (1995) preferred to conceive of opportunity as an objective precondition for the EA but acknowledged its subjective nature. Here, opportunity refers to contextual conditions, which is more objective in nature (e.g. access to a kerbside recycling service), and the logistics of the EA, which is more subjective in nature (e.g. time, convenience). In the original model an individual's ability to participate in an EA incorporates both habit and knowledge for action. While habit is an important determinant of behaviour it has less relevance to relative interest. Therefore here, ability refers solely to knowledge for action.

The discussion will now turn to outlining the determining factors within the framework of motivation, opportunity and ability. The emphasis in this discussion is on outlining the nature of factors rather than comprehensively examining the studies which provide evidence for the inclusion of these factors. As the vast majority of such studies are

highly quantitative in nature, such discussion would inevitably lead to consideration of the *extent* to which the various factors are associated with/predict behaviour across the sample population. This type of discussion is not overly helpful to qualitative research, and has already been well covered by Barr (2002). However, it is worth noting that quantitative studies have frequently produced conflicting results regarding the impact of particular factors on behaviour, as will be illustrated later (p.40).

Motivation

The first aspect of motivation is an individual's attitudes towards the outcomes of the EA which represent the individual's beliefs about what the EA achieves and their evaluations of those beliefs. Beliefs which are evaluated favourably represent motives for EA participation. The determinants of behaviour body of knowledge recognises that EA participation may be underpinned by a number of different motives. For example, in relation to recycling, Bagozzi and Dabholkar (1994) identified 19 motives: reduce waste, reuse materials, save the environment, save the planet, avoid filling up landfill sites, reduce cost of living, build self-esteem, save resources, conserve energy, help community, reduce pollution, enhance aesthetic experience, it's the right thing to do, save or earn money, reduce messy rubbish, help economy, provide for future generations, promote better health and avoid sickness, sustain life. Environmental motives can either be general (e.g. save the environment), or EA specific (e.g. avoid filling up landfill sites in relation to recycling). A desire to avoid waste (both in terms of domestic waste and energy and water) may be distinct from a desire to reduce environmental impact (Defra, 2008b). An individual's motives may be non-environmental such as: saving money in relation to energy conservation EAs (Holdsworth, 2003; Brook Lyndhurst, 2007b); gardening-related benefits in relation to composting (Tucker and Speirs, 2001; 2003; Tucker et al., 2003; Brook Lyndhurst, 2004b); health benefits in relation to walking or cycling instead of using the car (Defra, 2002; Grønhøj, 2006); and health, taste and safety in relation to buying organic food (Hughner et al., 2007). Finally, motives may also include the personal, internal contentment derived from participating in EAs, known as intrinsic satisfaction (De Young, 2000).

Environmental motives are generally regarded as altruistic in nature, whether this is rooted in concern for the welfare of other humans (social altruism) or concern for other species and the biosphere (biospheric altruism) (Stern et al., 1993). Non-environmental motives which are non self-serving can also be regarded as a form of social altruism. Non self-serving motives may be felt as a personal norm (a feeling of moral obligation) to act (Schwartz, 1977), which is the second aspect of motivation.

Studies that have demonstrated the influence of personal norm on behaviour include Hallin (1995), Hunecke et al. (2001), Davies et al. (2002), and Kaiser et al. (2005).

The third aspect of motivation is agency which refers to *"people's belief in their own ability to bring about change"* (Darnton, 2004a, p.19). This factor has also been termed response efficacy (Barr, 2002), locus of control (Hines et al., 1987; Kollmuss and Agyeman, 2002), and perceived consumer effectiveness (Berger and Corbin, 1992; Straughan and Roberts, 1999). Agency is also a component of Peattie's (2001) concept of confidence in relation to green consumerism EAs. Individuals with a greater sense of agency believe that their actions make a difference whereas those with a low sense of agency feel that their actions are insignificant and only those with more power can bring about change. Agency has been found to have a direct impact on behaviour, (Roberts, 1996; Straughan and Roberts, 1999), and to moderate the relationship between environmental concern and EA participation. As such, an individual is more likely to act in keeping with their environmental concern the higher their feeling of agency (Berger and Corbin, 1992; Lee and Holden, 1999).

The final aspect of motivation is social norm which has also been termed subjective norm (Fishbein and Ajzen, 1975; Ajzen, 1991) and refers to social influence. Cialdini et al. (1990) distinguished between the descriptive norm which refers to what is typical or normal behaviour, and the injunctive norm which refers to beliefs about what others regard as morally appropriate and inappropriate behaviour. Studies which have demonstrated the influence of social norm on behaviour include Oskamp et al. (1991) (descriptive norm), Gamba and Oskamp (1994) (descriptive and injunctive norm), and Davies et al. (2002) (injunctive norm). Discussion of social norm tends not to specifically flag up the influence of household members. However, in relation to recycling, Kok and Siero (1985) identified family members as the most important references within social norm with friends being less important. Ewing (2001) reported that the expectations of household members were important in relation to the decision to participate in kerbside recycling and played an even greater role in relation to the proportion of waste recycled.

This discussion of motivating factors has cast individuals as desiring to participate in an EA as a result of their attitudes toward the outcomes of the EA, or feelings of personal norm, agency or social norm, or indeed a combination of these motivational factors (De Young, 2000). However, it is important to note that EA participation may be unintentional and therefore have little to do with motivation, e.g. those on a low income may have no choice but to use public transport (Holdsworth, 2003).

Opportunity

The first aspect of opportunity is contextual conditions which include: government regulations, legal and institutional factors (e.g. contract restrictions on rented accommodation occupants); financial incentives and costs; technical/built environment capabilities and constraints (e.g. building design, cycle path availability); and public policies to support behaviour (e.g. provision of kerbside recycling services) (Stern, 2000). Although individuals may perceive the same contextual conditions differently, contextual conditions are regarded as generally objective in nature. A report by the Sustainable Consumption Roundtable (2006) concluded that they key to achieving sustainable consumption is to make EAs easier for the general public to take up: *"The focus needs to be on creating a supportive framework for collective progress, rather than exhorting individuals to go against the grain"* (p.1).

Studies examining the impact of contextual conditions on behaviour have commonly focused on the provision of kerbside recycling services, often reporting such access to be a dominant predictor of recycling, e.g. Derkson and Gartrell (1993), Berger (1997), Barr (2002). However, it is of particular interest to examine studies which have investigated the interaction between motivation factors and contextual conditions in order to highlight the rationale that relative interest is shaped by both motivation and opportunity, and illustrate the often conflicting findings of quantitative studies. For example, Derkson and Gartrell (1993) found that environmental concern only affected the behaviour of respondents who had access to kerbside recycling, with such individuals recycling more categories of recyclables. Thus, Derkson and Gartrell (1993) concluded that environmentally concerned individuals will recycle if given an opportunity but so will unconcerned individuals. Similarly, within the energy conservation sector, Black et al. (1985) reported that repeated acts were more readily undertaken in response to personal norms for energy efficiency whereas one-off acts/purchases were determined by factors such as home ownership and the personal benefits of energy efficiency. These findings illustrate Diekmann and Preisendörfer's (2003) low-cost hypothesis which asserts that environmental concern influences behaviour primarily under conditions connected with low cost (in its broadest sense) and little inconvenience. The lower the costs, the easier it is for individuals to transform their attitudes into corresponding behaviour. If costs are high, environmental concern does not help to overcome an individual's reservations, and there will be few or no effects of environmental concern.

In contrast, Guagnano et al. (1995) reported that attitudinal factors had little impact on the behaviour of those with kerbside recycling but a large impact for those without such a service. This was in keeping with their proposed attitude-behaviour-context model which asserts that the link between motivation factors and behaviour is strongest when contextual conditions are weak or non-existent (e.g. recycling is possible but not necessarily easy), and that conversely there is virtually no link between attitudinal factors and behaviour when contextual factors are strongly negative (e.g. recycling is very difficult so no one recycles) or strongly positive (e.g. convenient kerbside recycling so everyone recycles) (Jackson, 2005). Diekmann and Preisendörfer's (2003) low-cost hypothesis and Guagnano et al.'s (1995) attitude-behaviour-context model propose a different relationship between attitudinal factors, contextual factors and behaviour. However, it is important to note that both models highlight the general position of the determinants of behaviour body of knowledge that there is concordance between attitudes towards, and participation in, a particular EA, unless favourable attitudes cannot be translated into action due to a lack of opportunity or ability.

The second aspect of opportunity is logistical factors which includes time, storage space (for recyclables), convenience, and cost (Barr, 2002). These factors represent *perceptions* rather than objective measures (Barr, 2002; Brook Lyndhurst, 2004b; Darnton, 2004b; 2004a); while the contextual conditions discussed above can facilitate or act as a barrier to EA participation, these conditions are bound up with individuals' perceptions of them.

Lack of time is frequently cited as a specific reason for EA non-participation, particularly recycling, e.g. Watts and Probert (1999), Robinson and Read (2005), and a reason for not recycling more, e.g. Pocock et al. (2008). Time typically refers to the time it takes to clean, separate and store recyclables and transport them to the final recycling facility, e.g. Gamba and Oskamp (1994), ENCAMS (2002). However, Brook Lyndhurst (2004b) identified another perspective on time, namely time related to organising recycling routines.

Lack of storage space is also cited as a specific reason for non-participation in recycling, e.g. Watts and Probert (1999), Defra (2002), and a reason for not recycling more, e.g. Hayward et al. (2007), Pocock et al. (2008). Some surveys have found that 'not having enough recyclables' is a reason for not recycling, e.g. Tucker (1999), Perrin and Barton (2001), McDonald and Oates (2003), which is perhaps related to the issue of storage space.

Barr (2002) regarded convenience as the perceived simplicity of undertaking an EA. However, convenience can have many facets. For example, in relation to recycling, Brook Lyndhurst (2004b) reported that convenience is related to kerbside recycling service provision, distance from bring banks and their location in terms of everyday trips, availability of a car, and also issues of time and storage space. McDonald and Oates (2006) drew a parallel between the concept of convenience in relation to recycling and Peattie's (2001) concept of compromise in relation to green consumerism. The aspects of compromise include paying a premium for a green product, sacrificing product performance for environmental benefits, and having to obtain goods from non-standard outlets. Indeed, products made from recycled materials are often perceived as expensive, unattractive and low quality (Brook Lyndhurst, 2004b). The issue of non-standard outlets is particularly pertinent in relation to buying locally produced food. For example, Weatherell et al. (2003) reported that around three quarters of respondents claimed that they were likely to buy locally produced food if it were available at the right price and in the right place. For the majority of respondents the 'right place' was mainstream supermarkets.

Brook Lyndhurst (2004b) expanded on the issues of storage space and convenience being a 'state of mind' in relation to recycling. For example, in comparative situations of housing type and access to kerbside collections, Low and Non recyclers were more likely to think storage was difficult than were Medium and High recyclers., Similarly, interest in recycling tends to interact with perceptions of available time to define what is reasonable in terms of time and effort to devote to recycling. Those with a strong interest in recycling will create time and mental space for it in their domestic routines whereas those with a low interest will only recycle if the impact on other more important activities is minimal. Therefore, where interest and convenience are both high, a high level of recycling is achieved. Conversely, where interest and convenience are both low, little recycling is evident.

With respect to the logistical issue of cost, environmentally friendly products are commonly assumed to be expensive (Holdsworth, 2003; Brook Lyndhurst, 2004b). As a specific example, McEachern and McClean (2002) found that among those who had never purchased organic dairy products, the main deterrent was pricing constraints. However, as Holdsworth (2003) noted, such assumptions are not necessarily based upon experience or accurate information, a point of relevance to all perceptions relating to logistical factors.

Ability – knowledge for action

Knowledge of behavioural responses to environmental problems and how to engage in such EAs has been termed 'action-related knowledge' (Frick et al., 2004), 'concrete knowledge' and 'knowledge for action' (Schahn and Holzer, 1990). Knowledge for action is a prerequisite to EA participation (Hines et al., 1987; Pieters, 1991; Barr, 2007). This issue is particularly pertinent in relation to recycling as people need to know what, how, where and when to recycle in order to participate properly (Pieters, 1991; Hansmann et al., 2006). Indeed, Hayward et al. (2007) and Pocock et al. (2008) identified a lack of knowledge for action as a reason for not recycling more.

Brook Lyndhurst (2004a) reported that the vast majority of the general public (80 per cent) agreed that they feel reasonably well informed about what they could do to reduce their environmental impact. This level of awareness varied very little across the scale of engagement in EAs. This led Brook Lyndhurst (2004a) to conclude that a lack of awareness per se may not be a significant barrier to EA participation since most people already feel informed at least to some degree. A high level of such awareness was also reported in the survey element of Holdsworth's (2003) study. However, focus groups revealed that most individuals did not know how to behave with respect to EAs and what facilities and information might be available. In a similar fashion, Ellen (1994) found that objective knowledge was not significantly related to perceived knowledge which again suggests that individuals who believe they are knowledgeable may not, in fact, have the requisite knowledge to make sound decisions.

Turning now to where individuals source knowledge for action, a number of recycling surveys have found that people learn about bring banks simply from seeing them (Ball and Lawson, 1990; Belton et al., 1994; McDonald and Ball, 1998). With respect to kerbside recycling services, McDonald and Ball (1998) reported that the scheme leaflet was the source of initial awareness for both recyclers and non-recyclers. Vining and Ebreo (1990) found that recyclers had a significantly higher level of knowledge for action than non-recyclers; recyclers had also heard about recycling from more sources and familiarity with recycling through association with friends was a particular difference between recyclers and non-recyclers. With respect to energy conservation EAs, Brook Lyndhurst (2007b) highlighted the importance of the personal recommendations of trusted others. These findings highlight the passive nature of the acquisition of knowledge for action.

Work by Steedman (2005) which is one of the few studies focusing on the acquisition of knowledge for action has revealed much in this area. Steedman (2005) described

actively seeking out information on EAs as a *"specialist concern"* (p.1) as only 19 per cent of consumers had sought out more information on at least one topic and only eight per cent on five or more topics. Television, newspapers, local authorities, and shops and supermarkets were common sources of passively gathered information. Government-funded bodies such as the Energy Saving Trust and its Energy Efficiency Advice Centres were one of the least cited information sources. Information seekers were commonly prompted to look for information by their beliefs, the purchase of a new product or service, newspapers and magazines, product labelling, and television. Such consumers also tend to seek information on topics that are well-publicised with simple messages, appear to deliver tangible, close to home benefits, and present fewer practical barriers, e.g. recycling, energy conservation and organic food. Seekers were also much more likely to be motivated by their beliefs and by environmental campaign groups than non-seekers. The internet was a particularly important means of gathering information for seekers along with leaflets and brochures. Finally, Steedman (2005) reported an apparent strong positive relationship between seeking information and acting on it: *"it appears that once individuals go looking, the information they find does appear to help them take steps to change their behaviour"* (p.15).

The acquisition of knowledge for action is also discussed by McDonald et al. (2006) in relation to their typology of green consumers. This work will be discussed later in relation to the framework of patterns of adoption and practice across EA repertoires (p.49-50). However, it is worth stating at this point that McDonald et al.'s (2006) work indicates that the acquisition of knowledge for action should be considered within the broader context of how households approach the adoption of EAs across the EA repertoire. Given the limited attention paid to the acquisition of knowledge for action, from where knowledge for action is sourced by households remains an issue in need of further investigation. In relation to this, how knowledge for action is transmitted through the household is in need of exploration (Pennartz and Niehof, 1999).

Underlying circumstances

The determining factors discussed in the previous section are shaped by various underlying circumstances highlighted by the literature pertaining to behaviour change in a natural setting. This literature consists of a limited number of studies which have so far remained unlinked. The underlying circumstances include public debate on environmental issues, transformative experiences, formative experiences during childhood, socialisation in current household, turning points in life course, and change in contextual conditions.

Mårtensson and Pettersson (2003) investigated the life histories of 59 individuals from 34 Swedish households which represented differing degrees of engagement in EAs. The vast majority of respondents said that they had been influenced by the general public debate on environmental issues. Most individuals who had been worried by information about environmental problems reported that this had led them to try and reduce the environmental impact of at least one aspect of their everyday behaviour. Åberg et al. (1996) reported similar findings in relation to the adoption of home composting in Sweden. In Mårtensson and Pettersson's (2003) study, no respondent indicated that the public debate about environmental problems was their only influence, rather in most cases it had reinforced environmental interest or allowed them to define their former behaviour in environmental terms. Indeed, the majority of respondents mentioned that their environmental attitudes were based on childhood experiences.

Maiteny (2002) interviewed participants in Global Action Plan's *Action at Home* program regarding reasons for their environmental concern and attempts to change their lifestyle. He noted that many of the underlying circumstances were not overtly environmental. While some experiences were formative as a child or student, others were *"'one-off' transformative experiences that had quite sudden effects on those individual's awareness and priorities"* (p.301). Such experiences included serious and seemingly unexplained illness leading to questions about food safety and the environment, and witnessing first-hand the way other people live in a less wasteful ways, e.g. in less developed countries.

Formative experiences during childhood refer to a number of influences. In their Swedish study, Carlsson-Kanyama et al. (2005) reported that the 'Second World War generation' behaved in a more energy efficient way than younger households particularly in relation to laundry practices and indoor temperature regulation, which appeared to be related less to environmental attitudes and more to the shortage and thrift associated with World War II. Hallin's (1995) US-based study reported similar behaviour within the 'Depression generation'. Mårtensson and Pettersson (2003) also found a group of older respondents who had always lived in a spirit of keeping and making use of natural resources and thrift: *"what had once been normal practice for these people, in later life had come to be seen as environmentally friendly"* (p.52). Hallin (1995) also identified a group of younger respondents who had been brought up to participate in EAs. Some, like their parents, did not relate EAs primarily to environmental problems; their behaviour was again anchored in a value system which emphasised thrift. Mårtensson and Pettersson (2003) and Maiteny (2002) also recognised a similar group. However, some of Hallin's (1995) respondents were

socialised into a value system that stressed environmental concern. Altogether, this links with the point made earlier regarding the role of parental influence in shaping routine and habitual behaviour and thus determining what is seen as normal practice (p.32), otherwise known as the descriptive norm (Cialdini et al., 1990). Lastly, in terms of formative experiences during childhood, Mårtensson and Pettersson (2003) also identified experience of food cultivation and an interest in nature and outdoor life.

Easterling et al. (1995) raised the possibility that children's environmental concern and knowledge may act as a catalyst for family behaviour change. Indeed, Mårtensson and Pettersson (2003), Brook Lyndhurst (2004b), Woollam et al. (2006), and Ekström (2007) provide empirical evidence of children influencing their parents with respect to EA participation by taking related messages home from school. Easterling et al. (1995) referred to such situations as children resocialising the family. As discussed earlier, Grønhøj (2006) and Grønhøj and Ölander (2007) also recognised socialisation influence from adult to adult (p.26). It is pertinent to note that this type of socialisation in relation to EAs has not been clearly defined. However, to draw on Ward's (1974) commonly employed definition of consumer socialisation, this resocialisation can be regarded as the acquisition of skills (practices), knowledge and attitudes relating to EA participation from another household member. Implicit in Easterling et al. (1995), Grønhøj (2006) and Grønhøj and Ölander's (2007) discussion of socialisation influence is a change in behaviour *and* attitudes. However, behaviour change does not necessarily require attitude change (Uzzell et al., 2006). Indeed, socialisation agents may be able to force other household members to practice EAs which indicates that it may be pertinent to distinguish between socialisation influence in terms of behaviour only and socialisation influence which results in the volitional practice of EAs (Grønhøj and Thøgersen, 2007); however, this issue remains in need of investigation. Furthermore, although a number of studies have documented the existence of socialisation influence within households, very little attention has been paid to the mechanisms involved. For example, although not made explicitly clear by Grønhøj (2006), socialisation influence appeared to be attributed to verbal communication about the EA. Thus, the means of socialisation influence are also in need of exploration.

Mårtensson and Pettersson (2003) and Brook Lyndhurst (2004b) discussed the influence of turning points in individuals' life courses. Brook Lyndhurst (2004b) found that a key characteristic of High recyclers which cut across whether or not they had access to kerbside recycling, was a settled and organised life. Having children and moving into a family home were key turning points – both events were associated with more regular domestic routines and encouraged individuals to think about the future,

an issue which Mårtensson and Pettersson (2003) also noted. Moving from a flat to a family home also often created more space to store recyclables.

The final underlying circumstance is change in contextual conditions of which the primary example is access to a kerbside recycling collection service. For example, in Brook Lyndhurst's (2004b) qualitative investigation, kerbside collections were the only reason why many people recycled. As such, kerbside collections enabled many households to recycle for the first time and helped previous recyclers to recycle higher volumes and a wider range of materials. Kerbside collections helped to overcome many of the logistical barriers to recycling such as space to store recyclables and the perceived inconvenience of recycling using bring banks. Brook Lyndhurst (2004b) also reported that for some High recyclers, participating in kerbside collections had raised their overall interest in recycling. Indeed, Werner et al. (1995) presented evidence to suggest that participation in kerbside recycling led to changes in attitude. In other words, if a change in behaviour can be secured without accompanying change in attitudes, then over time, attitude change may occur.

A conceptual framework of patterns of adoption and practice across environmental action repertoires

The framework of patterns of adoption and practice across EA repertoires consists of two components – general responsibility for EA adoption and practice, and types of EA repertoires.

General responsibility for environmental action adoption and practice

General responsibility for EA adoption and practice across the EA repertoire is conceptualised as a spectrum. At one end of the spectrum, one individual is generally responsible for EA adoption and practice in a specialised role. This individual can be regarded as the 'household EA officer'. At the other end of the spectrum, all individuals are generally responsible for EA adoption and practice in a shared role. General responsibility for EA adoption and practice across the EA repertoire has not been squarely examined, although as will be seen shortly, some studies within the household literature are informative in this area. Thus, the spectrum of general responsibility has been drawn from the HDM literature. Ferber and Lee (1974) introduced the concept of the 'family financial officer' – the spouse with the main

responsibility for managing family finances with respect to both decision making and execution. The applicability of the spectrum of general responsibility including the concept of a household EA officer needs to be examined.

The inter-related issues of sex role orientation and the domestic division of labour are conceptualised as influencing general responsibility for EA adoption and practice across the EA repertoire. This position is supported by the household literature, although such support is from a very limited number of studies. Furthermore, such studies have examined how a particular selection of EAs are adopted and practiced, rather than examining patterns of adoption and practice across EA repertoires per se. For example, Carlsson-Kanyama and Lindén (2007) focused specifically on energy conservation EAs in Swedish households. Grønhøj (2006) and Grønhøj and Ölander (2007) focused specifically on recycling and composting, reducing hot water consumption, reducing use of the car, and buying organic food in Danish households. As discussed earlier, the household literature clearly highlights the gendered nature of EA adoption and practice through the medium of the domestic division of labour (p.26). For example, Carlsson-Kanyama and Lindén (2007) reported that EAs which involved a change in everyday habits and routines were usually carried out by the female spouse while EAs which involved structural changes such as installing insulation were the male spouse's responsibility. Indeed, Grønhøj and Ölander (2007, p.231) noted that *"it is possible to trace the remains of a gender based inside-outside division of household responsibilities with regard to pro-environmental practices"*, and *"the assignment of gender roles to oneself or to a partner often works to frame the possible range of action, and thereby the domain of responsibility"*. Carlsson-Kanyama and Lindén (2007) and Grønhøj and Ölander's (2007) findings suggest that where all individuals are generally responsible for EA adoption and practice across the EA repertoire in a shared role, this may take the form of male and female spouses taking responsibility for the adoption and practice of different EAs, as opposed to spouses sharing responsibility for each EA. Given the limited attention paid to this issue, the factors influencing general responsibility for EA adoption and practice across the EA repertoire requires further investigation, with the nature of shared general responsibility in particular need of exploration.

Types of environmental action repertoires

In terms of the relationship between the different EAs, three types of EA repertoire are conceptualised – generalised, action by action, and compensatory. This conceptualisation is drawn from the individual literature (in particular, the environmental psychology literature and the marketing literature) which has examined the

relationships between participation in different EAs. Therefore, the relevance of these patterns of participation in different EAs to household EA repertoires needs to be examined. The three types of relationship between EAs will now be outlined, beginning with the action by action pattern.

Within the environmental psychology literature, a lack of widespread correlations between participation in different EAs has often been identified, e.g. Tracy and Oskamp (1983-1984), Gatersleben (2001). Although some studies have reported positive correlations, e.g. Berger (1997), Thøgersen (2004), and there are reasons why participation in different EAs may not be correlated such as EA-specific external constraints (Thøgersen and Ölander, 2006), the general position of the environmental psychology literature is that participation in different EAs is not based on generalised environmental concern but that behaviour is determined by the specificities of each EA and situation (Thøgersen, 2004). Specifically within the marketing literature, Peattie (1999; 2001) argues that the 'green consumer' is not a consistent target and thus the emphasis should be on the purchase and purchase situation. McDonald et al. (2006), Oates et al. (2008) and Young et al. (forthcoming) have interpreted Peattie's (1999; 2001) point to state that the series of purchase decisions consumers make are not necessarily related to each other or underpinned by a driving philosophy of consumption. One of the three types of green consumer identified by McDonald et al. (2006) is in keeping with this point. 'Translators' participate in some EAs but not others and are motivated by a sense of 'doing the right thing'. Although such individuals are not deliberately change-seeking, they are apt to change their behaviour if they are provided with a rationale for doing so (hence the term 'Translator'). Such knowledge is invariably acquired passively in an uncritical manner, with word of mouth and opinion leaders being key sources. Thus, while the EA repertoire of a Translator may appear inconsistent to an outside observer, it is a coherent collection of EAs from the Translator's perspective, representing all the EAs that they know about and can see a clear benefit from engaging in. This repertoire is not underpinned by a holistic sustainability philosophy and is commonly built up in an incremental manner.

In contrast to the previous position of participation in different EAs being considered on an action by action basis, a more recent study in the environmental psychology literature by Thøgersen and Ölander (2006) found in favour of the existence of a general environmental stance guiding behaviour. Another of the three types of green consumer identified by McDonald et al. (2006) is in keeping with this issue. The lifestyle of an 'Exceptor' is underpinned by a personal philosophy of trying to minimise environmental impact whilst maximising social justice. Such individuals thus have a

sophisticated understanding of sustainability. Exceptors are change-seeking and are comfortable with personal sacrifice, alternative products and outlets. They actively seek information and may research products they buy in an in depth manner using specialist sources of information such as *Ethical Consumer* magazine with corporate and government information treated critically. Exceptors are so-called because although they participate in a wide range of EAs there is at least one aspect of their lives in which they step into mainstream consumerism. However, this exception to their lifestyle is accompanied by a specific justification and therefore no perceived conflict.

One consequence of a general environmental stance guiding behaviour is that participation in one EA may lead to participation in other EAs, referred to as the spill over of EAs in a virtuous circle by Thøgersen and Ölander (2003). The concept of spill over is rooted in social-psychological theories such as Festinger's (1957) theory of cognitive dissonance which maintains that individuals are driven to be consistent in their beliefs, attitudes and behaviours to avoid the unpleasant psychological tension of inconsistency, a position which found some empirical support from Thøgersen (2004).

Before the compensatory pattern of participation in different EAs is outlined, it is important to note that the third type of green consumer identified by McDonald et al. (2006) does not align with either the generalised, action by action or compensatory pattern of participation in different EAs. 'Selectors' are motivated by a single issue such as waste management or energy conservation and thus will partake in related EAs but not other EAs. Such individuals are not interested in sustainability in a holistic way and do not see their behaviour as contradictory. For their selected issue, Selectors may behave in the same manner as either Translators or Exceptors in terms of information seeking and change orientation, but all other issues are ignored.

In comparison to generalised and action by action patterns of participation in different EAs, the compensatory pattern has received less attention in the environmental psychology literature. The rationale underpinning compensatory behaviour is rather speculative in nature. For example, Thøgersen and Ölander (2003) postulated that individuals to some extent participate in easy to perform EAs in order to make it easier to avoid engaging in more demanding EAs. In terms of empirical evidence, Bratt (1999) found no support for a compensatory pattern of behaviour, although Thøgersen and Ölander (2003) reported more ambiguous findings.

Summary

This chapter has presented a conceptual framework of the adoption and practice of EAs in households which consists of two constituent frameworks, namely a framework of the adoption and practice of lone EAs in households, and a framework of patterns of adoption and practice across EA repertoires. Each constituent framework represents my interpretation of how the household literature, HDM literature and individual literature can be integrated in relation to the research issue, and is the product of an ongoing literature review shaped by the research findings. The elements of each framework which require further investigation and are subsequently advanced by the research findings have been made explicit. Such elements of the framework of the adoption and practice of lone EAs in households are:

- The spectrum of household member involvement in EA adoption in terms of general responsibility and the natures of the different involvement distributions.
- The framework of relative influence across the decision making process and the nature of the decision making process itself.
- The spectrum of household member involvement in EA practice and the natures of the different involvement distributions in relation to recycling.
- The skeletal forms of the different routes to EA practice and the desirability of these routes from a policy perspective.
- Communication within the household about EAs.
- The framework of decision making strategies and overt conflict-ridden and peaceful interpersonal influence processes, particularly the nature and means of socialisation influence from one household member to another.
- The 'underperformance' of existing recyclers.
- The incorporation of repetitive EA practice into domestic routines, particularly with respect to repeated acts and repeated purchases.
- The role of self-organisation strategies in the maintenance of recycling.
- How habitual behaviour is changed within the household.
- How activity types, individual characteristics, situational characteristics, and household characteristics influence household member involvement in EA adoption and practice.
- How relative interest is shaped in terms of determining factors.
- From where and how knowledge for action is sourced and related to the issue of communication within the household about EAs, how knowledge for action is transmitted through the household.

The elements of the framework of patterns of adoption and practice across EA repertoires are:

- The spectrum of general responsibility for EA adoption and practice across the EA repertoire and the nature of shared general responsibility.
- The factors which influence general responsibility for EA adoption and practice across the EA repertoire.
- The relationships between the different EAs of EA repertoires.

Chapter 3

Charting the research process

This chapter documents the process by which the two research questions – How are environmental actions adopted in households? How are environmental actions practiced in households? – were addressed, namely through a qualitative approach utilising household focus groups within a constructivist grounded theory methodology. ,

This chapter begins with the argument that the nature of the research issue and research questions necessitated a qualitative approach. This is followed by an outline of the paradigm of inquiry within which the research is situated – constructivism. The methodology of constructivist grounded theory and the rationale for its adoption is then examined. This is followed by discussion of the data collection method – household focus groups – and the rationale for their use. The order of these sections implies linearity in decisions relating to research design, however choices relating to paradigm of inquiry, methodology and data collection method were considered in parallel.

The chapter then turns to the more practical aspects of the study, firstly providing background information about the study location, the city of Sheffield. An overview of the focus group format and its development through a pilot study is then provided. This is followed by discussion of the household recruitment strategy, the sampling rationale and an overview of the participating households. A reflexive account of the data collection process is then provided. Ethical issues are discussed within these sections.

The focus then turns to documenting how data analysis proceeded. The chapter concludes with a note about how the findings are presented in the subsequent chapters.

Addressing the research questions: the need for a qualitative approach

Qualitative research is an umbrella term for a vast array of data collection methods and analysis techniques which may be underpinned by all possible epistemological positions, including those traditionally associated with quantitative methods (Symon and Cassell, 2004). As will be documented in the following section, my philosophical beliefs about the nature of inquiry fit most comfortably with the constructivism paradigm (Guba and Lincoln, 1994; Lincoln and Guba, 2000; Guba and Lincoln, 2005), a 'worldview' which is typically associated with qualitative rather than quantitative research. However, it would be false to create the impression that the selection of a qualitative approach in the first instance 'flowed from' a subscription to the constructivism paradigm. Indeed, as a novice social science researcher with a background in the natural sciences, the early stages of the research process were characterised by uncertainty about my philosophical positioning, but a definite preference towards the use of qualitative approaches. Thus, in the first instance the pragmatic argument that the choice between qualitative, quantitative or mixed methods approaches should be determined by the nature of the research issue and research questions (Bryman, 1988) had most resonance. It is acknowledged that while the research questions stemmed from the gaps in the EA participation literature, their actual formulation was not an entirely neutral activity due to my preference towards qualitative research (Annells, 1996). However, regardless of my philosophical positioning, there remained a strong pragmatic rationale for the adoption of a qualitative approach which will now be examined.

The following discussion highlights the fit between a number of the characteristics of qualitative research and the nature of the research issue and research questions. This discussion is not intended to be a comprehensive examination of the characteristics of qualitative research, see for example Patton (2002), but rather to highlight the specific characteristics of importance to this research, a format which is often employed (Cassell and Symon, 1994). This draws on Daly's (1992a) position that qualitative methods are particularly amenable to the study of families (and thus households). Discussing the characteristics of qualitative research inevitably involves some comparisons with quantitative research. However, this is not an attempt to pit qualitative research against quantitative research (I do not believe that qualitative research is 'good' and quantitative research is 'bad'), but rather an explanation of why a qualitative approach was more appropriate in this context. Within this discussion the term 'qualitative research' is used in its broadest sense, thus encompassing the three

broad types of qualitative methods (i.e. participant observation, interviewing and document analysis) and data in the form of text and images.

Qualitative research is concerned with understanding the meanings that participants hold about the phenomena under investigation, inherently recognising that meanings are subjective (Cassell and Symon, 1994; Creswell, 2007). Households constitute a collection of individual interests and experiences as well as being groups that construct shared meanings (Daly, 1992a). Within the household literature, Åberg et al. (1996) stressed the importance of not assuming that household members have identical values in relation to EA participation. However, the acceptance and practice of EAs in some instances can be attributed to other household members (Grønhøj, 2006; Grønhøj and Ölander, 2007). Thus, there is a concordance between households as loci of individual and shared meanings and the assumptions of qualitative research that focus on capturing that meaning (Daly, 1992a).

In contrast to quantitative research which perceives the phenomenon under investigation as the outcome of a finite set of variables and causal relationships, qualitative research takes a holistic view of the phenomenon by focusing on identifying the many factors involved and developing a complex picture of how these factors interact (Cassell and Symon, 1994; Patton, 2002; Creswell, 2007). This issue is particularly pertinent given the range of factors which may have a bearing on EA adoption and practice in households as the conceptual framework presented in the previous chapter demonstrates. In relation to the holistic view of the phenomenon under investigation, qualitative approaches are sensitive enough to allow the detailed analysis of processes (Cassell and Symon, 1994; Patton, 2002; Bryman and Bell, 2003). As such, qualitative research is well positioned to understand the range of processes involved in EA adoption and practice in households through its ability to examine patterns of interaction, dynamics, negotiations, transitions, change, and the meanings of spatial and temporal contexts (Daly, 1992a; 2007).

Qualitative methods are particularly useful for examining aspects of household reality which are hidden from researchers because of their apparent mundaneness (Daly, 1992a). By entering participants' life worlds rather than remotely administering a survey, qualitative researchers are in a good position to tap into mundane behaviour (Daly, 1992a). The mundane nature of EA practice will be discussed later (p.63).

In contrast to quantitative research which is concerned with specific hypotheses, categorical frameworks and analytical rules, qualitative research is concerned with

emergent themes and idiographic descriptions guided by analytical principles (Cassell and Symon, 1994; Patton, 2002). As such, qualitative research is typically inductive in nature (Patton, 2002; Creswell, 2007). Qualitative research is thus commonly advocated when partial or inadequate theories exist in relation to the phenomena under investigation, e.g. Creswell (2007). The emergent nature of qualitative research is also evident with respect to research design which is flexible and able to change course in response to emergent themes rather than the design of quantitative research which is typically rigidly defined from the outset (Cassell and Symon, 1994; Patton, 2002; Creswell, 2007). The emergent nature of qualitative research in both these respects is significant given the paucity of work on EA adoption and practice from the household perspective.

Situating the research within the constructivism paradigm of inquiry

A paradigm of inquiry refers to *"the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways"* (Guba and Lincoln, 1994, p.105). While all researchers should be explicit about the paradigm which underpins their research approach (Guba and Lincoln, 1994; Creswell, 2003), this is particularly important in relation to qualitative research. Given the array of philosophical approaches and data collection and analysis techniques which constitute qualitative research, one set of evaluation criteria cannot be universally applied to qualitative research; as such evaluation should focus on the extent to which the research *"consistently embraces the particular methodological principles that are sanctioned by its a priori philosophical commitments"* (Johnson et al., 2006, p.131).

The basic and inter-related beliefs that characterise a paradigm of inquiry refer to three fundamental questions (Guba and Lincoln, 1994):

- Ontology: what is the form and nature of reality and therefore, what can be known about it?
- Epistemology: what is the nature of the relationship between the researcher and what can be known?
- Methodology: how can the researcher go about finding out whatever he/she believes can be known?

Guba and Lincoln (1994; 2005) and Lincoln and Guba (2000) discuss five paradigms which may underpin qualitative research – positivism, postpositivism, critical theory and related ideologies, constructivism, and the participatory/cooperative paradigm. These paradigms are commonly used in qualitative family research (Daly, 2007). Guba and Lincoln (1994) contend that a paradigm represents a set of basic beliefs that *"must be accepted simply on faith"* (p.107) as they *"are not open to proof in any conventional sense"* (p.108). Thus, this discussion will focus on outlining the constructivism paradigm within which this research is situated which supposes a relativist ontology, a transactional and subjectivist epistemology, and a hermeneutical and dialectical methodology (Guba and Lincoln, 1994; Lincoln and Guba, 2000; Guba and Lincoln, 2005) (Table 3).

Table 3. Ontological, epistemological and methodological beliefs of the constructivism paradigm of inquiry (after Guba and Lincoln, 1994).

Relativist ontology	Realities are apprehendable in the form of multiple, intangible mental constructions, socially and experientially based, local and specific in nature (although elements are often shared among many individuals), and dependent for their form and content on the individual persons or groups holding the constructions. Constructions are not more or less 'true', in any absolute sense, but simply more or less informed and/or sophisticated. Constructions are alterable, as are their associated 'realities'.
Transactional and subjectivist epistemology	The researcher and the object of the research are assumed to be interactively linked so that the 'findings' are literally created as the investigation proceeds. The conventional distinction between ontology and epistemology disappears.
Hermeneutical and dialectical methodology	The variable and personal nature of social constructions suggests that individual constructions can be elicited and refined only through interaction between and among researcher and participants. These varying constructions are interpreted using conventional hermeneutical techniques, and are compared and contrasted through a dialectical interchange. The final aim is to distil a consensus construction that is more informed and sophisticated than any of the earlier constructions.

Thus, a constructivist approach is concerned with:

> *"...understanding the complex world of lived experience from the point of view of those who live it...This world of lived reality and situation-specific meanings that constitute the general object of investigation is thought to be constructed by social actors. That is, particular actors, in particular places, at particular times, fashion meaning out of events and phenomena through prolonged complex processes of social interaction involving history, language and action...to understand this world of meaning, one must interpret it. The inquirer must elucidate the process of meaning construction and clarify what and how meanings are embodied in the language and actions of social actors. To prepare an interpretation is itself to construct a reading of these meanings; it is to offer the*

inquirer's construction of the constructions of the actors one studies" (Schwandt, 1994, p.118).

This research is rooted in the problem of environmental degradation. Consequently, it is important to pre-emptively address the criticism commonly levelled at constructivists, namely that they deny the 'reality' and independent existence of environmental problems (Burningham and Cooper, 1999). Burningham and Cooper (1999) argue that this characterisation of 'extreme' constructivism bears little likeness to the contextual approach actually used in the majority of empirical studies in which the reality of environmental problems is not doubted. This research is concerned with households' constructed realities of EA adoption and practice which involves constructed realities of environmental problems. This is not to say that environmental problems themselves do not have an objective basis. Thus, as Burningham and Cooper (1999, p.304) summarise, contextual constructivism maintains *"a distinction between what participants believe or claim about social conditions and what is 'in fact' known about the conditions"*.

Methodological approach: constructivist grounded theory

Operating at a more applied level than the paradigm of inquiry, is methodology, which provides *"specific direction for procedures in a research design"* (Creswell, 2003, p.13). Methodology involves consideration of *"the relationship between on the one hand inherited theories, concepts, and ontological assumptions, and on the other hand, techniques and practices used in the process of empirical inquiry"* (Daly, 2007, p.83-4). Creswell (2003; 2007) discusses five methodological approaches commonly adopted in qualitative research – narrative research, phenomenology, grounded theory, ethnography, and case study. These methodologies are commonly used in qualitative family research (Daly, 2007). It is acknowledged that qualitative investigation can proceed without such methodological theory (Avis, 2003). Nonetheless, I adopted grounded theory methodology which consists of *"systematic inductive guidelines for collecting and analysing data to build middle-range theoretical frameworks that explain the collected data"* (Charmaz, 2000, p.509). A number of issues influenced my decision to adopt this methodology, many of which parallel Goulding's (2002) rationale for the use of grounded theory methodology in her study of heritage consumption. Firstly, the central objective of grounded theory is theory building, typically substantive theory, i.e. relating to a specific substantive area. Given the lack of an integrated theory of EA adoption and practice in households, theory development as opposed to description, was appealing. Secondly, there are different versions of grounded theory

methodology each with different philosophical underpinnings. In particular, the version espoused by Charmaz (2000; 2006) is underpinned by constructivism, thus permitting methodological congruence with my paradigmatic positioning. Thirdly, grounded theory has a set of established procedures for data collection and data analysis, which offered structure and a sense of security to me as a novice qualitative researcher.

Grounded theory was first developed by Glaser and Strauss (1967) with the following defining components (Charmaz, 2006):

- Simultaneous involvement in data collection and analysis
- Constructing analytic codes and categories from data, not from preconceived logically deduced hypotheses
- Using the constant comparative method, which involves making comparisons during each stage of the analysis
- Advancing theory development during each step of data collection and analysis
- Memo-writing to elaborate categories, specify their properties, define relationships between categories, and identify gaps
- Sampling aimed toward theory construction, not for population representativeness
- Conducting the literature review after developing an independent analysis

Since its inception, grounded theory methodology has evolved to the extent that there are now three commonly adopted versions – Glaserian grounded theory (Glaser, 1978; 1992), Straussian grounded theory (Strauss and Corbin, 1990; 1994; 1998), and constructivist grounded theory (Charmaz, 2000; 2006). While the defining components of Glaser and Strauss' (1967) original grounded theory largely remain in all three versions, each version is underpinned by different ontological and epistemological positions and offers a different procedural approach. Heath and Cowley (2004) suggest that the novice researcher should select the approach that best suits their cognitive style, i.e. selection based on procedural approach. However, given that there should be congruence between the researcher's paradigm of inquiry and methodology, it is more prudent to select a version of grounded theory based on its underlying philosophical assumptions (Goulding, 1999).

The philosophical beliefs underpinning Glaserian and Straussian grounded theory have not been made explicitly clear by the authors themselves and have therefore been left for others to tease out from the original texts (Bringer, 2002). According to Charmaz (2000, p.510), Glaserian grounded theory *"often comes close to traditional positivism,*

with its assumptions of an objective, external reality, a neutral observer who discovers data, reductionist inquiry of manageable research problems, and objectivist rendering of data". Annells (1996) and McCann and Clark (2003) position Glaserian grounded theory within the postpositivism paradigm. There is more debate surrounding the paradigmatic position of Straussian grounded theory. According to Annells (1996), Straussian grounded theory is constructivist in nature. Charmaz (2000) acknowledged that Straussian grounded theory exhibits both objectivist and constructivist assumptions but argued that overall it remained objectivist:

> *"Strauss and Corbin's (1990; 1998) stance assumes an objective external reality, aims toward unbiased data collection, proposes a set of technical procedures, and espouses verification. Their position moves into postpositivism because they also propose giving voice to their respondents, representing them as accurately as possible, discovering and acknowledging how respondents views of reality conflict with their own, and recognising art as well as science in the analytical product and process"* (Charmaz, 2000, p.510).

However, as Mills et al. (2006) noted, the oscillation between postpositivism and constructivism language in Straussian grounded theory, has led some researchers to remark that *"people can find support in it for any ontology they wish"* (MacDonald and Schreiber, 2001, p.44).

The differences between the procedural approaches of Glaserian and Straussian grounded theory have been well discussed, e.g. McCann and Clark (2003), Boychuk Duchscher and Morgan (2004), Heath and Cowley (2004). However, in essence Glaserian grounded theory emphasises the emergence of theory from the data through constant comparative analysis. In contrast, Straussian grounded theory provides a much more structured approach to data analysis. Researchers are commonly reminded that the Glaserian and Straussian versions represent distinct approaches to grounded theory which should not be blurred, e.g. Goulding (2002), Boychuk Duchscher and Morgan (2004).

Charmaz (2000; 2006) offers an alternative to what she terms 'objectivist grounded theory', a collective term for Glaserian and Straussian grounded theory, which is underpinned squarely by constructivism:

> *"[Constructivist grounded theory] explicitly assumes any theoretical rendering offers an interpretive portrayal of the studied world, not an exact picture of it. Research participants' implicit meanings, experiential views – and researchers' finished grounded theories – are constructions of reality"* (Charmaz, 2006, p.10).

Procedurally, constructivist grounded theory is a set of principles and practices – flexible guidelines rather than methodological rules (Charmaz, 2000; 2006). I opted for

the constructivist version of grounded theory as it was congruent with my paradigm of inquiry. However, as a novice qualitative researcher, I found Straussian grounded theory's structured approach to data analysis, particularly the detailed analytical procedures of Strauss and Corbin (1998), appealing as they offered a form of guidance and security (Goulding, 2002). Additionally, Straussian grounded theory can be approached from a constructivist perspective. Indeed, Bringer (2002) utilised Strauss and Corbin's (1990; 1998) analytical procedures underpinned by constructivism in her study of sexual exploitation in sport. Therefore, in the first instance, I opted to utilise the analytical procedures of Strauss and Corbin (1998) although approached firmly from a constructivist perspective. How this played out in practice will be discussed later in the section documenting the data analysis process.

In a similar vein to Johnson et al.'s (2006) position that the evaluation of qualitative research should focus on the extent to which the research embraces the methodological principles stemming from the underlying philosophical position, Sparkes (2001, p.549) proposes *"a respectful acknowledgement of the differences between alternative forms of inquiry, in terms of their processes and products, so that each could be judged using criteria that are consistent with its own internal meaning structures"*. Given the adoption of the grounded theory methodology, which has its own set of evaluative criteria, evaluation of this research should be within this context. Charmaz (2006) refers to the following criteria as guidelines for evaluating constructivist grounded theory: credibility, originality, resonance, and usefulness. The criterion of credibility relates to both the research process and outcomes. Strauss and Corbin (1998) offer a number of criteria for evaluating the research process which focus on sampling and analysis. Thus, in order to allow evaluation of the research process, particular attention will be paid in this chapter to discussing sampling and documenting the data analysis process. Attention to these issues also represents general good practice in qualitative research in terms of transparency (Bringer et al., 2004; Meyrick, 2006). The research outcomes will be considered against Charmaz's (2006) criteria of credibility, originality and usefulness in the final chapter.

Method of data collection: household focus groups

There are three broad types of data collection methods used in qualitative research – participant observation, interviewing and document analysis. This research utilised a single method of interviewing, namely household focus groups. The nature of focus groups are summarised by Morgan and Krueger (1993, p.2):

> *"As a form of qualitative research, focus groups are basically group interviews, although not in the sense of an alternation between a researcher's questions and the research participants' responses. Instead, the reliance is on interaction within the group, based on topics that are supplied by the researcher who typically takes the role of a moderator. The hallmark of focus groups is their explicit use of group interaction to produce data and insights that would be less accessible without the interaction found in a group."*

A household focus group is a focus group where the participants are members of the same household. The terms 'household focus group' or 'family focus group' are not vastly utilised in the qualitative family research literature. Indeed, authors more commonly refer to interviewing couples together, e.g. Allan (1980), Daly (1992b), or use the term 'family interview', e.g. Åstedt-Kurki and Hopia (1996). However, these authors all highlight the interaction between participants to a greater or lesser extent. I have opted for the term 'household focus group' rather than 'household interview' because the explicit use of group interaction was central to the employment of this method. Furthermore, the focus group literature and the qualitative family research literature make a number of parallel points which remain unlinked. Thus, by using the term 'household focus group' I have also integrated these two literatures and added to the diversity of ways in which focus groups are used.

Interviewing offered the potential to generate rich and detailed accounts of EA adoption and practice in households. Three scenarios were considered – interviewing one household member, interviewing multiple household members, and interviewing all household members together as a group (Åstedt-Kurki et al., 2001). In the first instance, it is pertinent to examine why interviewing one household member was not pursued. A study in which the individual is the participatory unit can still maintain a household perspective if the issue of the social context of the household is addressed. However, Kirchler et al. (2001) highlighted a number of studies in the HDM literature which have shown that the construction of a shared experience varies considerably between household members. Indeed, one household member *"can only offer their version of shared experiences, not the reality as perceived and reconstructed by all"* (Kirchler et al., 2001, p.96). Uphold and Strickland (1989) and Åstedt-Kurki and Hopia (1996) also made similar points.

Thus, in comparison to interviewing one household member, interviewing multiple household members or interviewing all household members as a group offered a broader perspective on EA adoption and practice in the household (Åstedt-Kurki et al., 2001). There is a strong rationale for the use of focus groups as opposed to interviewing multiple household members separately. This argument draws upon a

number of parallel issues raised in the focus group literature and the qualitative family research literature, most comprehensively articulated by Allan (1980).

Allan (1980) notes that when couples are interviewed together, one spouse may directly or indirectly corroborate or challenge the statements of the other. Kitzinger (1994) used focus groups with pre-existing groups and identified two styles of interaction – complementary interactions in which there is consensus around particular issues and argumentative interactions in which participants disagree or challenge each other. Thus, one of the advantages of using household focus groups is that they provide direct evidence about similarities and differences in household members' opinions and experiences as opposed to reaching such conclusions from post interview analysis of individual statements (Morgan, 1997).

As noted above, the construction of a shared experience may vary considerably between household members (Kirchler et al., 2001). Kirchler et al. (2001) attributed this in part to the difficulties in recalling and constructing mundane events. The incorporation of recycling tasks into domestic routines (Oates and McDonald, 2002; Pocock et al., 2008) points to the mundane nature of recycling. Specifically, Oates and McDonald (2002) noted their interviewees had difficulty in articulating how they practiced recycling, typically commenting that 'it just gets done'. Furthermore, Oates and McDonald (2002) and DETR (1998) reported that longstanding recyclers and composters respectively found recalling why they had first started problematic. Thus, the ability of household members to supplement information given by others and jog one another's memory in household focus groups was regarded as advantageous. This point has been raised in relation to interviewing couples together by Allan (1980). Similarly, within the focus group literature, Kitzinger (1994) discussed the advantages of using pre-existing groups as major sites of 'collective remembering'. Furthermore:

> *"The fact that research participants already knew each other had the additional advantage that friends and colleagues could relate each other's comments to actual incidents in their shared daily lives. They often challenged each other on contradictions between what they were professing to believe and how they actually behaved"* (Kitzinger, 1994, p.105).

Kitzinger's (1994) point has particular resonance with the examination of EAs. It has long been documented in the EA participation literature that self-reported behaviour is often an over-estimation of actual behaviour (Barker et al., 1994; Corral-Verdugo, 1997; Perrin and Barton, 2000). Tucker (2003) notes two explanations of relevance. Firstly, the tendency of people to exaggerate their behaviour when the actions in question are perceived to be morally good. Secondly, the accuracy of recall and

differences in interpretation of what constitutes the action in question. Household focus groups offer a means of cross-questioning household members which may facilitate more cautious accounts of attitudes and behaviour (Lam and Cheng, 2002). The qualitative family research literature also notes that when couples are interviewed together, they *"tend to keep each other honest"* (Daly, 1992b, p.108).

Allan (1980) also notes that when couples are interviewed together, the actual interaction between spouses constitutes data not readily obtainable in other ways. In other words, this form of interviewing *"affords an opportunity to witness how the couple perform together, how they attempt to support and influence one another and how they cope with disagreement"* (Allan, 1980, p.208). There is a link here with Lunt and Livingstone's (1996, p.85) argument that some researchers conceive focus groups as *"simulations of social relations, or rather, as social occasions in themselves that bear sufficient resemblance to the social occasions under study"*, e.g. Burgess et al. (1991). Kitzinger (1994) reminds researchers that although *at times*, focus groups may approximate to participant observation, focus groups are artificially set up situations. Given the participant observation was not a practical means of addressing the research questions, the ability to observe the interaction of household members in a focus group (albeit in a somewhat contrived situation), was an important advantage.

While there is a strong rationale underlying the adoption of household focus groups, it is acknowledged that there are disadvantages associated with this method. For example, there is the potential for issues of conflict not to emerge due to household-presentational concerns (Daly, 1992b). In her study of EA adoption and practice in households, Judkins (2004) opted to interview wives and husbands separately because with joint interviews *"there is a chance that individual partners would omit information from or minimize their responses to the researcher's inquiries due to the presence of their partner"* (p.47). It is also recognised that in comparison to interviewing multiple household members, household focus groups provide less depth and detail about the opinions and experiences of any given household member. The purpose of this discussion has not been to suggest that household focus groups are likely to produce 'better' data than interviews with multiple household members, as this issue is largely unknown (Catterall and Maclaran, 1997), but that household focus groups were appropriate to the research issue. Indeed, interviewing household members together in relation to EA adoption and practice was also Carlsson-Kanyama and Lindén's (2007) method of choice.

In their examination of EAs in households, Grønhøj (2006) and Grønhøj and Ölander (2007) interviewed spouses separately, then together as a couple. This allowed a comparison of the spouses' responses, and subsequent discussion of differences in the joint interview. I also considered a similar approach but decided against it for two reasons. Firstly, the increased amount of data from each household would have meant a reduction in the number of households in the sample. Given the lack of work on EA adoption and practice in households I felt sacrificing some depth for breadth was appropriate. Secondly, a more time-demanding format for participating households would have created more difficulties in recruiting households which were only marginally committed to EAs resulting in a less varied sample in terms of EA repertoires. These reasons also underpinned my decision not to carry out a second focus group with the same household, an approach utilised by Åstedt-Kurki and Hopia (1996). This issue will be returned to later (p.80).

Having examined the theoretical aspects of the research design, the discussion will now turn to the practical aspects of data collection. This discussion will begin with an overview of Sheffield and its recycling infrastructure which provides the context for the subsequent discussion of the focus group format and sampling rationale in this chapter, and also the presentation of the findings in the subsequent chapters.

Sheffield and its recycling infrastructure

The decision to recruit households from Sheffield was largely one of convenience. Given that I studied, lived and worked in the city, I had good knowledge of local issues, the recycling infrastructure and the places and networks I could tap into to recruit households. However, Sheffield also provides a particularly interesting context within which to examine recycling adoption and practice in households, due to the recycling infrastructure consisting of limited kerbside recycling services (which were still relatively new during the data collection period) and bring bank facilities.

The city of Sheffield in northern England, which is the third largest metropolitan district in England, has a population of over half a million people (Sheffield City Council, 2008c). Sheffield is home to two universities, and its population includes more than 40,000 full time students (2005 figures) (Lovatt, 2007). The 2007 Indices of Deprivation for Sheffield demonstrated that 76 out of the 339 Super Output Areas (SOAs) in Sheffield are in the top 10 per cent most deprived nationally. At the other end of the spectrum, 53 SOAs are the top 20 per cent least deprived (Sheffield City Council, 2008b). In terms of ethnic diversity, 14 per cent of the Sheffield population are from black and minority ethnic groups (Sheffield City Council, 2008c). More than a

quarter of the 220,000 households in Sheffield rent homes from the Council, with a further 15 per cent renting from other social or private landlords (Sheffield City Council, 2007).

Before Sheffield's recycling infrastructure is discussed it is important to point out that data was collected from March 2004 to December 2005. In 2001, Sheffield City Council awarded the contract for refuse collection, waste disposal, recycling and energy recovery to Onyx Sheffield (which in January 2006 became Veolia Environmental Services Sheffield). As part of this contract, the city's energy recovery facility (often referred to locally as the 'incinerator') was upgraded, and the five household waste recycling centres (HWRCs) (often referred to locally by their old name of 'dump it sites') were refurbished in 2003. In May 2003, a kerbside collection service for paper/card was rolled out across the city (which brought to an end a multi-material kerbside collection service using blue boxes in limited areas of Sheffield). After households received a leaflet outlining the service, they were issued with a 140 litre blue bin with a sticker attached giving the collection dates (once every 4 weeks). After this calendar period ended, households were issued with a card giving further collection dates and more specific information about desirable items and contaminants (the blue bin accepts all types of paper/card with the exception of food-contaminated items and Tetra Pak-type cartons). After this calendar period ended, the blue bin sticker approach was readopted.

For most households, materials other than paper/card can only be recycled at bring banks in supermarket car parks, etc., across the city. During the data collection period banks were available for glass, paper, drink cans, food cans, plastics, aluminium foil, textiles, shoes, books, CDs, and videos, although not all banks were necessarily available at each site. Drink cans, food cans, aluminium foil, and plastics are all deposited in the same bank, and plastics encompass bottles, food trays, tubs, etc., and plastic bags. The labelling on banks for food/drink cans and plastics has not always accurately portrayed what should be put in them. For example, during much of the data collection period these banks inaccurately stated that food cans should not be deposited. The HWRCs also have additional facilities for recyclables such as cardboard, motor oil, domestic batteries, green waste, etc.

In September 2004, a pilot scheme for the collection of garden waste began in the south east of the city. Around 45,000 households were provided with a green bin which is collected on a fortnightly basis for most of the year, but reduced to once every 4 weeks over the winter. In April 2005, a pilot scheme for the collection of textiles

began which was expanded to include food and drink cans in July 2005. Around 12,000 households in various areas of the city were provided with pink sacks for textiles and clear sacks for cans to be collected once every 4 weeks on the same day as the blue bin.

In January 2003, *Let's sort it...Sheffield*, a 3 year waste and recycling awareness campaign administered by the consultancy Enventure was launched. Communications included leaflets, posters and advertising on bill boards, bus shelters and buses, and a website. Lastly, reduced price composters were available from Onyx Sheffield during the data collection period.

Understanding the recycling infrastructure in Sheffield allows Sheffield City Council's annual household waste recycling and composting rates to be considered in context: from 1998 to 2003 recycling rates fluctuated between 4 and 5 per cent whereas in 2003/04 (incorporating the introduction of the blue bin service) the recycling rate was 12 per cent (Defra, 2005). The recycling rate was just over 17 per cent in 2004/05 (Defra, 2006a), 19.4 per cent in 2005/06 (Defra, 2006b), just under 25 per cent in 2006/07 (Defra, 2007a), and 27.3 per cent in 2007/08 (Defra, 2008c). This latter figure compares with a recycling rate of 34.5 per cent in England in 2007/08 (Defra, 2008c). The government's most recent waste strategy for England gave a household waste recycling and composting rate target of at least 40 per cent by 2010, 45 per cent by 2015, and 50 per cent by 2020 (Defra, 2007b). Sheffield is currently working towards a recycling and composting rate target of 30 per cent by 2010/11 (Sheffield City Council, 2008a).

Focus group format and its development

Focus groups were carried out with 29 households, 25 of which were multi-person households (households 1-25) representing couples, families, single parent families, sharers (professionals, students and siblings), and homeowners/lodgers. One focus group was carried out with four single person households (households 26-29), which concluded data collection. The first section documents how the focus group format was developed through a pilot study of six households (households 1-6). The second section provides an overview of the focus group format in the main study of 23 households (households 7-29). Issues such as obtaining informed consent and wrapping up the focus group are discussed here but these were also elements of the pilot study focus groups.

Pilot study: development of the focus group format

At the outset of the data collection period, I had two issues of concern. Firstly, although I had semi-structured interviewing experience, I had no experience of moderating focus groups which require additional interviewing skills relating to mastering group dynamics and knowledge processing (Morgan, 1998; Åstedt-Kurki et al., 2001). Secondly, I remained concerned that facilitating discussion of EA adoption and practice in sufficient detail would prove difficult (DETR, 1998; Oates and McDonald, 2002) despite the advantages afforded by household member interaction. Thus, in order to develop moderation skills and a workable focus group format, a pilot study was initiated. Focus groups were carried out with six households from March to July 2004. In order to keep things more manageable, these focus groups focused exclusively in the adoption and practice of recycling/composting, and varied in duration from around 45 minutes to around 1.5 hours.

Ideally, focus groups should be held in a location which is convenient for the participants and provides a comfortable environment to facilitate discussion, e.g. Morgan (1998). The home of the household fulfilled both these criteria. Åstedt-Kurki et al. (1999) interviewed families in their homes about their experiences of health in everyday life and concluded that the interview location *"no doubt contributed to the interviewees' (especially children's) sense of security and in this way certainly made it easier for them to 'open up'"* (p.709). This issue will be returned to later (p.78). In terms of my personal safety, a friend was notified of the household focus group location and timings.

Morgan (1998) notes that people may be willing to participate in focus groups if the topic relates to a cause that matters to them. Therefore, I anticipated that recruiting households of enthusiastic recyclers would not be problematic. However, an issue which ran through the research design and household recruitment process was the aim of creating a varied sample in terms of EA repertoires. Therefore, in order to assist the recruitment of households at the lower end of the spectrum I offered dual incentives of a £10 gift voucher and a takeaway pizza. The latter incentive appeared to be very successful across the entire study in encouraging all household members to be present at the agreed time.

Four out of the six households in the pilot study were recruited through personal contacts. This was a conscious choice as knowing at least one household member made the situation less daunting and also allowed me to seek honest feedback about

the focus group. The other households were recruited through targeted recruitment which will be discussed later (p.76).

It is commonly recommended that focus groups should begin with an ice-breaker or warm up exercise, e.g. Krueger (1998b). However, given that the participants were a pre-formed group this issue was felt to be of less importance (Munday, 2006). Nonetheless, in order to get the household 'into the swing' of talking about everyday activity, but also to provide potentially useful information, I began the discussion by asking about the domestic division of labour. This was followed by examination of recycling/composting practice and then the adoption of these EAs because I anticipated that discussion of the former may then facilitate recall and discussion of the latter.

In the first three focus groups, I employed solely verbal questioning. After transcription, I reflected on how these three focus groups had gone. I recognised that I did not always actively listen to the participants which sometimes resulted in me failing to pick up on issues of interest. I attributed this in part to 'having my head in the questioning schedule'.

In similar research on decision making processes leading to the purchase of sustainable technologies, Oates et al. (2008, p.354) noted that *"participants initially found it difficult to appreciate the 'micro' nature of this kind of research"*, which was also very much the case here. Households generally found it difficult to discuss recycling adoption and practice in adequate detail unless prompted to do so. However, the more the household was prompted the more the focus group proceeded like a group interview, i.e. there was little interaction between household members. This issue was particularly prominent in relation to recycling adoption. As discussed in the previous chapter, the decision making process is conceptualised as a three stage process of need recognition, information search and final decision (p.27-8). During the first three focus groups I experimented with different formulations of the decision making process such as a four stage process of need recognition, information search, alternative evaluation and final decision utilised by Webster (1994) and Levy and Lee (2004) for example, and Kirchler et al.'s (2001) more comprehensive model of joint decision making involving both egoistic and altruistic evaluation of alternatives and considerations of power and harmony. Davis and Rigaux (1974) recognised the practical difficulties of asking households to break down the decision making process into many different stages. Indeed, this appeared to stifle discussion as opposed to facilitating the construction of more detail. Oates et al. (2008) and Young et al.

(forthcoming) tapped into the intricacies of the decision making process using interview techniques such as critical incident techniques (Bryman and Bell, 2003; Chell, 2004) to focus in on the purchase and provide more detailed data, and laddering (Reynolds and Gutman, 1988) to uncover further detail about motivating values and information sources. Although employment of these methods would have produced more detailed data, this was not compatible with examining the adoption and practice of a range of EAs in one focus group of reasonable duration. Thus, I decided to focus prompting around need recognition, information search and final decision as this covered the key aspects of the decision making process without being too prescriptive about the nature of the process, and focus on obtaining a sufficient amount of detail about the decision making process accepting that this was unlikely to equate to the complex picture obtained by Oates et al. (2008) and Young et al. (forthcoming).

In response to these reflections I adopted a different approach in the fourth and fifth focus groups. Oates and McDonald (2002) documented how they changed their interview approach from simple verbal questioning to a more activity-based discussion in order to move beyond the response of 'it just gets done' and explore recycling practice in more depth. Similarly, I asked the household to diagrammatically represent how they practiced recycling on an A1 sheet. I provided an initial set of questions such as: Where do you store recyclables?; Who puts paper/card in the blue bin?; Who puts the blue bin out for collection?; Who takes recyclables to the banks?; Who puts organic waste in the composter?; What prompts these events? These questions were drawn from the application of Pieters' (1991) three stage recycling process of separation, storage and removal to the recycling infrastructure in Sheffield. This activity helped to focus the participants' minds on the issue in hand and encouraged greater household member interaction; as such recycling practice was discussed in increased detail. Recycling adoption was still explored using solely verbal questioning and I felt that this aspect of the focus group would also benefit from being more activity-based.

In response to these reflections I adopted a slightly different approach in the sixth focus group. The activity relating to recycling practice was retained but the initial set of questions was presented on a series of prompt cards. This enabled me to outwardly see the issues that needed to be covered and articulate the types of issues to be considered, thus facilitating the focus group to move a little faster and creating an all round more interactive exercise. In relation to recycling adoption, I asked the household to construct a timeline from household formation to the present day on an A1 sheet marking on when recycling was adopted and any changes to recycling practice. This is not unlike Brook Lyndhurst (2004b) asking recyclers to describe their

'recycling journey'. Again, an initial set of questions were provided on a series of prompt cards such as: When did you start recycling?; When did you start blue bin recycling?; When did you start composting?; What prompted the change? With respect to recycling adoption and composting adoption, the household was probed about the decision making process focusing on need recognition, information search (including sources of knowledge for action and its transmission through the household) and final decision. The household was also probed about the detail surrounding changes to recycling practice. After reflecting on the sixth focus group, I was satisfied that I had 'perfected' a workable format. As such, household 7 marked the start of the 'main study' which focused on the adoption and practice of the range of EAs shown in Table 1 (p.8).

Main study: focus group format

Focus groups were carried out with 23 households from September 2004 to December 2005. These focus groups were conducted in the homes of the households, the one exception being the final focus group with four single person households which was conducted in a departmental common room. These focus groups lasted around two hours (the upper limit of the recommended duration of focus groups (Krueger, 1998a)).

Informed consent was sought from all participants in a verbal manner to avoid creating an overly formal atmosphere which may stifle discussion (Krueger, 1998b). The requirements for informed consent outlined by Saunders et al. (2003) were pulled together in a script shown in Appendix I (p.274). Data collection commenced prior to the introduction of the University of Sheffield's ethics review procedure which requires that a Participant Information Sheet is given to potential participants and that participants sign a Participant Consent Form.

At the beginning of the focus group session I set the tone of the discussion to create a permissive atmosphere (Krueger, 1998b). I also inquired about the context of household formation. This was followed by discussion of the domestic division of labour. The core of the focus group then consisted of four sections:

1. Establishing the EA repertoire
2. Exploring recycling/composting practice
3. Exploring recycling/composting adoption
4. Exploring wider EA adoption and practice and patterns of adoption and practice across the EA repertoire

The focus group format meant that recycling adoption and practice was examined in greater depth than other EAs in the EA repertoire. This was an inevitable consequence of paying particular attention to recycling/composting but also wanting to examine other EAs in a focus group of limited time. In short, in order to achieve breadth some depth was sacrificed. However, given that there is less detail associated with wider EA practice, which generally represents a single act unlike the process of recycling, this is not regarded as having an overly negative impact on the data collected. The four sections of the focus group will now be outlined.

1. Establishing the EA repertoire

The household was presented with cards corresponding to the EAs listed in Table 1 (p.8). The cards were presented in sectored batches to break down the activity and included an 'any other actions' card.

The household was asked to identify which EAs were evident in the household. It was stressed that the household could regard the EA as being evident even if it was only practiced by one individual and/or only some of the time, and that the EA did not necessarily have to be motivated by environmental reasons. This set the scene for the remaining sections of the focus group both in terms of time-keeping and issues to follow up. For example, the household often indicated the distribution of involvement in EA practice or whether EA participation was longstanding or represented more recent behaviour change.

2. Exploring recycling/composting practice

This section followed the format outlined earlier (p.70). The household was probed about a number of issues drawn from the partial framework of local concepts which was the result of the initial literature review and my personal experiences of recycling, as discussed in the previous chapter (p.17):

- Materials recycled/composted, i.e. paper/card, glass bottles/jars, food cans, drink cans, plastics, kitchen waste, garden waste
- Within-material behaviour, e.g. plastic bottles versus plastic tubs
- Contaminants, e.g. food-contaminated cardboard
- Influence of size of recyclable, quantity and location in the home on behaviour
- Nature of the act of separating and storing recyclables as opposed to binning them, e.g. habitual
- Homogeneous or heterogeneous behaviour across household members in relation to all these issues

- Sources of knowledge for action and its transmission through the household
- Why roles are specialised or shared

3. Exploring recycling/composting adoption

This section followed the format outlined earlier (p.70-1).

4. Exploring wider EA adoption and practice and patterns of adoption and practice across the EA repertoire

The wider EAs evident in the household (identified in the first section) were displayed. The household was asked to mark on the timeline from the previous section when these EAs were adopted and a prompt card was also laid out: What prompted the change? With respect to EA adoption, the household was probed about the decision making process focusing on need recognition, information search (including sources of knowledge for action and its transmission through the household) and final decision. With respect to EA practice, the household was probed about the involvement distribution, the nature of repetitive EA (repeated acts, repeated purchases) practice (e.g. habitual), and changes to repetitive EA practice. Once all EAs had been placed on the timeline and discussed, the household was probed about patterns of adoption and practice across the EA repertoire.

At the end of the focus group, I summarised the discussion and checked if this was an accurate representation and if there were any outstanding issues we should discuss (Krueger, 1998b). The household was then provided with written information about the study and use of data, asked if they would like a transcript and copies of the diagrams they produced (this was generally not the case), and filled in forms relating to their demographic and socio-economic profile so I could monitor sample diversity.

The format was modified slightly with respect to the focus group with four single person households. In order to establish each individual's EA repertoire, participants were provided with the list of EAs and were given a few moments to consider which EAs they participated in before relaying this to the group in turn. When exploring recycling practice, the activity was outlined in the same manner as above. Participants were given time to produce their diagram before presenting to the group while I noted issues for subsequent probing. The third and fourth sections proceeded in a similar manner and the order in which participants presented to the group first was alternated. Consequently, the full range of issues was not examined in as much depth as in other focus groups. However, as this was the final focus group I was primarily interested in

following up particular issues of interest and exploring their relevance to single person households.

It is pertinent to consider how the relatively structured nature of the focus groups fits with the grounded theory methodology. Charmaz (2006) notes that tensions between data collection strategies and what constitutes 'forcing' are unresolved in grounded theory; for example, Glaser (1998) cautions against using preconceiving interview guides. However, it is important to note that the focus group format was still flexible enough to allow household members to respond freely and allow discussion to lead into areas which may have not been considered prior to the focus group but which may be potentially relevant to the study (Goulding, 2002). It is also important to recognise that the relatively structured form stemmed from the difficulties in facilitating households to discuss EA adoption and practice in sufficient detail. In a similar fashion, Grønhøj (2006) employed vignettes in her interviews with couples to facilitate discussion about communication relating to EAs. Oates and McDonald (2002) employed a card-sorting activity to explore recycling practice. Thus, it is supported that the examination of EA adoption and practice is facilitated by the use of activities within interviews.

Sampling techniques, household recruitment strategy and overview of the households

Many types of sampling are described in the qualitative research literature and there is much confusion and overlapping of types of sampling (Coyne, 1997). As such, there is a need for clarity and detail in discussion of sampling techniques. Across the pilot study and main study as a whole, two sampling techniques were employed in keeping with the employment of a grounded theory methodology – purposeful sampling which was then superseded by theoretical sampling (Coyne, 1997; Cutcliffe, 2000).

Household sampling criteria were established prior to data collection. The first criterion related to the household types to be included in the study. Defining households with the emphasis on common accommodation meant that the range of household types evident in contemporary society (i.e. couples, families, sharers, single persons, etc.) were eligible for inclusion, as discussed in chapter 1 (p.11). The second criterion related to EA repertoires. Given that particular attention was to be paid to recycling/composting, households were eligible for inclusion in the sample if they participated in some form of recycling, regardless of which other EAs (if any) they engaged in. Recycling has commonly been found to be the most undertaken EA

(Brook Lyndhurst, 2004a; Gilg and Barr, 2005); therefore it seemed unlikely that households who did not recycle but participated in other EAs would volunteer for the study. Maximum variation was sought in relation to three factors – household type, recycling repertoire (i.e. the materials recycled on a day to day basis) and EA repertoire – in order to develop substantive theory applicable to households in their variety of forms and different levels of engagement in EAs (Cutcliffe, 2000). Within household type, maximum variation in terms of socio-economic characteristics was also sought but proved difficult to achieve.

Theoretical sampling is one of the defining features of grounded theory methodology. Strauss and Corbin (1998, p.201) define theoretical sampling as:

> *"Data gathering driven by concepts derived from the evolving theory and based on the concept of "making comparisons", whose purpose is to go to places, people, or events that will maximise opportunities to discover variations among concepts and to densify categories in terms of their properties and dimensions."*

Thus, theoretical sampling was employed once concepts had begun to emerge from the analysis of the initial focus groups. In some instances, households were specifically included because they demonstrated particular features relevant to developing concepts. Such concepts tended to be the main concepts highlighted in the subsequent chapters (e.g. having a system for recycling, a leader, and low relative interest in recycling) as this was the level of detail which could be ascertained when liaising with householders during the recruitment process. In some instances, households were included in order to maximise variation as discussed above or because they offered a perspective on a specific issue of interest. Such issues included carrying out an eco-renovation, previous access to the multi-material kerbside collection service which was replaced by the paper/card collection service, access to the green bin garden waste collection service, access to the kerbside collection of textiles and cans, installation of a solar panel, and very recent household formation. However, such households still provided the opportunity to give density and variation to developing concepts and in this sense, theoretical sampling was still proceeding (Strauss and Corbin, 1998).

There were two elements to the household recruitment strategy – core recruitment and targeted recruitment. Prior to commencing the main study, the core recruitment strategy was implemented which was underpinned by the principle of maximum variation. With respect to achieving maximum variation in terms of recycling repertoire and EA repertoire, I recognised the need to appeal to 'green' households and households who did not particularly perceive themselves as 'green' but participated in

EAs nonetheless. The first component of the core recruitment strategy was an A3 or A4 poster, which is shown in Appendix II (p.276). The poster was supplemented with flyers (A6 reproductions of the poster) and displayed in public places such as independent health food and wholefood shops, a vegetarian café, a recycling information bureau run by a local charity, the central and local libraries and a number of community centres across Sheffield.

I also used the poster text in an email to members of various local environmental organisations including Greenpeace South Yorkshire, Sheffield Friends of the Earth and Sheffield Green Party, recognising that this was way of reaching green households. I also posted the poster text on Sheffield Forum (an internet forum) and wrote to a number of local newspapers resulting in a short piece about my participant search in the Sheffield Star. The recruitment strategy was extremely successful in terms of quantity. However, it also resulted in receiving the unwanted and persistent attention of a local man whose numerous attempts to contact me became increasingly worrying. These incidents ceased once university security intervened.

When an interested householder made contact I outlined what participation in the study would involve and stressed that all household members must be willing to participate. I gathered information about household composition and inquired about the EA repertoire and other broad issues dictated by the needs of theoretical sampling. As grounded theory methodology entails simultaneous involvement in data collection and analysis and theoretical sampling, focus groups were arranged one or two at a time. Therefore, I asked for permission to keep the household's details on file (in accordance with the Data Protection Act 1998) with a view to contacting them at a later date.

At various points during the data collection and analysis process, targeted recruitment was also carried out. This was evident in the pilot study where I specifically sought families in order to gain experience of moderating focus groups including children. In addition, maximum variation sampling in terms of EA repertoire and theoretical sampling were not always possible within the pool of potential households generated by the core recruitment strategy. In order to find households with the required features, different strategies were employed including letter drops, contact networks and approaching people in relevant places, e.g. Sheffield Green Fair.

Table 4 provides details of the households which participated in the study. All names have been changed – where appropriate, pseudonyms have been chosen in keeping with participants' ethnicity and age group. The ages of children are given for reference.

Within household 7, Rachel did not participate in the focus group and Christopher was involved up until the end of the second section. Malcolm from household 16 did not participate in the focus group. Within household 21, Diane, Nicholas, Kian, Sean and Glenn were present at different times of the focus group and in different combinations. Caleb and Leila from household 24 were absent for the third section of the focus group.

Table 4. Details of the households that participated in the study.

Household number	Household type	Names (and ages of children)
1	Student sharers	Gayle, Anthony, Megan, Harry
2	Single parent family	Wendy and her children Sophie (15), Nathan (14)
3	Professional sharers	Jack, Martin, Aldous
4	Homeowner/lodger	Brian and his lodger Eleanor
5	Single parent family	Anita, Dominic (non-cohabiting partner) and her children Brendan (14), Craig (10), Lauren (6)
6	Professional sharers	Maria, Aaron, Robert
7	Family	Barry, Amanda and their children Christopher (8), Rachel (18 months)
8	Couple	Leah, Neil
9	Couple	Phil, Jane
10	Homeowner/lodger	Howard and his lodger Karen
11	Student sharers	Melissa, Natalie, Jenny, Ellie, Joanne, Kimberley
12	Family	Paul, Debbie and their daughter Stacey (13)
13	Single parent family	Elizabeth and her daughter Alison (15)
14	Couple	Esther, George
15	Couple	Roger, Judith
16	Family	Sheila, Malcolm and their children Dale (21), Nicola (16)
17	Student sharers	Christian, Lee, Adam, Huslan, Jiun-Ming, Damon
18	Sibling sharers	Pierre, Henri
19	Couple	Darren, Hayley
20	Family	Trevor, Andrea and their children Joel (16), Leo (14), Toby (12)
21	Family	Diane, Nicholas and their children Kian (9), Sean (6), Glenn (4)
22	Couple	Hannah, Mark
23	Student sharers	Elliot, Duncan, Guy, Graham, Stuart, Scott
24	Family	Sally, Raj and their children Caleb (11), Leila (8)
25	Couple	Richard, Hilary
26-29	Single persons	Brenda, Simon, Mary, Hugh

Data collection process: reflexive considerations and reflective insights

The data collected from each household focus group represents a construction of EA adoption and practice in the household generated through interaction both between household members and between household members and myself. This section examines my role in the data collection process and reflects on the success of the focus groups.

The issue of adopting a role as a researcher is most relevant to observational studies. However, it was an issue considered here particularly as the focus groups were carried out in households' homes. I adopted the status of 'student' in order to help convey that I viewed the focus group as an opportunity for me to learn about what was going on in the household in a non-judgmental fashion (Jordan, 2006). I asked a male PhD student to accompany me to one focus group as I felt uneasy about my personal safety. My companion was introduced as another PhD student who was there to observe my interviewing skills and offer feedback, which the household was made aware of prior to the focus group. This household was one with which I developed less rapport and discussion did not always 'flow' as well as with other households. However, this was not entirely due to an observer being in the room. On a more positive note, my companion's feedback helped to develop my interviewing skills.

Upon entering the household's home I was friendly, polite and made sure to acquaint myself with all household members and engage particularly with children. Most households seemed reasonably comfortable from the outset which was probably a consequence of being in their own environment. During the focus group I encouraged responses verbally and non-verbally but was conscious to remain neutral to the content (Carey, 1994). As such, I avoided providing households with information and challenging their behaviour in a way which could be construed as judgmental. For example, a number of households articulated that they did not recycle food/drink cans or plastics because facilities weren't available. However, I *knew* such banks were available at the site they used to recycle glass items. On most occasions I simply explored this issue but refrained from challenging the household. This issue, and the one occasion where I did challenge the household, are discussed in chapter 5 (p.161).

My experience of moderating focus group 5 where the youngest children were aged ten and six, indicated the need to be more flexible with regard to the inclusion of children. To this end, future focus groups with families with younger children were organised in

such a way so that the children could be involved to an appropriate extent. For example, with household 7, Christopher (aged 8) participated in the focus group up until the end of the second section before he went to bed. This approach worked well. Excluding children was undesirable because their perspectives were useful (Grønhøj, 2006) and observing family interactions, is a form of data in itself (Allan, 1980) as discussed earlier.

Household 16 raised a number of related issues. Malcolm did not participate in the focus group. Sheila responded to the core recruitment strategy and when I explained what participation in the study involved she was certain that her husband would not be interested. This posed a dilemma as it went against the rationale of involving all household members. However, Malcolm's reluctance to take part appeared to stem from a disdain of all things 'environmental' and this contrast with Sheila's engagement in EAs was an interesting avenue for exploration. This was particularly so as previous focus groups had revealed very little overt and 'serious' conflict in relation to EAs. Therefore, rather than passing up the opportunity, I opted for the incomplete focus group. During the focus group there were indications that Malcolm's position was a barrier to Sheila pursuing further EAs. However, there were also indications that this issue was reflective of poor interpersonal relationship quality and I felt it was inappropriate to push the subject further. This was also the case in household 13 when Elizabeth talked about her ex-husband.

Overall households were open and willing to discuss the issues at hand. The main problem related to facilitating discussion in appropriate depth. While the paper-based activities helped in this respect and were embraced by most households, some households indicated discomfort with what they were being asked to do and opted to just discuss the issues. Here, more emphasis was placed on the general strategy of explicitly asking other household members for their perspective and repeatedly asking about the same issue in different ways. The result was generally less detailed data. In hindsight, examples of other households' work may have been helpful in encouraging engagement in the activities.

With respect to joint interviews, Allan (1980, p.206) notes:

> *"...only rarely do two distinct accounts emerge from joint interviews. Usually a process of negotiation and mediation occurs which results in a single account being produced that reflects the sometimes different reality experienced by the two spouses."*

This was very much the case here. As discussed earlier, household focus groups are a means of 'keeping household members honest' with regard to their EA attitudes and behaviour (p.63-4). Prior to the data collection process I anticipated that household members would challenge each other's claimed behaviour. This did not turn out to be the case. This may indicate some level of group conformity, but in general household members were willing to offer their different perspectives on events. Very rarely did I feel that household members were deliberately exaggerating their behaviour. However, when probed about their behaviour, a different picture sometimes emerged. For example, households often gave the impression that within-material recycling was proceeding at its maximum level, but when probed it became clear that this was not the case. However, household members were generally surprised by the realisation that their behaviour was inconsistent, indicating that they were unknowingly exaggerating their behaviour. This issue is discussed in the following chapter (p.110-1).

Finally, in many instances the process of discussing EA adoption and practice, or indeed the prospect of doing so, had an effect on the household as illustrated by previous point. In many cases the household resolved to rectify their inconsistent behaviour or engage in additional EAs. This raised the prospect of whether these issues should be followed up in a second focus group with the same household at a later date. This strategy was not adopted for the same reasons that interviewing household members separately and then as a household was not adopted, as discussed earlier (p.65). However, this issue represents an important future research avenue which is returned to in the final chapter (p.255).

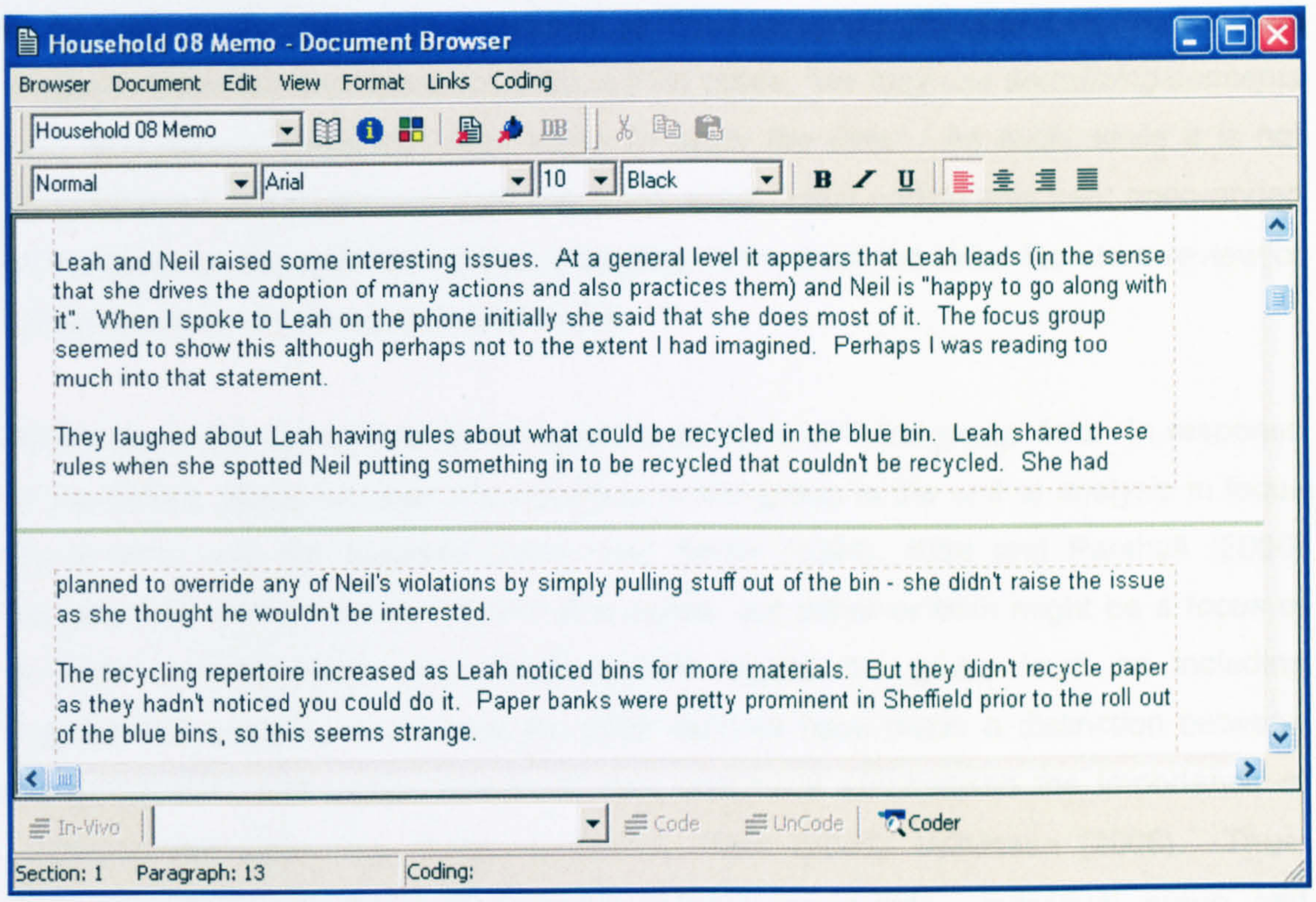
Data analysis process

This section documents how data collected during the household focus groups was analysed. A constructivist grounded theory methodological approach was adopted. The data analysis process began with an attempt to follow the detailed analytical procedures of Strauss and Corbin (1998) because they offered a form of guidance and security. Paradoxically, when put into practice, these procedures stifled the data analysis process. As a result of this, and a growing confidence in terms of qualitative data analysis, I 'found my own way' of analysing the data. This approach still made use of the basic grounded theory guidelines such as constructing codes from the data, memo-writing, theoretical sampling, and constant comparative analysis. Constructivist grounded theory regards these guidelines as tools for researchers to adopt and adapt (Charmaz, 2000; 2006) as I have done.

The data analysis process also made use of the CAQDAS (computer-assisted qualitative data analysis software) program QSR NVivo 2.0. The use of CAQDAS over manual methods was initially appealing as it offered a way of organising data and its analysis efficiently and a means of increasing transparency in the data analysis process by providing an electronic audit trail (Bringer et al., 2004). NVivo was adopted after attending a software planning seminar ran by the CAQDAS Networking Project. Out of a range of different programs including MAXqda, ATLAS.ti and QSR N6, I found the NVivo interface to be particularly user-friendly, well supported in terms of teach yourself guides (Bazeley and Richards, 2000; Gibbs, 2002), and accessible through the university. NVivo was used in its two most fundamental ways: as a means of storing and managing transcripts and memos, and as a means of creating and manipulating codes (Gibbs, 2002).

During the focus group, notes were taken of key points and observations. After the focus group, a household memo was created in NVivo and further notes were made recording reflexive insights, an evaluation of the focus group and initial analytical thoughts. Many of the research findings have their roots in my initial analytical thoughts. For example, Figure 2 shows a selection of such thoughts relating to household 8 which represent the origins of the following findings:·a leader as the driver of EA adoption and a leader as EA enactor/maintainer; a leader purposefully withholding information about the detail of recycling when other household members' relative interest is low; the gradual development of the recycling repertoire; and not picking up on 'obvious' information in relation to recycling.

Figure 2. Selection of initial analytical thoughts relating to household 8 (couple) recorded after the focus group.



The tape recording was transcribed soon after the focus group. I undertook this laborious task personally because transcription *"facilitates the close attention and the interpretive thinking that is needed to make sense of the data"* (Lapadat and Lindsay, 1999, p.82). Verbatim transcription was employed including any nonverbal or background sounds. The transcript was not 'cleaned up' and pauses and filler words such as 'mmm' and 'erm' were included (McLellan et al., 2003). An issue running through the data analysis process was how to analyse group interaction data. One strategy which was considered was capturing all aspects of the group process in the transcript (Morrison-Beedy et al., 2001). While there was some attempt to capture how statements were delivered and responded to where such issues were notable, employing this strategy across the board would have extended the already extremely lengthy process of transcription. Furthermore, transcription is an interpretive act meaning that transcription cannot represent all details of a recording (Bird, 2005).

Whilst initial memo-writing and transcription were considered part of the data analysis process, the 'formal' analytical process began with open coding. This is the analytical process through which concepts are identified in the data along with their properties (characteristics) and dimensions (range along which characteristics vary) (Strauss and Corbin, 1998). Given the problems of capturing all aspects of the group process in the

written word, the transcript was read whilst listening to the tape recording. Open coding proceeded by examining the transcript line by line and labelling segments of text according to the actions, events, or positions within it. Data analysis commenced in the context of the partial framework of local concepts discussed in the previous chapter. However, as Charmaz (2000, p.515) notes, *"we may use sensitizing concepts only as points of departure from which to study the data"*. As such, while it is not claimed that I 'put these concepts out of my mind', initial coding was kept open-ended by focusing on the data rather than importing terms from the initial literature review or ideas based on my personal experiences.

At this point it is appropriate to address the analysis of *focus group* data. In response to the debate about whether the individual or the group is the unit of analysis in focus group data, see for example Carey and Smith (1994), Kidd and Parshall (2000) suggest that neither one is *the unit* of analysis, but either or both might be *a focus* of analysis. While Carey and Smith (1994) regard the group level as including interactional analysis, more recently, other authors have made a distinction between the group data and group interaction data and have emphasised the importance of analysing the latter, e.g. Duggleby (2005), Warr (2005), Wilkinson (2006). Thus, Duggleby (2005) referred to three levels of focus group data – individual, group, and group interaction – and reviewed a number of approaches to analysing these three levels of data.

Whilst the work of Duggleby (2005), Warr (2005) and Wilkinson (2006) have advanced the debate surrounding the analysis of group interaction data (although as Duggleby (2005) notes there is still much to discuss about the pros and cons of various proposed strategies), the literature was in a different position when the data analysis process began with the start of the pilot study in March 2004 and as such, two strategies were used to a greater or lesser extent. As highlighted above, some attention was paid to capturing aspects of the group process in the transcript (Morrison-Beedy et al., 2001). Carey and Smith (1994) and Carey (1995) advocated describing group interaction data and using this to interpret group data. Some attention was also paid to this strategy.

As such, open coding proceeded based on the content of the transcript. Within this strategy it was recognised that on some occasions household members spoke from an individual perspective, i.e. about their personal attitudes, behaviour, experience, etc. This was recognised as individual data. On other occasions household members spoke from a household perspective, i.e. they offered their perspective on 'how things were' at a household level. This was recognised as group data. Both forms of data

were generally contextualised within group interactions. Kidd and Parshall (2000) advocate cross-coding data to determine which is individual and which is group data. However, I did not view adding a second level of coding as particularly helpful. Instead, in order to keep the context in which statements were made, in general, relatively large segments of text were selected when coding. In NVivo, concepts or codes are termed 'nodes' and in the first instance, nodes were created as 'free nodes' – a list of nodes without organisation. Each node was defined to allow consistent use and a memo associated with the node was created recording related analytical thoughts.

Analytical thoughts about the nature of group interactions were recorded in the household memo. Such thoughts included the extent to which group interactions were generally complementary or argumentative (Kitzinger, 1994), the way in which household members listened (or in some cases did not listen) to one another, whether one household member was particularly domineering (which generally was not the case), etc. This strategy thus tapped into one of the issues underpinning the use of household focus groups, namely that focus groups offer an opportunity to observe the interaction of household members (Allan, 1980). Indeed, it was often the case that the way in which household members generally interacted was a reflection of issues which came out of the focus group. For example, in household 7 (family), Barry and Amanda listened to each other intently and probed each other in a highly respectful manner. This was in tune with their particularly modern sex role orientation whereby all household tasks including EA practice were shared activities and decisions were made democratically. Interestingly, since this approach was adopted, Duggleby (2005) advocated a similar approach to analysing group interaction data. She proposed analysing group interaction data separately and then comparing it with group data to see if there is any integration.

Open coding was assisted by the technique of constant comparative analysis in which cases were compared within the same household, and then as further focus groups were analysed, across households. As the number of concepts began to grow, I began to organise free nodes into tree nodes, i.e. related nodes were grouped together. However, as this process continued I grew increasingly frustrated with the analysis process. Whilst Strauss and Corbin's (1998) guidelines for open coding had been relatively straightforward to apply, I found their guidelines relating to the next stage in the analysis process – axial coding – too abstract and too contrived to relate to my data. This position has been acknowledged by others. For example, in relation to the procedures of Strauss and Corbin (1990):

> *"I always have a nagging doubt that the procedures are getting in the way; the technical tail is beginning to wag the theoretical dog"* (Melia, 1996, p.376).

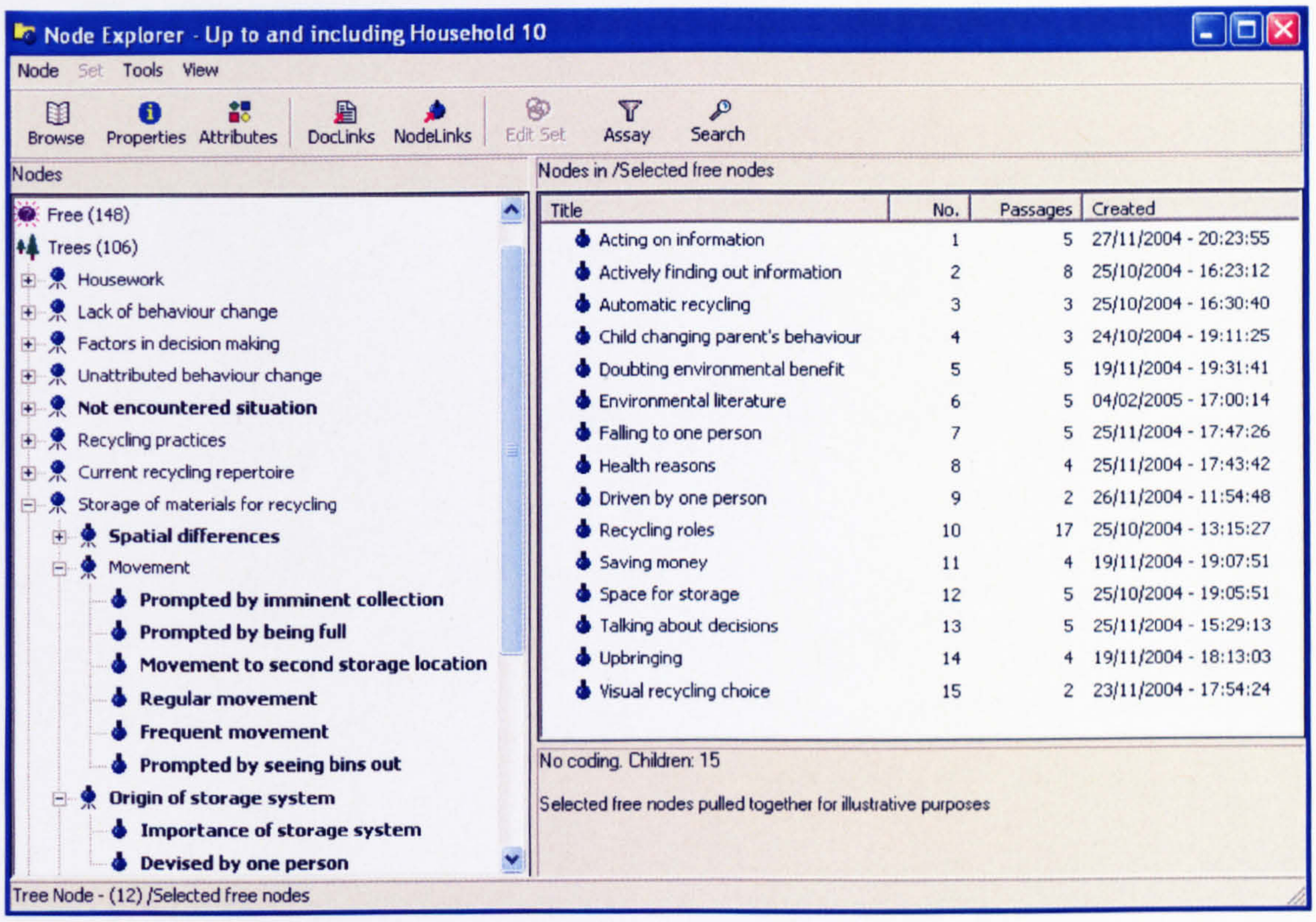
Similarly:

> *"Strauss' method of labelling and then grouping is totally unnecessary, laborious and is a waste of time. Using constant comparison method gets the analyst to the desired conceptual power, quickly, with ease and joy. Categories emerge upon comparison and properties emerge upon more comparison. And that is all there is to it"* (Glaser, 1992, p.43).

Indeed, as the number of focus groups analysed increased, constant comparison of cases across households was the more fruitful strategy, and also revealed that the large number of nodes I had developed just did not seem to capture all the elements of the data. An useful analogy is provided by Catterall and Maclaran's (1997) argument that on-screen coding and the retrieval of coded segments can result in researchers missing important process elements in focus group data – the moving picture. In a similar fashion, the coding process had resulted in the fracturing of data to such an extent that I had lost a holistic perspective on the processes by which EAs were adopted and practiced. Consequently, a revised approach to data analysis was adopted.

The process of open coding did not represent wasted effort. It gave me both experience of handling focus group data and the confidence to find a means of analysis that 'worked' with my data. This process also identified a number of concepts, concept relationships and patterns which developed into many of the research findings. Figure 3 shows an illustrative section of the coding structure as it stood after the analysis of household 1-10's focus groups which highlights the origins of a number of findings. For example, in the left hand pane which shows a number of expanded tree nodes, the parent node 'Movement' contains a number of nodes relevant to the discussion of recycling practice, and the parent node 'Origin of storage system' contains the node 'Importance of a storage system' which represents the origin of the link between a recycling system and embeddedness of recycling practice in everyday life. The right hand pane shows a number of free nodes pulled together for illustrative purposes. For example, 'Falling to one person' and 'Driven by one person' represent the origins of the concepts of a leader as the EA enactor/maintainer and the driver of EA adoption respectively.

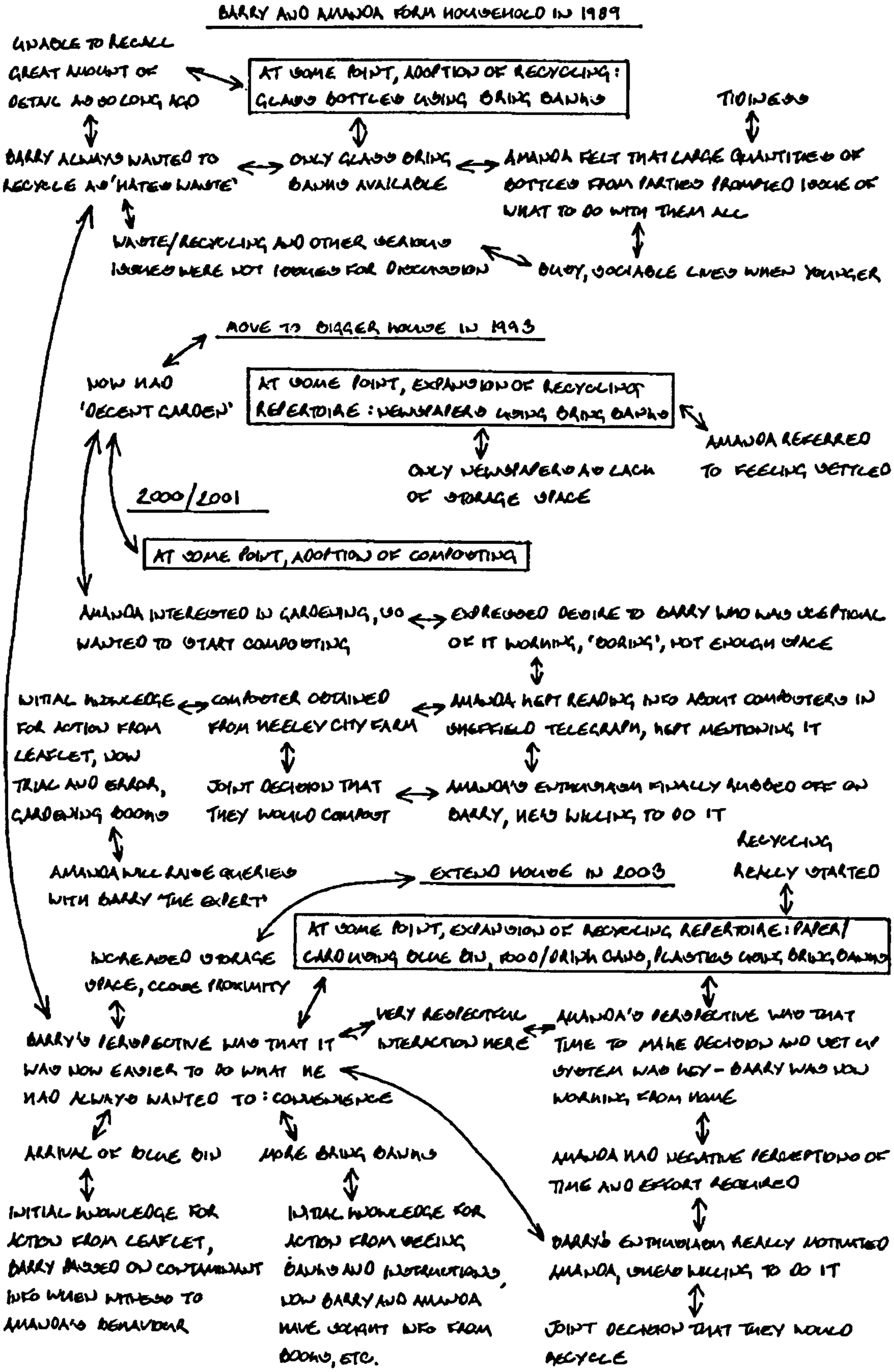
Figure 3. Section of the coding structure as it stood after the analysis of household 10's focus group.



The revised approach involved producing three visual representations of the focus group data relating to recycling/composting practice, recycling/composting adoption, and wider EA adoption and practice and patterns of adoption and practice across the EA repertoire. Thus, the representations largely related to the last three sections of the focus group and represented more detailed versions of the diagrams the household was asked to produce. Each representation was produced while listening to the tape recording and reading the transcript and consulting the household's original diagrams, and again the emphasis was on the data rather than drawing on concepts from the partial framework of local concepts. This approach offered a number of benefits. It was still possible to capture the detail including differentiating between individual and group data where required. Elements of the representation could be added to as examination of the transcript proceeded which was helpful given that the households often discussed issues iteratively (another reason why the open coding process grew increasingly difficult). Importantly, it was also possible to gain an overview of the processes by which EAs were adopted and practiced. In addition to the representations, a written summary of each of the four sections of the focus group was recorded in the memo relating to the household which assisted in maintaining a holistic perspective of the household particularly in relation to patterns across the EA repertoire. Analytical thoughts about the nature of group interactions were also

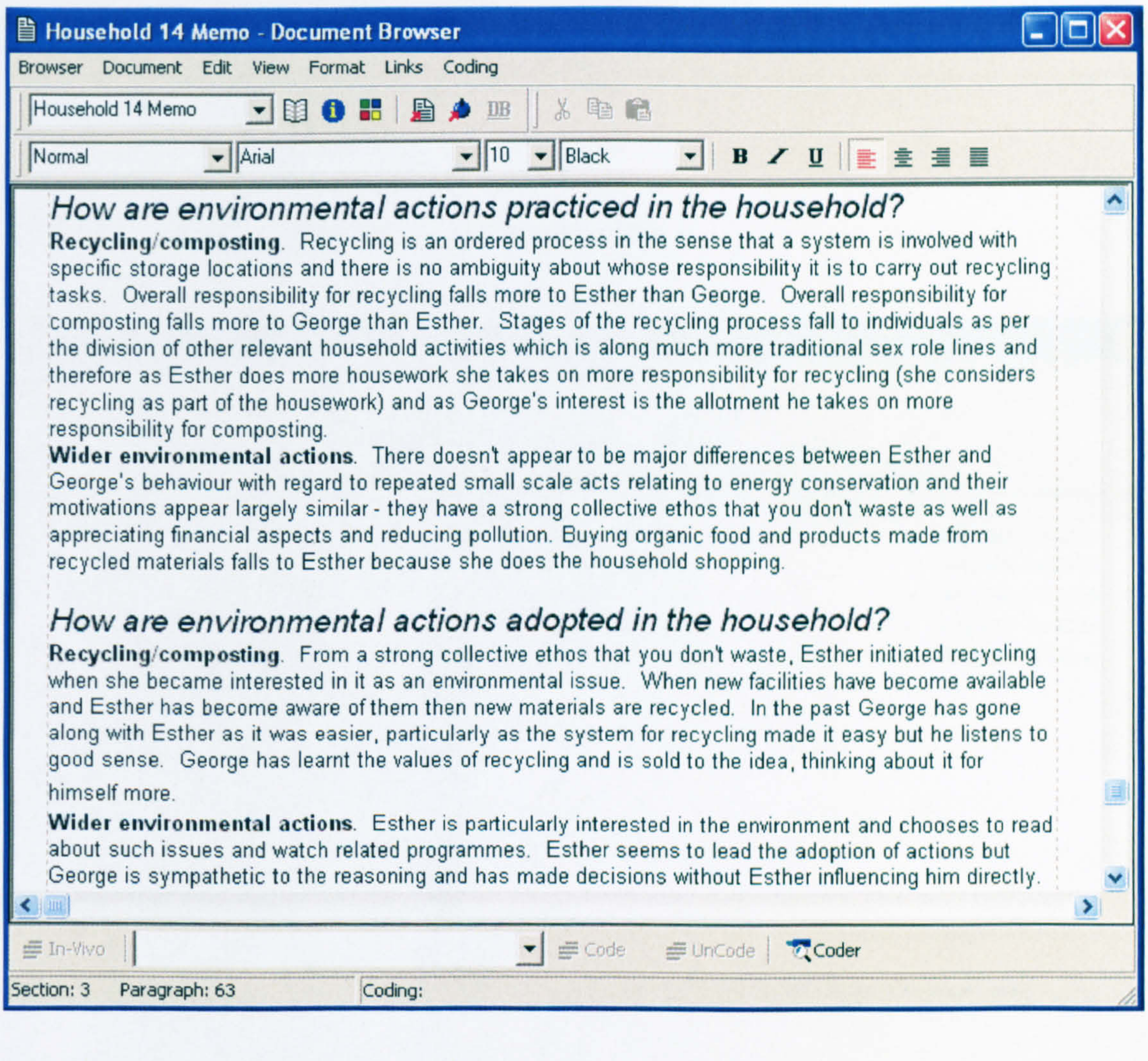
recorded in the memo but were sometimes also included on the representation. An inked and neater, but nonetheless faithful version of an original representation is shown in Figure 4.

Figure 4. Visual representation of the adoption of recycling/composting in household 7 (family).



As further focus groups were analysed, particular attention was paid to the constant comparison of cases within and across households, and analytical thoughts about how the case in question was similar and different to those within the household and those in households which had already been analysed were recorded in the memo relating to the household. To assist the drawing out of the salient issues across households and moving towards a more abstract understanding, the research questions were answered for each household, again from the perspective of the data (an example is shown in Figure 5).

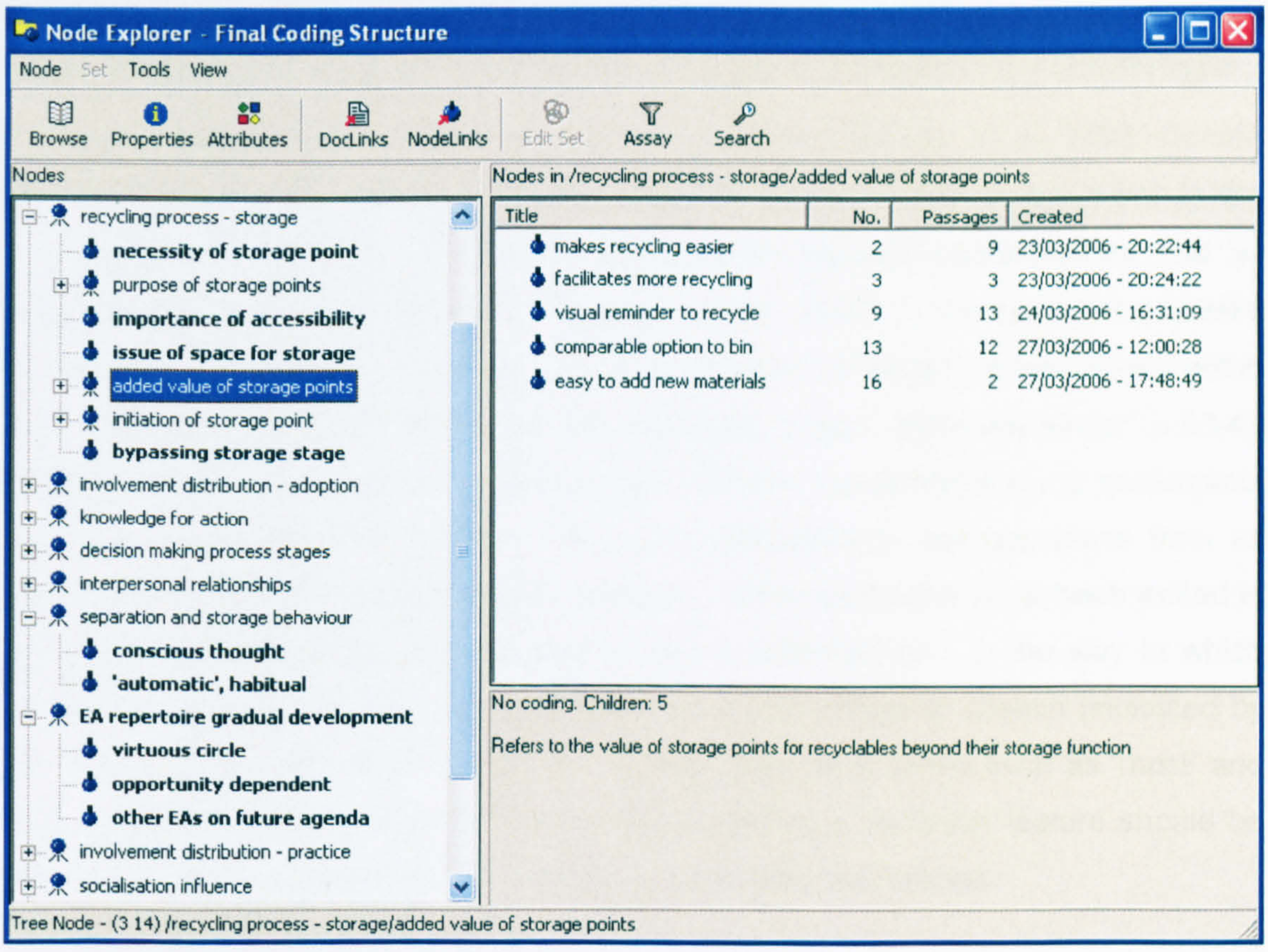
Figure 5. Research questions answered with respect to lone environmental actions for household 14 (couple).



As more and more focus groups were analysed through the process of producing visual representations, constant comparative analysis and answering the research questions, emerging concepts, concept relationships and patterns were recorded and refined in a process characterised by the repeated movement between data collection, data analysis and literature review. While NVivo offers the ability to provide an

electronic audit trail, its use at this stage of the data analysis process 'slowed down' my thought processes. Therefore, while this process involved the review of memos in NVivo, concepts, concept relationships and patterns were recorded and refined 'free hand' on paper. Once the final focus group had been incorporated into this process of analysis (the rationale underpinning the cessation of data collection will be discussed shortly), the transcripts were returned to and examined more systematically. Each transcript was examined while listening to the tape recording and coded around the identified concepts, concept relationships and patterns which were amenable to coding. This process facilitated further analytical refinement through further constant comparative analysis and also was a means of identifying relevant quotations. As Charmaz (2006, p.154) notes, writing and rewriting are *"crucial phases of the analytic process"*. Indeed, concepts, concept relationships and patterns were continually refined during the writing process with the coding structure modified to reflect this. Figure 6 shows an illustrative section of the final coding structure as it stood after the writing and rewriting process.

Figure 6. Section of the final coding structure.



Grounded theory methodology advises that data collection continues until theoretical saturation is reached. In simple terms this refers to the point at which *"the researcher*

finds that no new data are being unearthed" (Strauss and Corbin, 1998, p.292). However, at a more technical level this means continuing to collect data until:

> *"(a) no new or relevant data seem to emerge regarding a category, (b) the category is well developed in terms of its properties and dimensions demonstrating variation, and (c) the relationships among categories are well established and validated"* (Strauss and Corbin, 1998, p.212).

Towards the end of the data collection process, many concepts, concept relationships and patterns were generally well developed and the data from each new focus group was generally adding supporting weight to these areas. However, some concepts, concept relationships and patterns remained rooted in a limited number of instances and thus, continued data collection would have been desirable. Therefore, rather than uncritically proclaiming that theoretical saturation was reached (Charmaz, 2006), I am keen to stress that data collection ceased once enough data was gathered to adequately address the research questions and time constraints meant that further data collection was not practical. Indeed, the complexity of the findings suggests that theoretical saturation would require a much larger sample of households than PhD research could include. This issue will be returned to in the final chapter (p.257-8).

Note about the presentation of research findings

In keeping with discussion about the use of quotations (Spencer et al., 2003; Corden and Sainsbury, 2004), it is appropriate to briefly consider their employment in the presentation of findings. Quotations are used to illustrate interpretations and as integral elements of interpretations (Spencer et al., 2003). The quotations utilised encompass individual data and group data which are sometimes contextualised within group interactions, which reflects the different types of data discussed earlier (p.83-4). While the selection of quotations unavoidably reflects the fact that some participants were more articulate than others, I have also attempted to use quotations from as many households and participants as possible. While quotations have been edited in the name of succinctness (the removal of text is indicated by ...), the way in which participants spoke including language, grammar and overlapping speech (indicated by the use of |) has not been 'cleaned up'. Finally, the use of terms such as 'most' and 'few' in relation to the number of households exhibiting a particular feature should be seen as informative rather than an attempt to generalise the findings.

Chapter 4

Environmental action practice: recycling/composting

This chapter addresses the research question – How are environmental actions practiced in households? – with respect to recycling/composting. This chapter is structured around two main findings. Firstly, that recycling and composting were maintained by a number of different units. As such, the first section outlines these recycling/composting maintainers. Secondly, that recycling and composting practice (hereafter collectively known as 'recycling practice') was embedded in the everyday life of the household when a system for the separation, storage and removal of recyclables was evident. Such a system represents the use of formal storage points and the incorporation of recycling tasks into domestic routines. Where these aspects were evident, recycling was perceived as successful, requiring minimal effort, and was not perceived as additional work in terms of domestic activity. Hence, recycling practice was seen as part of the normal activity of the household, i.e. embedded in everyday life. This finding is presented over the second, third and fourth sections of this chapter. The second section explores the meaning and consequences of the incorporation of recycling tasks into domestic routines. This section also considers the assignment of specialised recycling roles to individuals and what prompted the practice of recycling tasks. The third section examines the different manners by which recyclables were separated and stored. The fourth and final section of this chapter focuses on the meaning and consequences of having a system for the separation, storage and removal of recyclables.

Recycling/composting maintainers

The framework of the adoption and practice of lone EAs in households (hereafter known as the 'original framework') equated EA practice to the role of enactor if the EA was a one-off act/purchase or maintainer if the EA was repetitive (recycling/composting, repeated acts, repeated purchases). The enactor/maintainer was conceptualised solely in terms of the physical involvement of household members in EA practice. Empirically however, many households exhibited a similar distribution

of involvement but with different underpinning factors. Therefore, focusing solely on physical involvement in EA practice was insufficient to distinguish between households. This issue was evident across the four activity types. Consequently, the concept of the enactor/maintainer has been recast. The EA enactor/maintainer is the unit physically and notionally responsible for EA practice. The inclusion of physical and notional responsibility serves to recognise that while these two aspects corresponded in some cases, the unit which physically practiced the EA and the unit which supported participation in the EA were not necessarily the same. Each enactor/maintainer is characterised by a particular distribution of involvement in EA practice *and* an explanation of the distribution.

Six enactors/maintainers were identified across the four activity types – household (collective form), household (representative form), leader (non-influential form), leader (narrowly influential form), leader (widely influential form), and individuals. The basic nature of each enactor/maintainer was similar across activity types. However, the detailed characterisation of each enactor/maintainer was sufficiently different both in terms of the types of distribution of involvement in EA practice (largely a consequence of recycling practice involving multiple tasks and wider EA practice involving a single act) and the factors which explained the involvement distributions, to warrant separate discussion of the recycling maintainers here and the wider EA enactors/maintainers in chapter 6 (p.168). Thus, turning specifically to recycling, five maintainers were identified – household (collective form), household (representative form), leader (narrowly influential form), leader (widely influential form), and individuals. The factors which explained the distribution of involvement in recycling practice are the presence or absence of a recycling household theme (which incorporates relative interest), the domestic division of labour, physical prompting, and empathy. Before an overview of each maintainer is provided, the different involvement distributions, relative interest, and the presence or absence of a household theme will be examined.

Across activity types, with respect to families, involvement was generally considered across the parents only as children (particularly young ones) would not be expected to practice most EAs (with the exception of some repeated acts such as turning the tap off when brushing teeth). In terms of recycling practice, four distributions of involvement were evident – equal, marginally unequal, highly unequal, and entirely unequal – with marginally and highly unequal involvement distributions a consequence of recycling practice involving multiple tasks.

Parallels can be drawn between equal and marginally unequal involvement distributions and joint sustainers of recycling (Oates and McDonald, 2006). Indeed, the natures of the equal and marginally unequal involvement distributions address Oates and McDonald's (2006) call for an exploration of the term 'joint' due to the potential for *"a whole range of meanings from an occasional contribution to an equally shared activity"* (p.429). Oates and McDonald (2006) inferred that if the meaning of joint was more a case of the former then the universal applicability of there being one recycler per household need not be dismissed. With respect to the equal and marginally unequal involvement distributions, all individuals put recyclables in their storage points as opposed to the bin, thus making separation and storage a shared role. However, other tasks typically fell to individuals in specialised roles. Within equal involvement distributions these roles were equally distributed across individuals. Alternatively, in rare cases, all recycling tasks were shared. Thus, all household members physically contributed to keeping recycling going to a largely equal extent. Within marginally unequal involvement distributions these roles were somewhat unequally distributed across individuals. Thus, although all household members physically contributed to keeping recycling going, one individual contributed slightly more than others. Thus, the term 'joint' can refer to a more or less equally shared activity although this can be at the holistic level of the recycling process rather than the level of each recycling task. The concept of there being one recycler per household should not be dismissed (as will be seen below) but neither should it be universally assumed.

Parallels can therefore be drawn between entirely unequal and highly unequal involvement distributions and single sustainers of recycling, and the natures of these involvement distributions delineate the scenario of there being one recycler per household (Hormuth et al., 1991; McDonald and Ball, 1998; Oates and McDonald, 2006; Pocock et al., 2008). With respect to the entirely unequal involvement distribution, all recycling tasks including separation and storage fell to one individual who was physically responsible for keeping recycling going. All such households were single parent families with the parent as the active individual. Given that there were no households in which adults made zero contribution to recycling, the entirely unequal involvement distribution is not considered further in this chapter. With respect to the highly unequal involvement distribution, all individuals separated and stored recyclables although not necessarily to the same extent. However, all other tasks fell to one individual and this individual was physically responsible for keeping recycling going. Thus, while there can be literally 'one recycler per household', the one recycler per household's responsibility for recycling can also relate primarily to the removal of recyclables.

As per the original framework, relative interest refers to the level of importance a household member places on participating in a particular EA. In addition to being a within-household concept, relative interest was also compared across households. Individuals with high relative interest were prepared to 'make the EA happen' in their household. Also as per the original framework, attitudes towards the outcomes of an EA represent the individual's beliefs about what the EA achieves and their evaluations of those beliefs; beliefs which are evaluated favourably represent motives for EA participation. Turning specifically to recycling, two general types of motives were evident among individuals with high relative interest, although there was some overlap – waste aversion and environmental reasons. Thus, individuals talked about recycling in order to reduce the amount of waste going to landfill, save natural resources and energy, help the environment, and it being morally wrong to waste. Thus, there was much overlap with Bagozzi and Dabholkar's (1994) list of 19 recycling goals and Defra's (2008b) identification of the urge to avoid waste. Some individuals also exhibited intrinsic satisfaction (i.e. personal, internal contentment) from recycling (De Young, 2000). Multiple motives were commonplace (De Young, 2000). Waste aversion and environmental reasons were also motives underpinning composting but the primary motive here was generally gardening-related benefits (Tucker and Speirs, 2001; 2003; Tucker et al., 2003; Brook Lyndhurst, 2004b).

Individuals with low relative interest were not prepared to 'make the EA happen' in their household. With respect to recycling maintenance, such individuals generally accepted the rationale of recycling (i.e. that recycling reduced the amount of waste going to landfill, etc.), but they were not overly concerned or motivated by these issues. In limited instances, low relative interest was associated with a low sense of agency, i.e. a feeling that personal actions are insignificant. Individuals with low relative interest often exhibited a negative perception of recycling, perceiving it to be extra work, as will be discussed later (p.102). Thus, the position of individuals with low relative interest was generally one of 'just not that interested' or 'can't be bothered'.

The concept of the presence or absence of a household theme incorporates the concept of relative interest but goes further to take into account whether household members collectively recognised EA participation as a shared goal or saw EA participation as an individual goal. Thus, where household members exhibited similar relative interest and collective recognition that EA participation was a shared goal, a household theme was present, as illustrated by Karen from household 10 (homeowner/lodger) in relation to recycling:

...We're both clear that we both want to recycle...

Where household members exhibited similar relative interest but saw EA participation as an individual goal, a household theme was absent. A household theme was also absent where household members exhibited dissimilar relative interest – one individual exhibited greater (and high) relative interest and other household members exhibited lesser (and low) relative interest. 'Greater' and 'lesser' are within-household terms, while 'high' and 'low' are across-household terms.

Having examined some of the characterising concepts, an overview of the five recycling maintainers will now be provided (Figure 7). The household (collective form) as the maintainer involved an equal or marginally unequal involvement distribution. The involvement distribution, and why recycling tasks fell to individuals in specialised roles within the involvement distribution, was explained by a household theme and an equitable domestic division of labour which favoured all individuals physically contributing to keeping recycling going, as will be explained in the next section (p.102-3). Due to the presence of a household theme, particularly the collective recognition that recycling was a shared goal, household members worked as a team in relation to recycling practice, as will be highlighted later (p.108-9).

The household (representative form) as the maintainer, which was only evident in a limited number of households, involved a highly unequal involvement distribution. Although this involvement distribution was associated with a household theme, an inequitable domestic division of labour meant that one individual was responsible for all recycling tasks other than separation and storage, as will be explained in the next section (p.102). Thus, when the most involved individual carried out their recycling tasks, they were enacting the known will of the household.

A leader (narrowly influential form) as the maintainer involved a highly unequal involvement distribution; the leader was the individual who all recycling tasks other than separation and storage fell to. If this individual had ceased to carry out their recycling tasks then recycling would also have ceased. The highly unequal involvement distribution was associated with the absence of a household theme with the leader and other household members exhibiting greater (and high) and lesser (and low) relative interest respectively. Household members with low relative interest nonetheless separated and stored recyclables primarily due to physical prompting. The leader had put in place storage points for recyclables which acted as a visual reminder to recycle and made separation and storage a comparable option to binning recyclables in terms

of effort, an issue which will be examined in further detail later (p.113). The leader was also responsible for the removal of recyclables which allowed for their ongoing separation and storage. Thus, although individuals with low relative interest were not prepared to 'make recycling happen' in their household, as they were not against the principle of household participation in recycling, they were facilitated to behave beyond their relative interest due to the recycling system attributable to the leader. Hence, these individuals were 'facilitated recyclers'. Thus, a leader (narrowly influential form) as the maintainer represents socialisation influence from a leader to other household members (Grønhøj, 2006; Grønhøj and Ölander, 2007) with respect to behaviour only, with physical prompting as a physical means of socialisation influence. Independent of the absence of a household theme and physical prompting, an inequitable domestic division of labour also favoured responsibility for all recycling tasks other than separation and storage falling to one individual, as will be explained in the next section (p.102-3).

Although physical prompting was the key factor underpinning the separation and storage behaviour of facilitated recyclers, other issues were also at play. For example, leaders generally also employed verbal prompting (i.e. asking or instructing other household members to separate and store recyclables) to a greater or lesser extent. Verbal prompting was most notably employed by leaders after recycling initiation in order to alert other household members to the new way of dealing with waste and to remind them of what to do. Interestingly, instances of leaders currently employing verbal prompting were limited which appeared to be because facilitated recyclers' behaviour did not necessitate such communication. Verbal prompting was therefore a verbal means of socialisation influence from a leader to other household members. Some facilitated recyclers maintained that they did not feel any kind of social pressure to engage in recycling from the leader, while others did feel some degree of social pressure – typically knowing that the leader viewed binning recyclables as morally unacceptable, i.e. an injunctive norm (Cialdini et al., 1990). This difference tentatively appeared to depend on whether or not a leader advocated recycling, i.e. promoted recycling to other household members in terms of their personal motives. Thus, advocation was a further verbal means of socialisation influence from a leader to other household members.

A leader (widely influential form) as the maintainer was only evident historically in a limited number of households and was not evident in relation to composting. This maintainer involved an equal or marginally unequal involvement distribution which was associated with the absence of a household theme representing dissimilar relative

interest. Household members with low relative interest nonetheless separated and stored recyclables and practiced other recycling tasks due to physical prompting and high empathy towards the leader. As per the original framework, empathy refers to how important it is to an individual that the preferences of other household members are accounted for in the adoption and practice of a particular EA, as illustrated by Hilary from household 25 (couple):

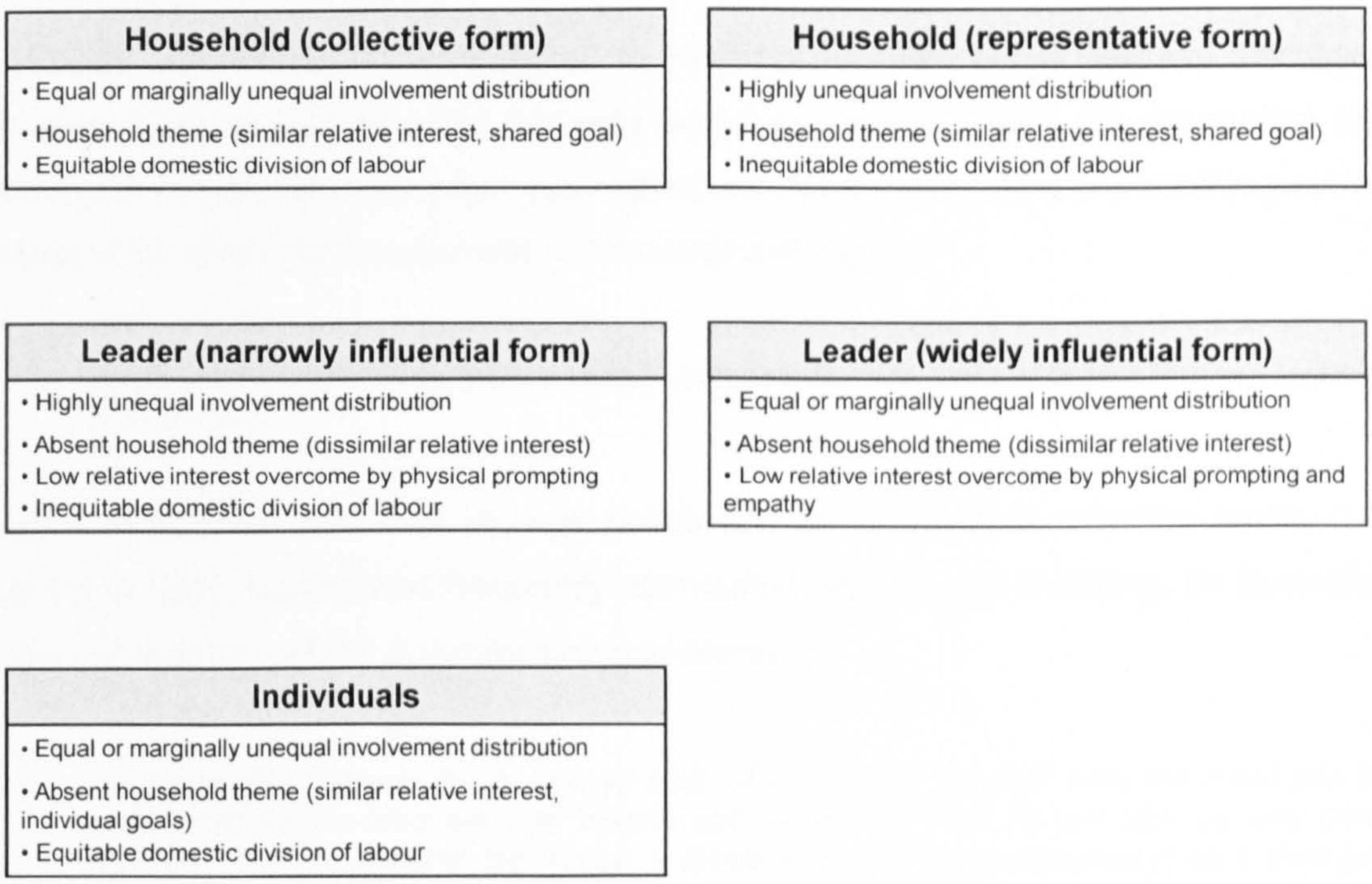
> *You've got to respect [each other] really, we want to do what...makes the other happy*

Thus, in addition to responding to physical prompting, the facilitated recyclers also felt it important to behave in keeping with the leader's high relative interest, meaning that it remained the case that the leader was pivotal to continued recycling. The facilitated recyclers' empathy stemmed from the leader having advocated recycling. For some, empathy remained dependent on verbal prompting, while others did not require such prompting. Empathy was evident in households with close interpersonal relationships (Kirchler et al., 2001), which with respect to recycling were couple and family households. Therefore, a leader (widely influential form) as the maintainer also represents socialisation influence from a leader to other household members with respect to behaviour only.

Where individuals maintained recycling, this involved an equal or marginally unequal involvement distribution. The involvement distribution, and why recycling tasks fell to individuals in specialised roles within the involvement distribution, was explained by the absence of a household theme involving similar relative interest and an equitable domestic division of labour which favoured all individuals physically contributing to keeping recycling going. As household members did not collectively recognise that recycling was a shared goal, instead seeing recycling as an individual goal, they did not appear to be consciously working as a team in relation to recycling practice. This maintainer was only evident historically in a limited number of households and also appeared to be rather transitory. It was not evident in relation to composting. In contrast to the other maintainers which were not associated with particular household types, individuals as the maintainer was only found in shared households although other maintainers were also evident in this household type.

Figure 7. Characteristics of the recycling/composting maintainers.

Blue represents socialisation influence from the leader to other household members (facilitated recyclers) with respect to behaviour only.



The historically evident maintainers of a leader (widely influential form) and individuals are not considered further in this chapter because households were able to articulate more information about present as opposed to past recycling practice. However, these maintainers will be returned to in the following chapter (p.145 and p.156 respectively) during discussion of the development of the present maintainer.

In addition to classification by maintainer, households were also classified in terms of their recycling repertoire, i.e. the materials recycled on a day to day basis. Higher level recycling households recycled all materials facilities allowed for in Sheffield (i.e. they used their blue bin for paper/card and bring banks for glass bottles/jars, food/drink cans, plastic bottles/containers and foil) and composted kitchen and garden waste. Lower level recycling households commonly used their blue bin for paper/card, used bring banks for glass bottles/jars only, and did not compost. Medium level recycling households lay between these two extremes. Some households were similar to lower level recycling households but also composted, while others were similar to higher level

recycling households but did not recycle food/drink cans. The maintainer was not intrinsically indicative of the household's recycling repertoire.

Incorporation of recycling tasks into domestic routines

Individuals who physically contributed to keeping recycling going typically discussed recycling tasks as part of wider domestic activities. For example, the generation and cleaning of recyclables was often associated with food preparation and washing up, as illustrated by Brian from household 4 (homeowner/lodger):

> *When we're washing up after a meal, [recyclables] are the last things that get washed after the pans.*

Moving recyclables into their storage points and on to the final recycling facility (i.e. blue bin or bring banks) was frequently associated with the act of tidying, as illustrated by Aaron from household 6 (professional sharers):

> *It's just kind of tidying the house as well...if I'm taking the stuff from the main pile [of paper] out to the blue bin and there's still room in it then I'll just pick up any other rubbish I find lying round the house, it tends to be [in the passageway] so it then just gets put straight into the blue bin.*

Putting paper/card in the blue bin or moving recyclables into external storage points often took place when going outside anyway, as illustrated by Brenda from household 26 (single person):

> *There's a communal [blue bin] which is very near to my block, so I take a pile down if I'm going that way. I don't normally make a special trip downstairs and outside even though it's not far to go unless there's a large quantity. I go outside often so [I just take] paper down with me.*

Recyclables were often taken to bring banks when going to the supermarket or when passing the facilities anyway, as illustrated by Esther from household 14 (couple):

> *I do all my shopping on a Friday. I go to the bank...then I go to Sainsbury's and do my big shopping and on the way I take any glass bottles and plastic, anything else that I need to [do] so that I do things on one day.*

With respect to composting, the generation of kitchen waste was often associated with food preparation, as illustrated by Richard from household 25 (couple):

> *I do the composting because I do the cooking and I prepare all the veg.*

Emptying kitchen waste into the composter was often associated with gardening, as illustrated by household 14 (couple):

> GEORGE
> *Everything that goes into [the tub for kitchen waste]...I just take it up [to the allotment] every so often.*
>
> ESTHER
> *...I don't do anything apart from just putting in the kitchen waste...*
>
> GEORGE
> *[The allotment is] my territory because I've never been allowed in that garden! (LAUGHS, I LAUGH)*

This series of quotes illustrates the incorporation of the range of recycling tasks into a range of domestic routines, as also identified by Oates and McDonald (2002). The discussion will now continue with a focus on recycling tasks other than separation and storage. This is not to say that separation and storage was not incorporated into domestic tasks, but rather that the different manners by which recyclables were separated and stored requires this task to be discussed separately later (p.109).

The incorporation of recycling tasks into domestic routines was associated with the perception of recycling as requiring minimal effort. This was inferred from the way individuals talked about recycling, as demonstrated in the quotes above. Oates and McDonald (2002) reported that terms such as 'just', 'straight out' and 'automatic' were used by recyclers indicating the everyday nature of recycling and its minimal impact in terms of effort; thus, recycling was not perceived as a separate addition to household tasks. Acknowledging that Oates and McDonald's (2002) discussion sensitized me to this issue within the data, the use of the word 'just' was particularly indicative of recycling tasks not being perceived as additional work in terms of domestic activity. For example, Esther from household 14 (couple) spoke about moving recyclables:

> *[George] will bring [today's papers] into the kitchen...Anything else that gets brought in [to the living room], at the end of the day I just pick them up and put them in the kitchen and it just goes from there to the car port and from there to the car on Friday.*

Individuals also spoke directly about recycling tasks requiring minimal effort, as illustrated by household 6 (professional sharers):

> ROBERT
> *I think the general system is that if you put something on top of the cardboard pile and it falls off then that person will take [the pile out to the blue bin].*
>
> AARON

It's not really a huge issue...it doesn't take very long so I don't tend to pay much attention to it.

The association between the incorporation of recycling tasks into domestic routines and the perception of recycling as requiring minimal effort becomes even more apparent when the views of facilitated recyclers are considered. Facilitated recyclers exhibited low relative interest, but separated and stored recyclables due to physical prompting. They did not contribute to the removal of recyclables. Some facilitated recyclers viewed such tasks as additional work that required an undesirable amount of effort. For example, Scott, a facilitated recycler from household 23 (student sharers) was against any EA that *"puts me out of kilter with what I want to be doing"*:

Say like if someone told me that I had to get the bottles from [the basket] and walk all the way down there to put them in the bank, I'd probably take them outside and put them in the bin, but it's more...the whole effort thing for the value that I have in my head, everyone's got values [and for me recycling] is just not one of the priorities.

In household 11 (student sharers) glass bottles/jars were separated and stored to some extent, but had not yet been taken to the bring banks:

MELISSA
Last year we had exactly the same problem with the glass cos me and Gavin took that box, that huge box, it took us ages to carry it up the road and not drop any and that was quite a big [job], like that ended up being done in reading week, you know when you really don't have much to think about, when you really kind of feel like you have some spare time. I think in my head things take longer than they actually do so it seems like a much bigger step to take stuff to the recycling bank than it actually is...

KIMBERLEY
But I think it is partly, if you walk downhill to...put things in the recycling bin, you need to walk back up Conduit Road [a very steep hill] (LAUGHS) and in your spare time you don't want to have to walk like all the way downhill and walk back up again...Everyone's got a lot of work to do and time is quite precious so no one really wants to actually take half an hour or whatever out of their time to lug that box all the way down the hill.

There was no recognition from Scott, Melissa and Kimberley that they walked past the glass banks they referred to on a regular, if not daily basis, on their way to university and therefore taking recyclables to the bring banks could be incorporated into existing routines. This was in stark contrast to Christian, the leader from household 17 (student sharers) who had incorporated visits to the bring banks with his walk to university:

Normally every day or every other day, if I can get a carrier bag full of something then I'll take it with me to uni and that way it's not like "oh I have to take the [recycling]"...it's just like there's another carrier bag to take up there which doesn't weigh much.

The incorporation of recycling tasks into domestic routines is further illustrated by the finding that the distribution of involvement in recycling practice was underpinned by the

domestic division of labour. This is largely in keeping with the previously recognised broad link between involvement in recycling practice and the domestic division of labour (Dickinson, 1994; Åberg et al., 1996; Díaz Meneses and Beerli Palacio, 2005; Oates and McDonald, 2006). The domestic division of labour was relevant at the level of responsibility for the specific domestic tasks which encompassed recycling tasks. Household 19 (couple) in which the household (representative form) was the maintainer provides a useful illustration. Both Darren and Hayley separated and stored recyclables but Darren was responsible for all other recycling tasks. The domestic division of labour was broadly equitable and cleaning and tidying in particular was a shared responsibility. However, Darren and Hayley had different roles within this, with Darren being specifically responsible for emptying bins around the house and cleaning and tidying the kitchen:

> *I'll see that [the bin for paper and card is] full…with me usually being more in the kitchen and cleaning and…tidying the kitchen sort of roles, with the bins being in the kitchen I think "oh the green little pot [of kitchen waste] needs emptying"…*

Thus, the domestic division of labour at the level of responsibility for the specific domestic tasks which encompassed recycling tasks was inequitable; this created a highly unequal involvement distribution even though a household theme was present. While the micro relationship remains the primary issue, in other households in which the household (representative form) was the maintainer, the domestic division of labour was broadly inequitable with one individual generally responsible for household tasks. With respect to the household (collective form) as the maintainer, the domestic division of labour at the level of responsibility for the specific domestic tasks which encompassed recycling tasks was largely equitable. This created an equal or marginally unequal distribution involvement, with recycling tasks correspondingly falling to individuals in specialised roles or individuals sharing recycling tasks. This generally reflected a broadly equitable domestic division of labour. With respect to a leader (narrowly influential form) as the maintainer, although a household theme was absent involving dissimilar relative interest, the leader was also responsible for all domestic tasks which encompassed recycling tasks. In some cases, this reflected a broadly inequitable domestic division of labour, with the leader generally responsible for household tasks.

The preceding explanation of involvement distribution and role structure does not fully explain how individuals took on specialised roles or how individuals fulfilling the various roles interact (Morgan, 1961; Lackman and Lanasa, 1993). Therefore, the discussion

will now examine these two issues (the second issue within consideration of the prompting of recycling task practice).

Assignment of specialised recycling roles to individuals

This section will examine the assignment of specialised roles to individuals with respect to the household (collective and representative forms) and then a leader (narrowly influential form) as the maintainer.

Where the household (collective or representative form) was the maintainer, in some cases it was only through the focus group that individuals became aware that particular recycling tasks were their specialised role. This again indicates that recycling tasks were perceived as requiring minimal effort. Most such households found it difficult to articulate how specialised recycling roles had come about, generally offering the explanation that it was because certain individuals dealt with the associated domestic tasks. However, falling into these roles was the typical scenario rather than their conscious orchestration, as illustrated by household 12's (family) discussion about why Paul was responsible for taking recyclables to the HWRC (dump it site):

> ME
> *Why is it you that always makes the journey to the dump it site?*
>
> PAUL
> *Well it's, well ((AS IF HE'S SEARCHING FOR A REASON))*
>
> DEBBIE
> *It's dirty and smelly. (LAUGHS)*
>
> PAUL
> *Yeah it's a smelly job and also cos it's (PAUSE) I dunno.*
>
> DEBBIE
> *It's just one of those jobs that we've not sort of said "oh you must do it because I do the dusting or the cooking", that you just fall into.*

Household members who had fallen into their roles said little about the nature of this process other than it had occurred. However, the terminology 'falling into' suggests that the assignment of specialised roles to individuals was generally the result of a gradual process over a period of time.

Moving recyclables into their storage points and on to the final recycling facility was frequently associated with the domestic activity of tidying. This association provides a useful example of how specialised recycling roles came about without being formally assigned. Moving recyclables into their storage points was often taken on by the individual who had the lowest tolerance towards untidiness. In some households one

individual consistently displayed the lowest tolerance and was therefore the individual responsible for gathering up recyclables and putting them in their storage points or moving them to the blue bin (and also responsible for tidying in general). For example, household 15 (couple) discussed why the blue bin was Roger's 'domain':

ROGER
[Blue bin] tends to be my job just because I'm around [more]. I think I've got less of a tolerance of having things hanging around the house so that when bins are full I'll tend to empty them, and I've done that as quite obsessive, short tempered really, I mean I don't regard that as something you should be doing, just that it's my thing.

ME
Is that more of an organic thing? It's not necessarily something that's been discussed, just that's how you are? (JUDITH LAUGHS)

ROGER
Yes

JUDITH
Your tolerance for mess is lower than mine. ((MAKES SOUND OF AMUSEMENT)) I can cope with a certain amount of jumble...But you're not, you're less happy with that...you'd rather have it somewhere.

ROGER
That's right.

In contrast, where moving recyclables into their storage points and on to the final recycling facility were shared as opposed to specialised roles, this was associated with the individual displaying the lowest tolerance towards untidiness varying across the household, as illustrated by household 6 (professional sharers):

MARIA
We're kind of moderately tidy in the house I'd say, in that generally speaking it only gets to a certain level and then somebody gets cross with it and tidies it, and I think that varies.

AARON
It depends who you're comparing us to really.

MARIA
I think some people have different tolerance levels (LAUGHS) to the mess in different rooms as well. |I tend not to spend any time in the lounge so I don't even notice when it piles up with newspapers whereas in [the dining room] I kind of get cross with it sooner and just deal with it and stick it in the other plastic crate in the kitchen...

AARON
|*Yeah*

AARON
Really depends whether I'm busy or not, if I'm not busy then I tend to keep stuff pretty tidy.

MARIA
Yeah

AARON

If I'm busy I'm about the worst person you can live with probably, (LAUGHS) I won't do anything!

There were limited examples of the household (collective and representative form) as the maintainer in which individuals has been assigned specialised roles as the result of a syncratic decision (indeed, as shall be discussed in the next chapter households rarely discussed how to go about recycling (p.141)). The syncratic decision related to responsibility for the encompassing domestic task rather than the recycling task itself. For example, in household 24 (family) Raj was probed about why he was responsible for all bin-related recycling tasks:

I think when we got married from early days...for some reason the bin happened to be my [job], I think because Sally just doesn't do that smell...so it was easier for me, and yeah I thought "well I'll pick that, that's not a problem, if that's all I've gotta do I ain't gonna complain", that was the original thing...

When Raj took on the responsibility for bin-related activities, the household was not engaged in recycling. However, as recycling practice developed Raj's role expanded to include the associated recycling tasks. Once specialised recycling roles were in place they were particularly stable. In some cases of the household (collective form) as the maintainer, the original reasons underlying role assignment were no longer valid but the role structure had remained unchanged. For example, in household 10 (homeowner/lodger) Karen was responsible for taking recyclables to the bring banks. In a rare example of role assignment through explicit syncratic decision making, Howard and Karen originally decided that Karen would take recyclables to the bring banks because she had access to a car. Although Howard now had a car the task remained Karen's specialised role.

With respect to a leader (narrowly influential form) as the maintainer, the assignment of the role of leader through syncratic decision making was rare. Some leaders had fallen into the role. For example, in household 23 (student sharers) Elliot was the leader. Although the other household members were facilitated recyclers, most individuals' relative interest was reasonably high. Thus, they were relatively confident that they would take glass items to the bring banks even in the absence of Elliot. Elliot did not mind carrying out this task, but had fallen into this role because he was consistently the first person to act due to his lower tolerance towards untidiness, as he explained:

I'm the one who's saying we've got to take [the glass] and like the plan this week was, I was saying "let's take [the glass]", I asked Duncan but then he went to the library and I asked Graham but then he was doing something else so I just took the bottles up on my own...[It gets] to the stage where [the basket] is literally overflowing and I'm like "well if no one else is gonna do it then I'm gonna have to do it".

The other household members appeared to rely somewhat on Elliot taking glass items to the bring banks. This was particularly interesting given that Guy, Graham and Stuart were all more involved in recycling practice in their family households:

STUART
I think I rely on Elliot a lot because back home it's my job to go and put the recycling bins out and I come here and I never think about doing it.

ELLIOT
Probably cos I do it for you! (LAUGHS)

STUART
I don't think you feel guilty that you haven't done it, but you always know that Elliot's gonna do it anyway...

GUY
For me back home I am the Elliot of my house, like I chase up my parents and my sister to do it and I am active, I will do a lot of the things that get done here by Elliot...I certainly never think "oh Elliot will do it" but maybe subconsciously I know that he probably will...But there's also the fact of I'm much busier at uni...it is on my list of things to do but it's much further down the list of things to do than it is on Elliot's...

GRAHAM
I think a lot of us sort of leave it because it's like "oh yeah Elliot will do it, we're all busy, we can't be bothered to take it down, Elliot will sort it out", but like back home I am a lot better at it, I probably actually recycle absolutely everything...so I think we would [take glass items to the bring banks] but it's just sort of like Elliot's already sort of got the system in place and sort of like that's why.

Thus, although the facilitated recyclers' lack of involvement in recycling practice was partly attributed to Elliot taking care of removal, it was also broadly due to the differences in living in the family and university household which included time pressure. Therefore, the tendency of some individuals to act as a leader appeared to be dependent on the household context.

Some leaders had consciously assigned themselves this role in a self-appointed manner. These leaders were acutely aware that if they did not take responsibility for recycling then recycling would cease. However, they were happy to do so and as long as the facilitated recyclers separated and stored recyclables, these leaders were content, as illustrated by Christian from household 17 (student sharers):

ME
Have you ever thought about asking any of the others to [take recyclables to the bring banks]?

CHRISTIAN
No

ME
Why is that?

CHRISTIAN

((VERY QUICKLY)) I don't think they'd want to do it and I wouldn't want to impose upon them. It would be nice if they'd want to do it but I mean for a start I don't think any of them go up near the [bring banks] on a regular basis and I do...So I mean if I was to ask them to do it I'd be putting them out and so that's why.

The assignment of the role of leader will be returned to the following chapter (p.153).

Prompting the practice of recycling tasks

With respect to the incorporation of recycling tasks into domestic routines, in limited instances, the recycling task was carried out every time the encompassing domestic task was carried out. As such, the domestic task acted as a prompt. For example, in household 25 (couple), Hilary deposited glass items in the bring banks on a daily basis while walking the dog and put paper/card in the blue bin every time she went outside. More commonly, recycling tasks were only practiced as and when required. A frequent example was taking recyclables to the bring banks only when storage points were full or overflowing. This task was still carried out in conjunction with supermarket shopping or making a trip in the car anyway but not until the quantity of recyclables necessitated movement. Similarly, the movement of paper/card from the storage point to the blue bin was frequently prompted by necessity when the storage point was full or overflowing or by the four weekly collection of the blue bin being imminent, whichever came first. Although recycling tasks were incorporated into domestic routines, the typical practice of recycling tasks only as and when required highlights one important difference between these two activities. As Oates and McDonald (2006) note, while domestic tasks such as laundry require organisation if a constant supply of clean clothes is to be maintained, there are no personal ramifications of not recycling regularly (with the exception of storage being an issue).

Putting the blue bin out for collection was prompted in different ways. Some households had put the scheme card providing collection dates in a prominent position in the home such as on a notice board or had recorded the dates on a calendar or in a diary. Other households were prompted to put their blue bin out for collection simply by seeing other bins out on the street.

Where the household (collective form) was the maintainer and therefore different individuals were responsible for different recycling tasks in specialised roles, there were very few examples of household members asking or instructing other individuals to carry out their task. Verbal prompting was evident only in households where individuals had strongly defined roles either due to formal assignment or due to logistical reasons. However, such prompting simply represented a reminder to carry out the task which the individual was already inclined to do. For example, in household

6 (professional sharers) Robert was mainly responsible for taking recyclables to the bring banks because he had access to a car. Robert talked about how this task was mainly prompted by him perceiving it to be a necessity prior to a shopping trip:

> ME
> *...Are you ever prompted to [take recyclables to the bring banks] by anyone else...?*
>
> ROBERT
> *They haven't prompted me yet except for the odd comment of can I take it down if I remember. It's mainly if I've been in the kitchen and seen it, that's literally it.*
>
> MARIA
> *We tend to live kind of separate lives and we don't see each other that much when we're in the house.*

The apparent lack of verbal prompting may be due to the inability of households to remember verbal communication about mundane activity such as recycling, or a desire among households to create a more harmonious picture of recycling practice. However, where the household (collective form) was the maintainer, the lack of verbal prompting was indicative of how household members worked as a team in relation to recycling practice. Given the presence of a household theme and the incorporation of recycling tasks into domestic routines, household members simply recognised the need to act and then did so accordingly. Thus, the notion of 'getting on with it when it needs to be done' was very much evident. This was epitomised by household 6 (professional sharers). As illustrated above, the three household members tended to live separate lives. However, all individuals took it upon themselves to carry out recycling tasks when they needed to be done thus maintaining recycling with little recycling-related verbal communication and little time spent together in the home.

Separation and storage of recyclables: habit, conscious effort or physically prompted

The separation and storage of recyclables refers to an individual putting such items in storage points rather than binning them, which may involve the prior rinsing of items such as glass jars and food cans. This task was a shared rather than a specialised role in the vast majority of households. However, in households in which a leader (narrowly influential form) was the maintainer, facilitated recyclers did not necessarily separate and store recyclables to the same extent as the leader. Separation and storage was either carried out in a habitual manner or involved conscious effort; or to use Hobson's (2003) conceptualisation, such behaviour was either part of an individual's practical consciousness or discursive consciousness respectively.

Separation and storage due to physical prompting represents a special case of conscious effort.

Separation and storage was often described as habit or 'automatic', most commonly by individuals with high relative interest but also by some facilitated recyclers. For example, household 7 (family) was probed about whether their behaviour was accompanied by a conscious effort to recycle:

> BARRY
> *Automatic now |isn't it? It's automatic, yeah, if a plastic milk bottle's empty I'd rinse it out and put it on the shelf in the kitchen.*
>
> AMANDA
> *|It's automatic now, no problem at all.*

However, habitual separation and storage was often confined to particular recyclables dependent on material, size, quantity, or location in the home, or a combination. In other words, habitual behaviour was not necessarily activated by the general generation of recyclables but by the generation of recyclables under certain conditions; if these conditions were not met then recyclables were habitually binned. This issue will now be illustrated.

Individuals who referred to separation and storage as habit often gave the impression that within-material recycling of materials such as paper/card and plastics was proceeding at its maximum level by using words like 'everything' or 'all'. However, when probed on this issue it was often evident that some items were not being captured. For example, household 22 (couple) were probed about the types of plastic items they recycled:

> HANNAH
> *I've just thought, I (PAUSE) don't recycle my shampoo and conditioner bottles...I just put those in the bin in the bathroom and they [end up not being recycled]. This is really interesting (LAUGHS) |just to know what you do and why you do it cos I don't know why [I would do that]!*
>
> MARK
> *|It is yeah!*

Both Hannah and Mark binned plastic bottles generated in the bathroom which was in contrast to their behaviour in the kitchen – their behaviour was thus room-dependent (Pocock et al., 2008). As was typical with individuals whose habitual separation and storage behaviour was dependent on room, size or quantity, Hannah and Mark were surprised and bemused by the inconsistency in their behaviour which they were

unaware of until the focus group. Hannah explained her behaviour in terms of strongly associating the separation and storage of plastic bottles with kitchen-related routines:

> *...There's so much waste generated in the kitchen and then so much of it is obviously to be recycled with the cans and the plastic, it really is just the routine and it's something that...fits in with my sort of thinking when I'm in the kitchen. And you know I'm not sure it is about laziness because if...I happened to have bought a bottle of water...and that happened to be in the bedroom I think I would bring that plastic bottle through and pop it in the box. That's an equal walk as it is from the bathroom. Erm, I just don't think I've followed it through, I don't think I've possibly thought as much about what I'm trying to achieve by recycling plastic cos if I was really sort of thinking consciously about "why you're recycling plastic Hannah", you know what are the reasons and making the effort to do that then I would have thought I would think that well if you create plastic bottles in the bathroom [you can recycle them]. So I really just do think it's something about the routine of the kitchen and things that are most obvi-, I don't know if there are things written on milk bottles and things about recycling but just things that seem obvious.*

In a similar fashion to room-dependent behaviour, individuals who habitually separated and stored larger paper/card items such as newspapers but habitually binned small pieces of paper were reasonably common. Some individuals' behaviour was also related to the quantity of recyclables. Thus, while a single receipt was binned, a number of such items generated together were separated and stored. There were also individuals whose habitual behaviour extended to only one material. For example, the facilitated recyclers Stuart, Graham, Guy and Duncan from household 23 (student sharers) agreed that the separation and storage of glass items had become a habit. While they were influenced by formative experiences of recycling glass during childhood, the nature of the recyclable and the presence of a formal storage point (designated container) were also important:

> GUY
> *It's the nature of the object I think because a lot of what is contained in a jar is used over such a long period of time when it comes to the emptying event, that then is often now associated with the event of putting it in the basket I think.*
>
> GRAHAM
> *I know what you mean actually...*
>
> GUY
> *Whereas a piece of paper is such like an everyday object and it's so easily destroyed, it's not got that kind of (PAUSE) feel about it...*
>
> DUNCAN
> *...With a bit of paper you can just screw it up and put it in the bin, you don't really consider that as like wasting, as opposed to like if you've got a bottle that you know it's a big chunky solid object...*
>
> *GUY*
> *...And maybe recycling glass has become a habit because of the way that it's facilitated with the basket.*
>
> DUNCAN

Yeah it's so easy you know, I mean if it's a choice between the bin on your right and the bottle bin on your left I mean it's obviously gonna go in the bottle bin…

GRAHAM
Considering the bin's overflowing anyway (LAUGHS)…

ME
Is the difference between glass being a habit and paper not being a habit because there's not that specific place?

STUART
...I think if you had a recycling paper basket and obviously a normal bin you would always then put the paper in the recycle basket and I think that's what partly has happened obviously with the glass, that you will feel guilty putting that glass in the bin and I think that would probably happen if you had a paper basket.

ELLIOT
You know what's gonna happen now don't you! (LAUGHTER)

Thus, for these facilitated recyclers the presence of a formal storage point was central to the development of habitual separation and storage. The role of formal storage points in physical prompting will be returned to shortly and the importance of such points will also be discussed further in the next section (p.116-8). Other individuals described their habitual behaviour as the result of recycling for a number of years, recognising that such behaviour initially involved conscious effort (Hobson, 2003). In both cases the development of habitual separation and storage generally appeared to be the result of a gradual process over a period of time.

Separation and storage of recyclables involving conscious effort took two forms whereby active choice was either independent of or dependent on physical prompting. The former position was more commonly exhibited by individuals with high relative interest, as illustrated by Hannah from household 22 (couple):

> *When I'm throwing away bigger bits [of paper] it's sort of a conscious thing that I think "right these are going in the recycle bin, this is a big piece of paper that needs to be recycled".*

Hannah's behaviour with respect to paper, or at least large pieces of paper, was in contrast to her previous references to her recycling behaviour being entrenched in kitchen-related routines and therefore habitual. However, the association of recycling with kitchen-based routines was largely the result of formative experiences during childhood – her family recycled but did not recycle paper. Indeed, separation and storage involving conscious effort was more commonly reported by individuals who were relatively new to recycling in general or a particular material. This is in keeping with individuals describing conscious behaviour developing into habitual behaviour with the passage of time.

Just as habitual separation and storage was often confined to particular recyclables dependent on material, size, quantity, or location in the home, this was often the case where separation and storage involved conscious effort. For example, it was commonly the case that conscious effort to separate and store paper did not extend to small pieces of paper meaning that such items were habitually binned. For some individuals disposing of small pieces of paper did not invoke the sense of guilt that large paper items did. Other individuals simply could not explain why the conscious effort to separate and store did not extend to small pieces of paper and were bemused by their behaviour.

For facilitated recyclers, the separation and storage of recyclables was primarily due to physical prompting. Prompting, as a type of intervention strategy, has been regarded by some authors as the provision of written or verbal information to encourage a particular EA, e.g. Porter et al. (1995), Schultz et al. (1995). Thus, with respect to recycling, written prompts include flyers and newspaper/magazine advertisements that advocate recycling and explain how to use recycling services. Verbal prompting delivers the same types of information but in face-to-face contact or over the telephone. Prompting includes information which is merely a reminder to practice a particular EA. Indeed, McKenzie-Mohr and Smith (1999, p.61) define a prompt solely as reminder to act:

> *"A prompt is a visual or auditory aid which reminds us to carry out an activity that we might otherwise forget. The purpose of a prompt is not to change attitudes or increase motivation, but simply to remind us to engage in an action that we are already predisposed to do."*

Physical prompting has some similarities with McKenzie-Mohr and Smith's (1999) definition of prompting. Facilitated recyclers exhibited low relative interest and were inclined to habitually bin recyclables. However, storage points put in place by the leader acted as a visual stimulus (a reminder to recycle) (Brook Lyndhurst, 2004b) and created a situation whereby separating and storing recyclables was equivalent in effort to binning them. For example, household 23 (student sharers) was probed regarding the extent to which all six household members recycled all glass bottles and jars to which Duncan responded:

> *I think we're all quite good really because there's only about that much space ((HOLDS HANDS ABOUT TWO FEET APART)) between the bin and the basket of glass so it's not really more effort to not put it in the bin, and it's probably virtually always got quite a big level of things in it so you're always aware that, you know you should just put the glass in there as opposed to in the bin.*

Thus, physical prompting invoked a 'might as well recycle it' feeling in facilitated recyclers which acted to overcome their low relative interest and prevent them from 'opting' to bin recyclables in a habitual manner. In other words, the binning of recyclables, which was part of facilitated recyclers' practical consciousness, was continually brought into their discursive consciousness by physical prompting, resulting in the separation and storage of recyclables. A few facilitated recyclers also expressed the view that putting recyclables in the bin would invoke a sense of guilt or feel 'wrong', as illustrated by Neil from household 8 (couple):

> *Because the two bins are right next to each other if I had a newspaper in my hand I now, it would just seem wrong to put it into the normal bin...[It would] seem malicious to do that.*

While the role of storage points has been emphasised here, it is important to remember that physical prompting also incorporates the removal of recyclables by the leader which allowed for their ongoing separation and storage. Indeed, in contrast to McKenzie-Mohr and Smith's (1999) definition of prompting, physical prompting represents a situation whereby individuals who are *not* predisposed to participating in recycling are facilitated to do so.

Comparing the behaviour of facilitated recyclers in different rooms further highlights the dependency of their separation and storage behaviour on physical prompting. For example, in household 17 (student sharers) Lee and Damon generally put recyclables generated in the kitchen in the relevant boxes, but any recyclables generated in their bedrooms were binned in those rooms. They were probed about this difference:

ME
Why would you not bring things through [to the kitchen]?

LEE
It's never occurred to me...

ME
How about you Damon?

DAMON
Yeah I concur (LEE LAUGHS) with Lee's statement...

ME
Why does it occur to you to recycle something in [the kitchen] but not in your bedroom?

DAMON
Well like the bean cans, if I'm not looking at the boxes then I just kind of forget but if I turn round and see the boxes I'll whack it inside.

ME
So there has to be that kind of visual

DAMON
Yeah I'm a bit stupid

ME
Okay. (LAUGHTER) What about you Lee?

LEE
Erm, it's the fact that the boxes are here.

Thus, physical prompting had limited influence in the sense that it was room-dependent. For current facilitated recyclers, the influence of physical prompting was also limited in the sense that it was a means of socialisation influence with respect to behaviour only. In other words, the behaviour of these individuals remained dependent on the recycling system attributable to the leader, meaning that behaviour change was not permanent. This was the case even when the presence of formal storage points had led to habitual separation and storage. However, physical prompting was also an important means of socialisation influence with respect to relative interest and behaviour, which represented permanent behaviour change. This issue will be discussed in the following chapter (p.149-50).

Separation, storage and removal of recyclables as a system

Recycling tasks have thus far been considered largely in isolation and the discussion now turns to examining the recycling process more holistically. Many households portrayed a very ordered picture of recycling practice with a system in place for the separation, storage and removal of recyclables. The term 'system' does not just represent my interpretation, it was also a term used by the households in reference to recycling practice. When households referred to having a system they often emphasised the use of formal storage points. However, recyclables must also be moved to the final recycling facility. Therefore, a system represents the use of formal storage points *and* the incorporation of recycling tasks into domestic routines. These two components are aligned with separating recyclables into containers and combining recycling tasks with other activities (Werner and Makela, 1998), which Hansmann et al. (2006) referred to as 'self-organisation strategies'. Thus, self-organisation refers to the extent to which a system was in place for the separation, storage and removal of recyclables. Households with a system exhibited high self-organisation, while households at the opposite of the spectrum which lacked such a system, exhibited low self-organisation either with respect to the separation and storage of recyclables (informal storage points), the removal of recyclables (comparatively less routinised removal), or more commonly both. The two elements of a recycling system will now be

considered. The discussion of formal storage points focuses on their role as the cornerstone of a recycling system. However, as already discussed, formal storage points also facilitated the development of habitual separation and storage (p.111-2), and their presence also prompted facilitated recyclers to separate and store recyclables (p.113-4).

A storage point for recyclables refers to a location or container either within or external to the home, where recyclables were stored until they were transported to the final recycling facility. The exact nature of such points varied across households with a range of locations and containers being utilised. The simplest form consisted of locations where recyclables, particularly paper/card were piled up (often diffuse in nature). Carrier bags and boxes not deliberately acquired for recycling but now used for this purpose were also evident. Such storage points were informal. Formal storage points represented specially designated cupboards, bags, bins and containers, often with different storage points for different materials. The existence of a main storage point was evident across households and this was commonly located in or near to the kitchen such as in the garage or utility room. In some households additional storage points or 'staging posts' (Brook Lyndhurst, 2004b) were also used, in the kitchen or in other rooms in the home, sometimes making use of another container.

Storage points served a storage role allowing households to store recyclables in a tidy manner 'out of the way' and bypass the need to make continual journeys to the final recycling facility. However, formal storage points also had wider significance. For example, household 12 (family) had a basket for paper/card in the kitchen:

> DEBBIE
> *I came up with that little basket for the kitchen.*
>
> PAUL
> *Yeah good idea that love*
>
> DEBBIE
> *Rather than going out the front door ten or eleven times a day we just put [paper and card in the basket. Just so if it's there we know what it's for.*

Debbie's last comment indicates that the basket introduced an element of formality into paper/card recycling. The importance of formal storage points is further highlighted by examining households' explanations as to why certain materials or items within material types were not recycled. For example, household 6 (professional sharers) recycled paper/card, glass bottles/jars and plastic bottles but the recycling of drink cans was *"a bit hit and miss"*. They were probed on the reasons for this:

MARIA
Just cos we don't have an allocated space I guess.

AARON
Yeah and we don't use many.

MARIA
We don't drink enough of them to actually have a set way of doing things…

ROBERT
I did notice once that there were a load of cans in with the bottles when I did the recycling, but for a couple months worth of bottles there were only about five cans, so I recycled them when I was there but it just doesn't seem to be enough that it warrants its own box which would definitely make us recycle them.

Thus, Robert's comments again indicate that designated containers introduced a formal aspect into the recycling process which facilitated recycling. This point also relates to behaviour which was room-dependent or size-dependent. For example, as highlighted earlier, household 22 (couple) binned plastic bottles generated in the bathroom and single small pieces of paper which were often generated in the bedroom. Hannah and Mark were unaware of the inconsistency in their behaviour until the focus group:

MARK
I think we would start to do it if we had the system in place like we've got [in the kitchen]…Having a system will make things a lot easier won't it, I mean having the glass up there and the cans up there means we do it.

HANNAH
Yeah…

MARK
Yeah I think that what we've realised is that we don't [recycle plastic bottles in the bathroom and single small pieces of paper in the bedroom] and I would say it's because I've produced it somewhere that we didn't have the recycling boxes…I think we'll probably put a paper bin in the bedroom and a plastic bin in the bathroom, probably I should think, as of today. (LAUGHS)

The use of formal storage points was associated with the perception of recycling as requiring minimal effort, as long as such points were easily accessible. Putting recyclables in the storage point was perceived to be a comparable option to binning the item. This notion was most notably expressed by facilitated recyclers, as discussed earlier, and is illustrated by household 8 (couple):

NEIL
We've got an easy system so it's no extra effort to do |something, it's just having it in a different place.

LEAH
|Yeah, you're putting something in the bin so you may as well put it in that bin as opposed to

NEIL
Yeah like the two bins are next to each other.

Although formal storage points were the cornerstone of a recycling system, the system also needed to provide for the movement of recyclables to the final recycling facility, as illustrated by Neil from household 8 (couple):

In my mind [recycling has] got to be easy and it's got to have a sensible way of starting and finishing and if it's just a question of just keeping putting glass bottles somewhere different then that seems to me...you'll end up with a massive huge pile of glass bottles and you'll eventually just say "oh sod it, we'll just throw them all in the normal bin".

In many households recyclables were only moved to the final recycling facility when it was a necessity, i.e. when storage points were full or overflowing. However, removal was unproblematic when such recycling tasks were incorporated into domestic routines and therefore perceived as requiring minimal effort. In contrast, a few households spoke about 'unsuccessful' recycling whereby recyclables were separated and stored but not removed. For example, Robert from household 6 (professional sharers) talked about his experiences of recycling while living in previous shared households:

ROBERT
My mum's always recycled bottles and cans so I've always tried but as there's nowhere really that close that I could walk to it never got done that often cos all the supermarkets were quite a distance away, so I've always tried but only sometimes I've actually managed successfully to do it for a while or longer than a few months at a time...

ME
What do you mean by "successfully"?

ROBERT
...Sort of going regularly and making a routine out of it whereas before it just used to pile up.

Thus, 'successful' recycling involves the routinised movement of recyclables to the final recycling facility. Although recycling tasks related to removal were commonly incorporated into domestic routines, there were a number of households in which such recycling tasks were comparatively less routinised, and therefore comparatively problematic, as illustrated by Nicholas from household 21 (family):

Diane will put bottles in sacks...and then drive around for ages with them in the car boot and eventually I get pissed off and I'll say "right okay, if in two days that's not gone out of the car boot then I'm gonna bin it in the conventional bin".

Thus, pulling together a number of points which have been made across this chapter, the use of formal storage points and the incorporation of recycling tasks into domestic routines were associated with the perception of recycling as requiring minimal effort and not as additional work in terms of domestic activity. Furthermore, the routinised

removal of recyclables to the final recycling facility was regarded as successful recycling. Thus, for households which exhibited a system for the separation, storage and removal of recyclables, recycling was perceived as successful, requiring minimal effort, and was not perceived as additional work. Hence, recycling practice was seen as part of the normal activity of the household, i.e. embedded in everyday life. In order to illustrate this holistic position, two households with a recycling system (but with different maintainers) will be contrasted with a household which lacked such a system.

Household 7 (family) was comprised of Barry and Amanda and their children Christopher (8) and Rachel (18 months), while household 8 (couple) was comprised of Leah and Neil. Both households essentially exhibited higher level recycling as they used their blue bin for paper/card and bring banks for glass bottles/jars, food/drink cans, and plastics, and composted kitchen and garden waste. In household 7, the household (collective form) was the maintainer (Barry and Amanda) while in household 8, a leader (narrowly influential form) was the maintainer – Leah was the leader and Neil was a facilitated recycler. Both household 7 and household 8 exhibited a recycling system as shown in Figure 8(a) and (b) respectively. Formal storage points were used – storage boxes in the case of household 7 and a storage box and a set of bags designed specifically for recycling in the case of household 8. These storage points were easily accessible, located in the garage in household 7 and in the kitchen in household 8. Household 7 utilised a staging post in the kitchen where recyclables were sometimes placed before they were moved to their storage points. Household 7 regarded separation and storage as 'automatic'. Household 8 regarded the separation and storage of recyclables as being as easy as binning them due to the close proximity of the storage points to the bin. In both households, although recyclables generated in upstairs rooms were binned, they were separated and stored when these bins were emptied so this does not appear to have had a particularly negative impact on the capture of recyclables. The behaviour of individuals was homogeneous with respect to materials and items with material types. Contaminants (e.g. food-contaminated card) were correctly binned in a homogeneous fashion. The reasons underlying this homogeneity of behaviour relate to how knowledge for action was transmitted through households which will be discussed in the next chapter (p.155).

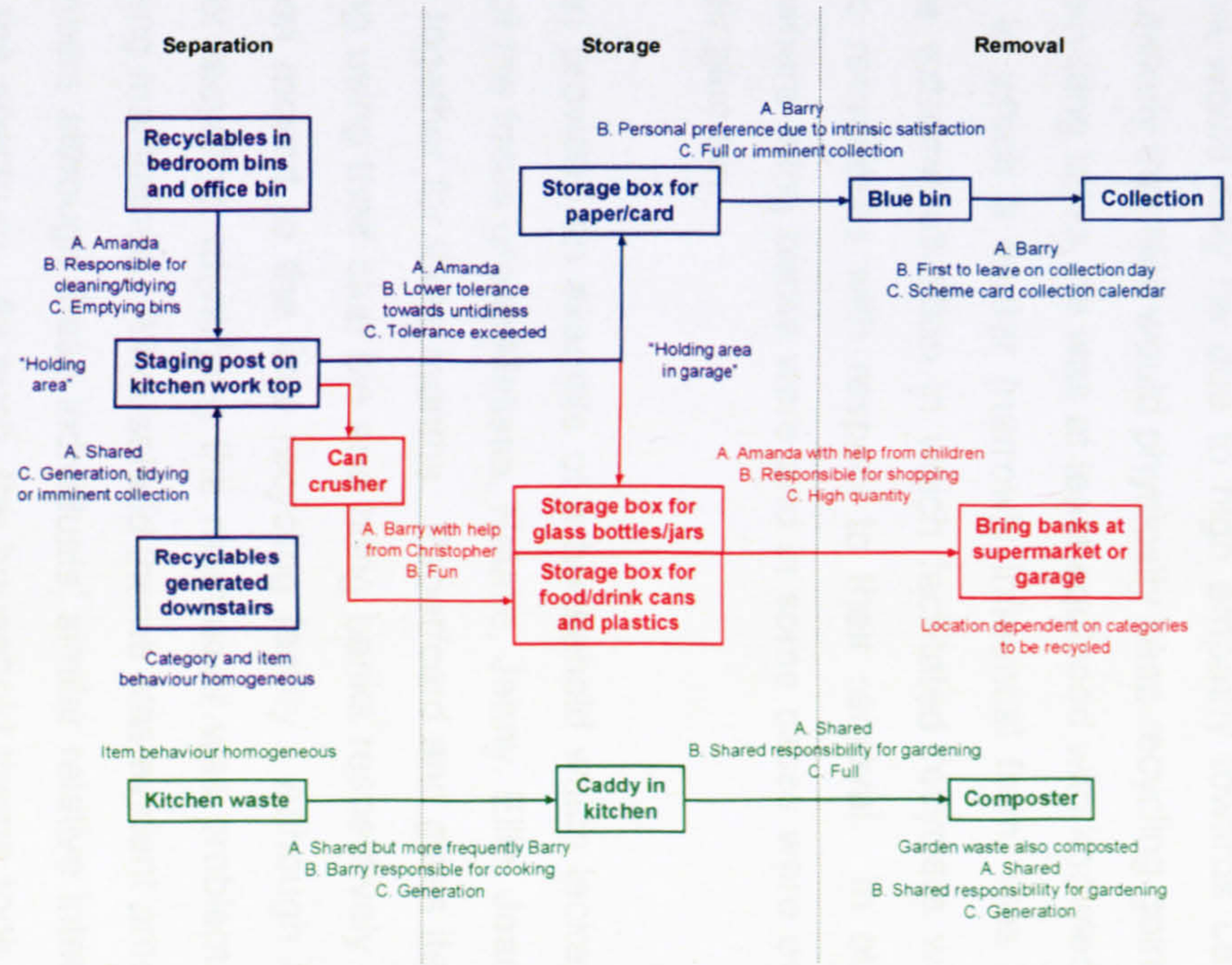
In household 7, the equal involvement distribution, and why recycling tasks fell to individuals in specialised roles within this, was explained by a household theme and an equitable domestic division of labour at the level of responsibility for the specific domestic tasks which encompassed recycling tasks (which reflected a broadly equitable domestic division of labour). In household 8, the highly unequal involvement

distribution was explained by the absence of a household theme – dissimilar relative interest, with Leah and Neil exhibiting greater (and high) and lesser (and low) relative interest respectively – and physical prompting. Furthermore, although the domestic division of labour was broadly equitable, it was inequitable at the level of responsibility for the specific domestic tasks which encompassed recycling tasks; with the exception of cooking, Leah was responsible for all domestic tasks associated with recycling tasks. In both households the practice of recycling tasks relating to removal was typically prompted by necessity, i.e. storage points being full. However, recyclables did not build up indefinitely as the removal of recyclables represented routine tasks.

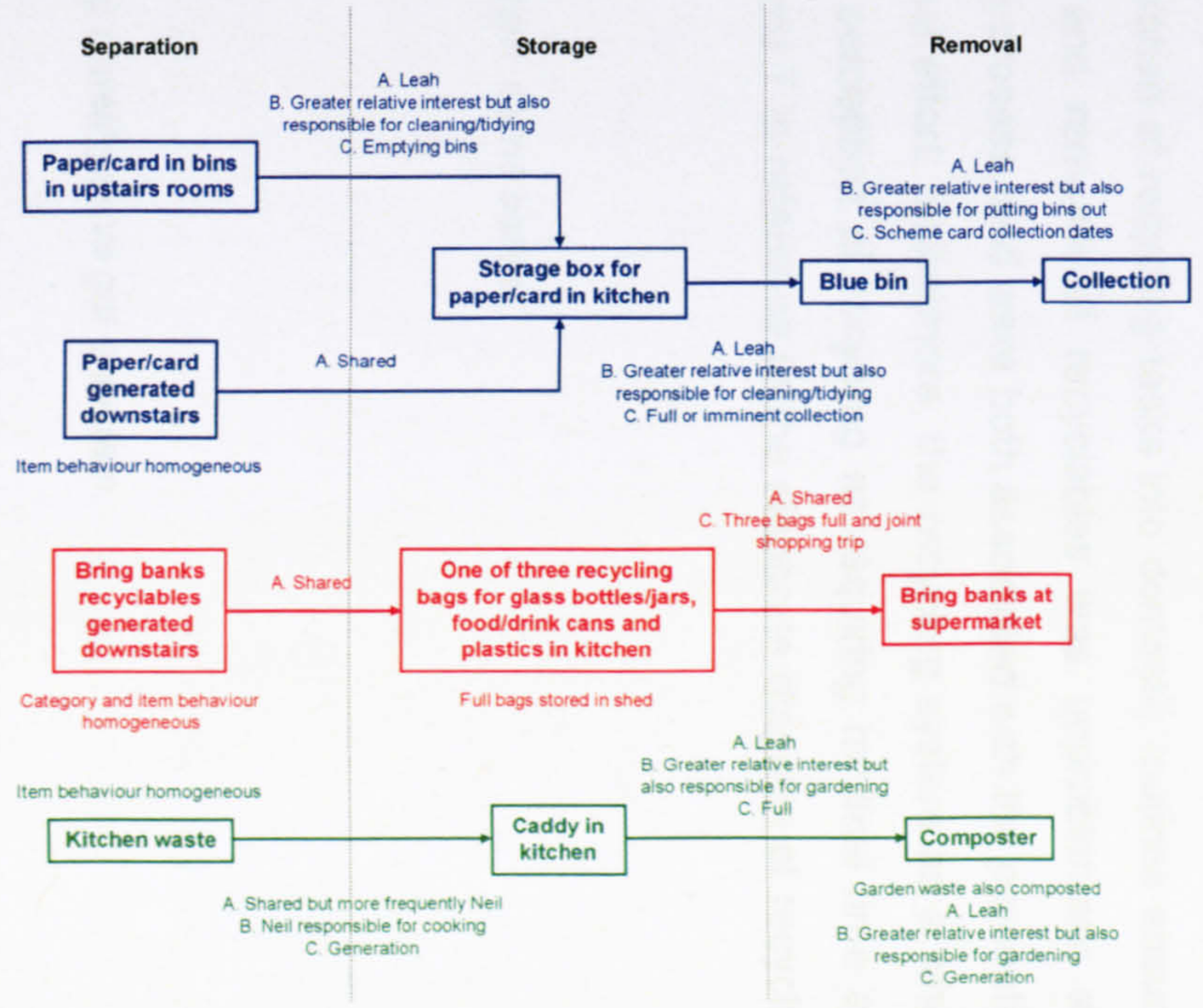
Figure 8. Recycling systems in two households with different maintainers.

A refers to whether a recycling role was shared or fell to one household member in a specialised role. B refers to the reasons underlying role structure. C refers to what prompted recycling task practice. Purple represents the general separation and storage of recyclables. Blue represents paper/card recycling using the blue bin. Red represents glass bottles/jars, food/drink cans and plastics recycling using bring banks. Green represents kitchen and garden waste composting.

(a) Recycling system in household 7 with the household (collective form) as the maintainer



(b) Recycling system in household 8 with a leader (narrowly influential form) as the maintainer



High self-organisation was clearly evident in households 7 and 8. The use of formal storage points and the incorporation of recycling tasks into domestic routines ensured that the separation, storage and removal of recyclables was unproblematic and remained a continuous ongoing process, and were both associated with the perception of recycling as requiring minimal effort; furthermore, the recycling system as a whole was also associated with the perception of recycling as requiring minimal time and effort, as illustrated by household 7 in reference to the elaborate diagram of recycling practice they produced:

BARRY
But as far as that big diagram, it's no bother.

AMANDA
It's easy!

BARRY
It isn't any extra time.

AMANDA
No it isn't at all, but nothing is until you've got a system.

With respect to household 8, although Neil was a facilitated recycler he was reasonably familiar with entire recycling process largely because he and Leah generally took recyclables to the bring banks when they shopped together. Neil professed that apart from separating and storing recyclables he would not carry out other tasks unless verbally prompted and then this would only be due to high empathy towards Leah. Therefore, although it seemed unlikely that Neil would physically keep recycling going if Leah ceased to carry out her recycling tasks, he was at least equipped with knowledge for action. Other households in which a leader (narrowly influential form) was the maintainer represented a more extreme situation in which facilitated recyclers were unaware of what happened to recyclables with respect to their removal. In other words, they were unaware of where bring banks were and in some cases were even oblivious to the existence of their blue bin.

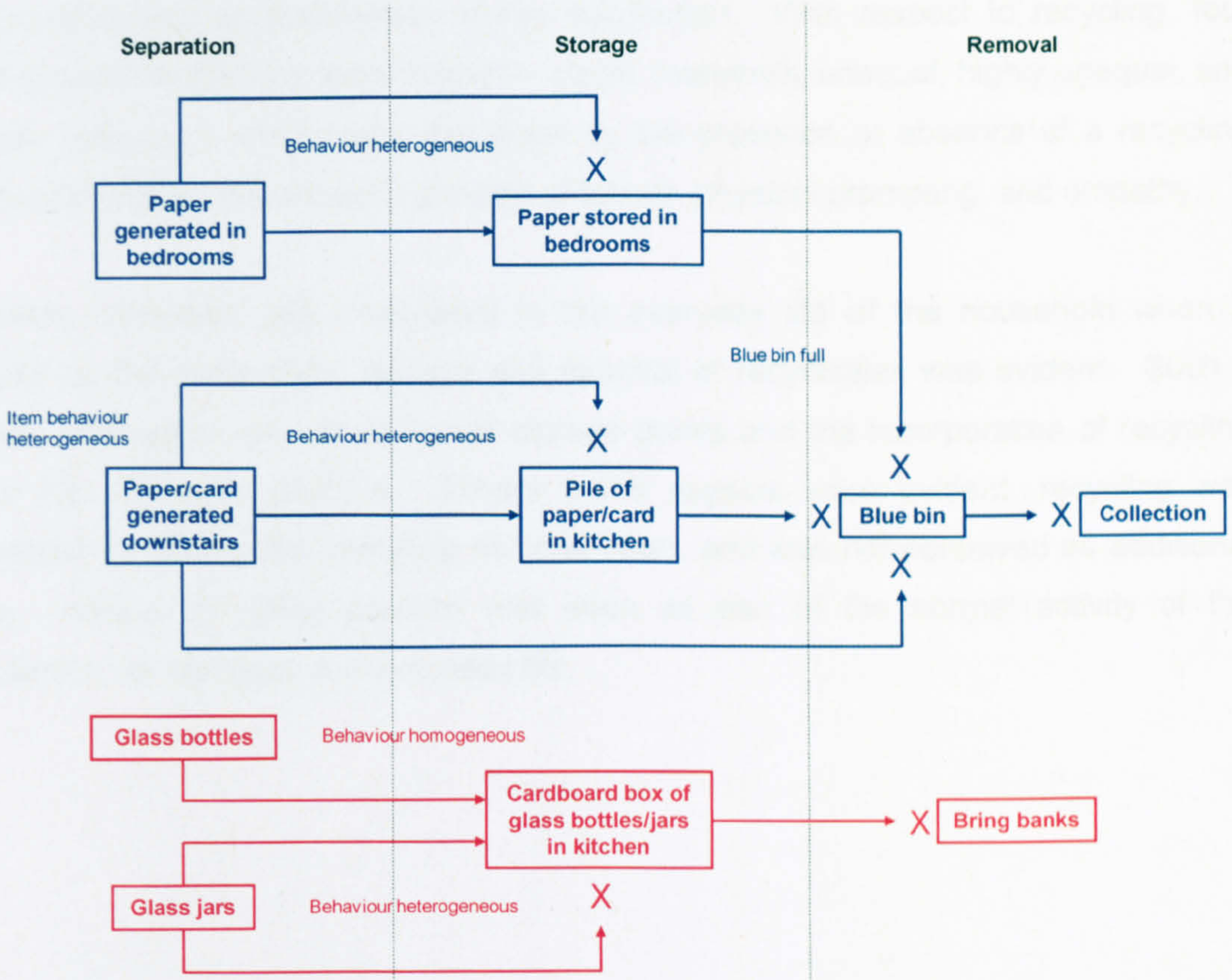
Household 11 (student sharers) provides an example of a household which lacked a recycling system. At the time of the focus group Melissa, Natalie, Jenny, Ellie, Joanne and Kimberley had been living together for three months. Paper/card and glass items had been collected for recycling using their blue bin and bring banks respectively but these recyclables had not been moved to the final recycling facility. Although this household exhibited lower level recycling, identifying the maintainer was problematic given that recycling was not being maintained. A household theme was evident among the majority of household members although these individuals' similar relative interest was towards the lower end of the spectrum. As such, the household theme took the

form of wanting to participate in familiar and convenient recycling, i.e. using bring banks for glass items and the blue bin for paper/card. However, some household members also behaved like facilitated recyclers in the sense that they were prompted to separate and store recyclables by the presence of storage points. Thus, the household displayed characteristics of both the household (collective form) and a leader (narrowly influential form) as the maintainer. This highlights that households are not necessarily easily characterised, particularly early on in their recycling history.

The lack of a recycling system is shown in Figure 9. Informal storage points were used which consisted of a makeshift pile of paper/card and an unspecific cardboard box for glass items in the kitchen. Recyclables were not removed from the home and the consequent build up of recyclables inhibited the separation and storage of paper/card. Despite having the scheme card which included a calendar of collection dates on the kitchen wall they had continued to miss collections meaning that the blue bin remained full. Missing a collection prompted some comment but responsibility for this task remained unresolved. The makeshift pile of paper/card was largely a consequence of some individuals storing paper in the kitchen due to the blue bin being full. Other individuals did not separate and store paper/card as they viewed the pile as unsightly and problematic. Some individuals preferred to separate and store paper/card directly in the blue bin but were unable to do so as the bin was full. The behaviour of individuals was heterogeneous with respect to paper/card items and contaminants. The reasons underlying this heterogeneity of behaviour relate to how knowledge for action was transmitted through households which will be discussed in the next chapter (p.157-8). The separation and storage of paper/card generated in upstairs rooms was heterogeneous with some individuals engaging in this practice and others not. While the separation and storage of glass bottles was homogeneous across the household, behaviour with respect to glass jars appeared to be heterogeneous as some individuals had no recollection of recycling such items. Glass bottles/jars built up indefinitely as taking recyclables to the bring banks was viewed as problematic without access to a car and a task that required a great deal of effort. Although all six individuals walked past the bring banks every day on their way to university this task was not recognised as one which could be integrated into existing routines.

Figure 9. Lack of a recycling system in a household with no clear maintainer.

Blue represents paper/card recycling using the blue bin. Red represents glass bottles/jars recycling using bring banks.



The lack of a recycling system in household 11 inhibited the continuation of the recycling process, most notably for paper/card recycling. However, this household was an extreme case in that it exhibited the lowest self-organisation both in relation to storage points and the incorporation of recycling tasks into domestic routines. In other households which exhibited low self-organisation, the continuation of the recycling process was not inhibited. Although low self-organisation did not necessarily prevent long term participation in recycling, low self-organisation appeared to be a barrier to higher level recycling. This issue will be discussed in the following chapter (p.162).

Summary

This chapter has addressed the research question – How are environmental actions practiced in households? – with respect to recycling/composting. This summary, along with the summaries of the following two chapters, will focus on the main findings presented in the chapter, leaving other findings to be recapped in chapter 7. Two main findings have been presented. Firstly, recycling was maintained by a number of

different units – household (collective form), household (representative form), leader (narrowly influential form), leader (widely influential form), and individuals. The EA enactor/maintainer is the unit physically and notionally responsible for EA practice. Each enactor/maintainer is characterised by a particular distribution of involvement in EA practice *and* an explanation of the distribution. With respect to recycling, four involvement distributions were evident – equal, marginally unequal, highly unequal, and entirely unequal – which were explained by the presence or absence of a recycling household theme, the domestic division of labour, physical prompting, and empathy.

Secondly, recycling was embedded in the everyday life of the household when a system for the separation, storage and removal of recyclables was evident. Such a system represents the use of formal storage points and the incorporation of recycling tasks into domestic routines. Where these aspects were evident, recycling was perceived as successful, requiring minimal effort, and was not perceived as additional work. Hence, recycling practice was seen as part of the normal activity of the household, i.e. embedded in everyday life.

Chapter 5

Development of environmental action practice: recycling/composting

This chapter addresses the research question – How are environmental actions adopted in households? – with respect to recycling/composting. One main finding is implicit throughout this chapter, namely that recycling practice typically developed gradually rather than in one step (indeed, as was the case with repetitive EA practice in general). As such, the exploration of recycling adoption is included within broader exploration of how recycling practice developed. Three aspects of recycling practice are focussed on: the maintainer (i.e. the unit which was physically and notionally responsible for recycling practice); the recycling repertoire (i.e. the materials recycled on a day to day basis); and self-organisation (i.e. the extent to which a system was in place for the separation, storage and removal of recyclables). Households were able to articulate the development of storage points, but said little about the development of the routinised removal of recyclables other than it had taken place. Therefore, discussion of self-organisation will focus on its more tangible aspect, i.e. the nature of storage points. The previous chapter also recognised that the habitual separation and storage of recyclables developed gradually (p.112) and this was also likely to be the case in relation to the assignment of specialised recycling roles to individuals (p.104).

This chapter is structured around two main findings. Firstly, that EA adoption and change to repetitive EA practice was driven by a number of different units. As such, the first section outlines these drivers of EA adoption and drivers of EA practice change. (Although this chapter focuses on recycling/composting, the drivers of EA adoption and change to EA practice were not sufficiently different across the four activity types to warrant separate discussion in relation to recycling/composting and wider EAs; hence the general discussion here.) Secondly, that multiple routes to recycling practice were evident when the driver of recycling adoption was followed through time to the present maintainer. Thus, the second section examines these different routes. The gradual development of the maintainer, recycling repertoire and self-organisation is considered within this discussion, along with what prompted

recycling adoption and from where and how knowledge for action was sourced and how it was transmitted through the household. The final section of this chapter examines the barriers to higher level recycling.

Drivers of environmental action adoption and change to environmental action practice

In the original framework household member involvement in EA adoption was conceptualised at two levels, namely general responsibility for EA adoption and the relative influence of household members across the decision making process of need recognition, information search and final decision. Both aspects have been incorporated into the concept of the driver of EA adoption. The driver of EA adoption is the unit ultimately responsible for the physical initiation of a repetitive EA or the practice of a one-off act/purchase in the current household. Each driver is characterised by a particular pattern of relative influence across the decision making process of need recognition, information search and final decision, and the culmination of the decision making process in the presence or absence of an EA household theme (and the physical initiation of a repetitive EA in this context). Four drivers of EA adoption were identified across the four activity types – household, individuals, non-influential leader, and influential leader. Parallels can be drawn between the former two drivers and joint initiators of EAs and between the latter two drivers and single initiators of EAs (Åberg et al., 1996; Grønhøj, 2006; Oates and McDonald, 2006; Grønhøj and Ölander, 2007). Before an overview of each driver is provided (Figure 10), the nature of the decision making process and the characterisation of relative influence across the decision making process stages will be examined.

Although each driver of EA adoption refers to a particular pattern of relative influence across the decision making process of need recognition, information search and final decision, this should not be taken to mean that the process proceeded in a step by step fashion (Kirchler et al., 2001). Indeed, if the seeking of information from external sources aspect of information search is emphasised, the extended decision making process was not commonly followed, although it was more frequently found in relation to one-off acts/purchases. In relation to recycling, it will be seen throughout this chapter that household members rarely sought information from external sources prior to the final decision to initiate recycling. In some cases, the point at which information about recycling was passively acquired (information search) also represented recognition of the need to recycle (need recognition). In other cases, knowledge for

action was retrieved from memory and was sourced prior to need recognition within the present household.

The original framework characterised need recognition and information search as autonomic (one individual has dominant influence in a specialised role) through to syncratic (multiple individuals have equal influence in a shared role). The term 'syncratic' has been refined to 'syncratic (communal)' and 'syncratic (non-communal)' to reflect that when all household members were responsible for these stages this was not necessarily in a collective manner. The original framework characterised the final decision as individual (made by an individual independently of other household members), autonomic (made by an individual but with the preferences of other household members taken into account), or syncratic (made by multiple household members together); furthermore, an individual decision was regarded as bypassing the active information search stage (and thus represented a habitual or spontaneous decision), whereas autonomic and syncratic decisions were regarded as following the extended decision making process (Kirchler et al., 2001). The term 'individual' has been refined to 'individual (lone)' and 'individual (multiple)' to indicate the number of household members which made such a decision. The term 'syncratic' has been refined to 'syncratic (household as enactor/maintainer)' and 'syncratic (leader as enactor/maintainer)' to reflect the outcome of the joint decision in terms of how the EA was to be practiced. Given that the extended decision making process was generally not followed as discussed above, Kirchler et al.'s (2001) terminology has been employed without reference to the extent to which the extended decision making process was followed. However, individual decisions were often associated with the continuation of existing normal behaviour (repetitive EA practice) in a new household and thus were often habitual in nature.

Where the household was the driver of EA adoption, the need recognition and information search stages of the decision making process were syncratic (communal) meaning that all household members were responsible for these stages in a collective manner. The final decision was syncratic (household as enactor/maintainer) meaning that all household members collectively took a decision that the EA was to be practiced by the household. As such, the decision making process culminated in the presence of a household theme (i.e. similar relative interest and collective recognition that the EA was a shared goal), and it was within this context that all household members physically initiated repetitive EAs.

Where a non-influential leader or an influential leader was the driver of EA adoption, if it was not for the actions of the leader then the EA would not be evident in the household. This was because the leader acted in the context of the absence of a household theme whereby relative interest was dissimilar with the leader exhibiting greater (and generally high) relative interest and others exhibiting lesser (and low) relative interest. Individuals with low relative interest were not prepared to 'make the EA happen' in their household and three positions were evident. Firstly, some individuals held a negative perception of the EA which generally related to logistical factors such as convenience (particularly in relation to recycling) and sometimes also involved questioning the rationale of the EA (more the case with wider EAs). This position was a conscious one in the sense that the prospect of EA participation was at least 'on the radar' of these individuals, although this is not to say that they had given the issue serious consideration. Secondly, some individuals had not considered the prospect of EA participation. Non-participation in repetitive EAs, particularly recycling and repeated acts, represented routine and habitual behaviour which was perceived as entirely normal (Shove, 2003b; 2006). Such practices had not been challenged until EA adoption and in some cases similar negative perceptions of the EA were evident. However, individuals were generally not strongly 'anti' the EA in either of these two scenarios. Thirdly, the low relative interest of some individuals was rooted entirely in a lack of knowledge for action. For example, low relative interest in switching to green electricity was often rooted in a lack of awareness that this EA was even possible and the associated logistics of switching. Once individuals were aware of these issues, their relative interest was high. This position was more common in relation to wider EAs.

Where a non-influential leader was the driver of EA adoption, the leader was the dominant influence across the decision making process; the need recognition and information search stages were autonomic and the final decision was individual (lone), autonomic or syncratic (leader as enactor/maintainer). The latter scenario of all household members collectively making a decision that the EA was to be practiced by the leader was a rare occurrence, most notable in relation to one-off acts/purchases and non-existent in relation to repeated acts. Repetitive EAs were physically initiated by the leader in the context of the absence of a household theme.

Where an influential leader was the driver of EA adoption, the need recognition stage was again autonomic. In most cases the information search stage was also autonomic. However, with respect to one-off acts/purchases only, in some instances information search was syncratic (collective). Here, all household members were communally

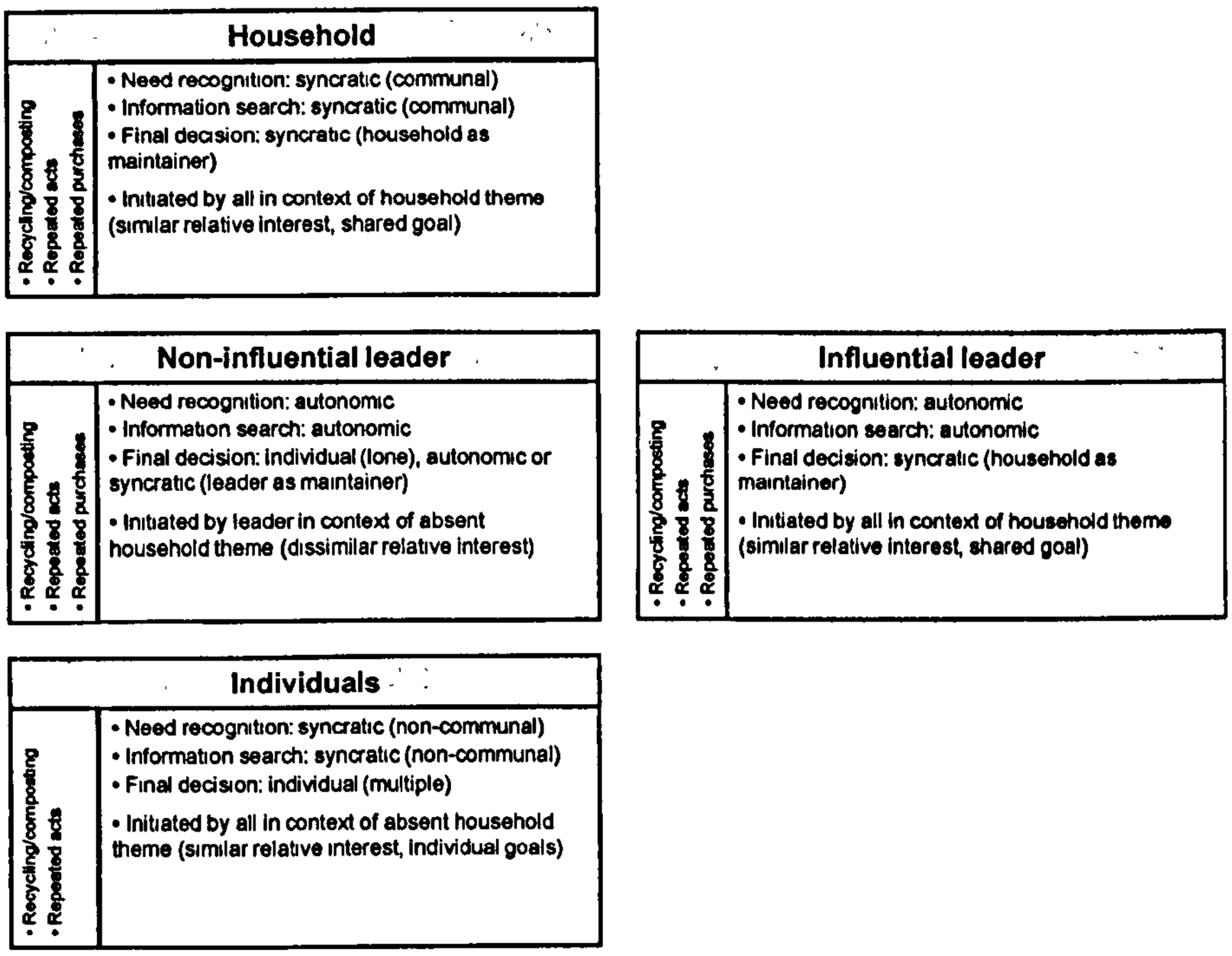
responsible for seeking information from external sources which ties in with the more frequent employment of the extended decision making process in relation to one-off acts/purchases. Due to the leader advocating the EA to other household members, the final decision was syncratic (household as enactor/maintainer). This was associated with the conversion of the absence of a household theme into a household theme, i.e. conversion of dissimilar relative interest into similar relative interest and collective recognition that EA participation was a shared goal. Repetitive EAs were physically initiated by all household members within this context. Therefore, an influential leader as the driver of repetitive EA adoption represents socialisation influence from a leader to other household members with respect to relative interest and behaviour, while an influential leader as the driver of one-off act/purchase adoption represents socialisation influence with respect to relative interest only.

Where EA adoption was driven by individuals, the need recognition and information search stages of the decision making process were syncratic (non-communal) meaning that all household members were responsible for these stages but as multiple individuals rather than in a collective manner. Each household member made an individual final decision, meaning the final decision was individual (multiple). This was followed by the physical initiation of the EA by all household members in the context of the absence of a household theme whereby relative interest was similar but household members saw EA participation as an individual goal.

Figure 10. Characteristics of the drivers of environmental action adoption.

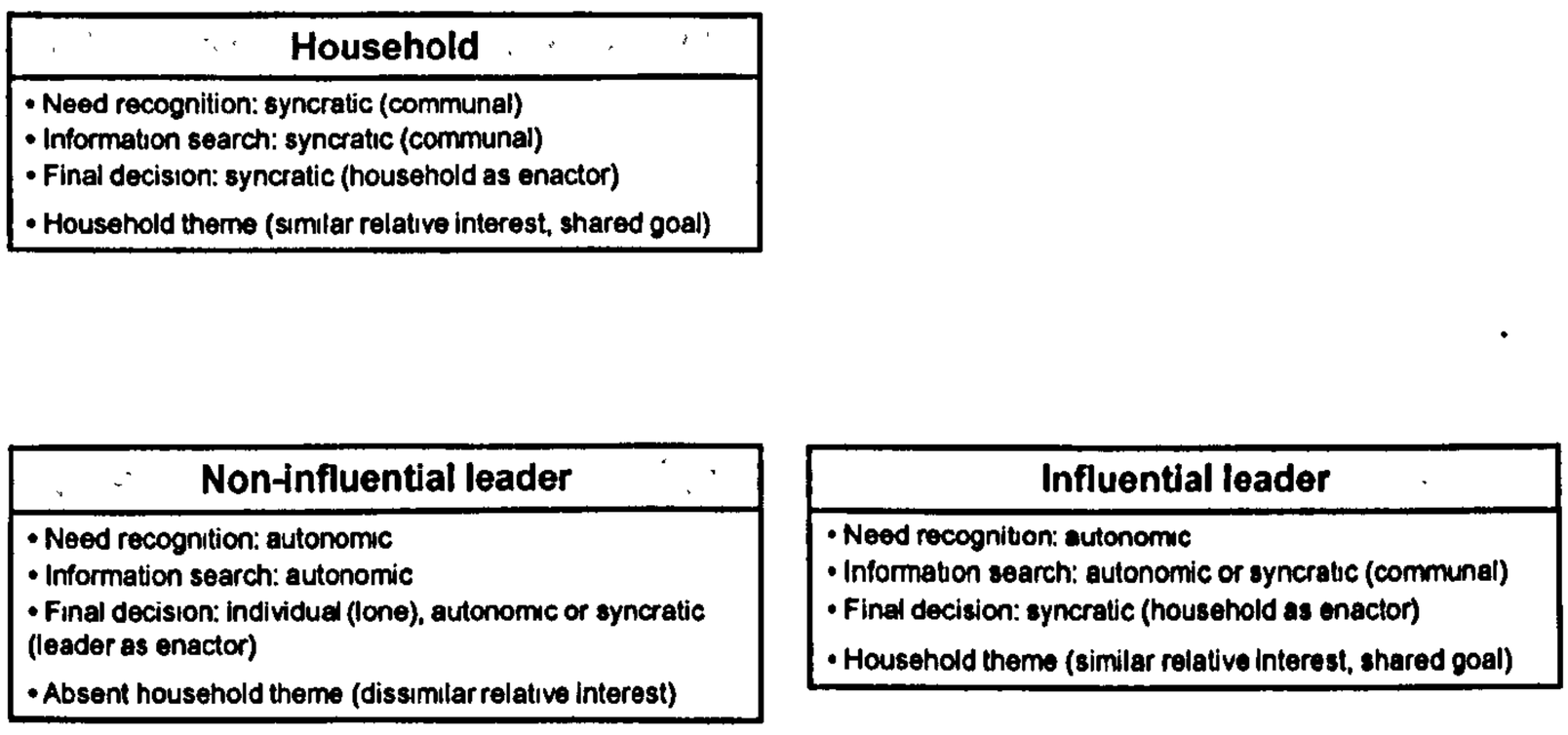
(a) Repetitive environmental actions

The vertical box indicates the relevance of the driver to the three activity types. Green represents socialisation influence from the leader to other household members with respect to relative interest and behaviour.



(b) One-off acts/purchases

Red represents socialisation influence from the leader to other household members with respect to relative interest only.



The driver of EA practice change is the unit which was ultimately responsible for the change to repetitive EA practice. With respect to recycling/composting, such change was to the maintainer, recycling repertoire and self-organisation and three drivers were evident – household, leader and individuals. With respect to repeated acts and repeated purchases, such change was to the maintainer and two drivers were evident – leader and individuals.

The household as the driver of EA practice change was evident only in relation to the recycling repertoire. This event was usually attributable to one household member in the sense that knowledge for action was acquired by this individual. However, given the presence of a household theme and the high likelihood that another household member could have acquired the knowledge for action with the same end result, the 'household' was still the driver of recycling repertoire change.

Individuals as the driver of EA practice change was evident only in relation to the maintainer of recycling and repeated acts. Here, individuals maintaining the EA also acted as the driver of maintainer change. Hence, individuals as the maintainer evolved into the household (collective form) as the maintainer.

A leader as the driver of EA practice change was evident in relation to all three repetitive activity types and the three aspects of recycling practice. If it was not for the actions of the leader then change to EA practice would not have taken place. This was usually because the leader acted in the context of the absence of a household theme involving dissimilar relative interest. However, with respect to recycling, in some instances this was because the leader acted in the context of dissimilar self-organisation.

Thus far in the presentation of the research findings, socialisation influence from a leader to other household members with respect to behaviour only, relative interest and behaviour, and relative interest only have been highlighted. As also seen thus far, such socialisation influence was associated with EA adoption and the EA maintainer, and as will also be seen in the following section, change to EA practice. There were four main means of socialisation influence – advocation, verbal prompting, physical prompting, and continued practice. Discussion of these means of socialisation influence raises the issue of whether or not the leader's actions were an intentional effort to change the relative interest and behaviour of others. This first requires discussion of the concepts of consensus requirement and behaviour focus.

Consensus requirement was an issue of specific relevance to the decision making process leading to repetitive EA initiation or one-off act/purchase practice. Consensus requirement refers to the perceived need for agreement around EA adoption *and* practice, or EA adoption alone. For leaders who perceived EA adoption and practice as requiring consensus, which was evident only in relation to recycling/composting, agreement that household members would share responsibility for EA practice was a prerequisite to EA adoption. Influential leaders as the driver of recycling adoption exhibited this position. For leaders who perceived EA adoption as requiring consensus, agreement that other household members had no objection to the leader practicing the EA was a prerequisite to EA adoption. Influential leaders as the driver of wider EA adoption exhibited this position, along with non-influential leaders who sought a syncratic position (across activity types). All such leaders advocated the EA to other household members as an integral part of the decision making process, which represented an intentional attempt to change other household members' relative interest and behaviour to a greater or lesser extent. Influential leaders were successful in their efforts, while non-influential leaders who sought a syncratic decision were not. However, this was not problematic as such non-influential leaders were willing to practice the EA independently. For individuals who did not perceive an EA as requiring consensus, whether or not other household members objected to the EA or were likely to share responsibility for EA practice was largely irrelevant in relation to EA adoption. Non-influential leaders (who made an individual or autonomic decision) as the driver of EA adoption exhibited this position, along with household members representing individuals as the driver of EA adoption.

A range of factors underpinned the position of individuals with respect to consensus requirement – decision script availability, financial commitment, household member impact, sex role orientation, and the domestic division of labour – and multiple factors were often at play. A lack of consensus requirement was not a case of 'casting aside' other household members' preferences. Indeed, in most cases, individuals simply had not particularly contemplated how other household members felt about the EA. This was typically the case whereby EA adoption represented the continuation of existing normal behaviour in a new household, which generally involved recycling and repeated acts. However, although there were a few exceptions, this was also the case with repeated act adoption in general. Although some leaders who were new to recycling also exhibited this position, some such leaders perceived recycling as requiring consensus. Thus, there are tentative indications that perceiving recycling as requiring consensus was associated with inexperience of recycling. This pattern can be aligned with the concept of decision script availability (Kirchler et al., 2001), with cognitive

scripts being available for EAs that individuals had experience of and 'simpler' EAs, meaning that the lack of consensus requirement was an un-contemplated position.

Where couples lay on the continuum from traditional to modern sex role orientation also had a bearing on the position of individuals with respect to consensus requirement. A modern sex role orientation whereby democratic decision making was highly valued and the norm (Qualls, 1987) was associated with consensus requirement. The perceived degree to which the EA involved the commitment of shared financial resources was also influential (Kirchler et al., 2001). Relatively high financial commitment, which was often a feature of one-off acts/purchases in particular, was associated with consensus requirement, while no/relatively low financial commitment was associated with a lack of consensus requirement. The perceived extent to which the EA impacted on other household members also operated along similar lines (Kirchler et al., 2001). No/relatively low household member impact was associated with a lack of consensus requirement, while relatively high household member impact was associated with consensus requirement. However, instances of the latter, considerate approach (e.g. concerns that other household members may be uncomfortable in a 'colder' environment with respect to reducing the temperature of the home environment) were particularly rare. Financial commitment and household member impact are illustrated by household 24 (family) who were asked about the differences in the decision making processes relating to the adoption of the repeated acts (including buying organic food) and the one-off acts/purchases (including plans to buy a new car running on liquid petroleum gas (LPG)):

> SALLY
> *I mean…with the first lot [repeated purchases]…I would just go and do it, unless it was something that was gonna really seriously impact on [everyone else]…I think my attitude would be if Raj then went and bought his own non-organic potatoes or whatever cos he doesn't like the ones I've got that's fine, but because I do most of the shopping they get what I buy…but with any of the [one-off acts/purchases] they're decisions we would make jointly and in the main you would make the decision we've got the money |to buy something and it would be me then saying well can we have it LPG…so I think the bigger purchases there's that kind of implication where we've got to decide [together].*
>
> RAJ
> |*Yeah cos I do the finance*

This illustration also highlights the bearing of the domestic division of labour on the position of individuals with respect to consensus requirement. As will be discussed in the following chapter, the domestic division of labour was a factor underpinning the distribution of involvement in wider EA practice; as with recycling, the domestic division of labour was relevant at the level of responsibility for the specific domestic tasks which

encompassed wider EAs, e.g. responsibility for shopping for everyday goods and repeated purchase practice (p.169-70). Given that Sally was responsible for shopping for everyday goods, and therefore would be responsible for repeated purchase practice, repeated purchases were not perceived as requiring consensus. Conversely, in the rare instances whereby recycling adoption *and* practice was perceived as requiring consensus, the domestic division of labour was particularly equitable with all household tasks being shared activities and thus recycling was seen in the same light. Leaders also perceived an EA as requiring consensus when they were 'unable' to practice the EA due to the domestic division of labour. However, leaders generally drove the adoption of EAs that they then went on to practice themselves. Indeed, instances of a leader driving the adoption of an EA outside their domain of household responsibility were rare.

Finally, it is worth noting that some non-influential leaders felt that their partner would be supportive of them practicing the EA (typically a one-off act/purchase) and therefore a consensus had already been established, although such instances were rare. This scenario does not represent an EA household theme as dissimilar relative interest was still evident. Although the non-influential leader accurately judged that their partner would not object, the partner remained unlikely to practice the EA themselves.

Behaviour focus was an issue of relevance to repetitive EAs including their initiation, the maintainer and change to EA practice. Behaviour focus relates to whether or not an individual actively preferred other household members to practice the EA in question. Individuals with a household-focussed perspective wanted other household members to practice the EA and as such, intentionally attempted to change other household members' relative interest and behaviour. This was generally rooted in a desire to maximise the impact of the EA in terms of the leader's motives for participating in the EA. For example, a household-focussed perspective on recycling was rooted in a desire to maximise the waste reduction and/or environmental benefits of recycling depending on the leader's motives. A household-focussed perspective was generally associated with high relative interest. Leaders who exhibited very high relative interest often appeared to want to 'spread the message'. For example, in household 18 (sibling sharers), Pierre would pass comment if he noticed that Henri had left lights on in unused rooms, as Pierre explained:

> *When you think that something is good for you, you want to share it and that I think is the main idea behind this way of acting.*

In contrast, for individuals with a self-focussed perspective on an EA, how other household members behaved was not an issue of active concern, simply because it was not on their agenda rather than being a consciously thought through stance. Thus, such leaders did not intentionally set out to influence the relative interest and behaviour of other household members. A self-focussed perspective was generally associated with relative interest towards the lower end of the spectrum.

Returning to the four means of socialisation influence from a leader to other household members, advocation and verbal prompting represent verbal means of socialisation influence. Advocation refers to a leader promoting particular EA participation to other household members in terms of their personal motives, e.g. articulating the environmental reasons for recycling. As noted above, advocation was employed by influential leaders and non-influential leaders who sought a syncratic decision due to their perception of the EA as requiring consensus, and was integral to the decision making process. In some instances, other non-influential leaders also advocated repetitive EAs to other household members in an ongoing manner due to a household-focussed perspective. Verbal prompting refers to a leader asking or instructing other household members to practice an EA. Verbal prompting was evident only in relation to recycling and repeated acts and employed due to a household-focussed perspective. Advocation and verbal prompting represented intentional efforts by the leader to change the relative interest and behaviour of other household members. However, such efforts were not always successful.

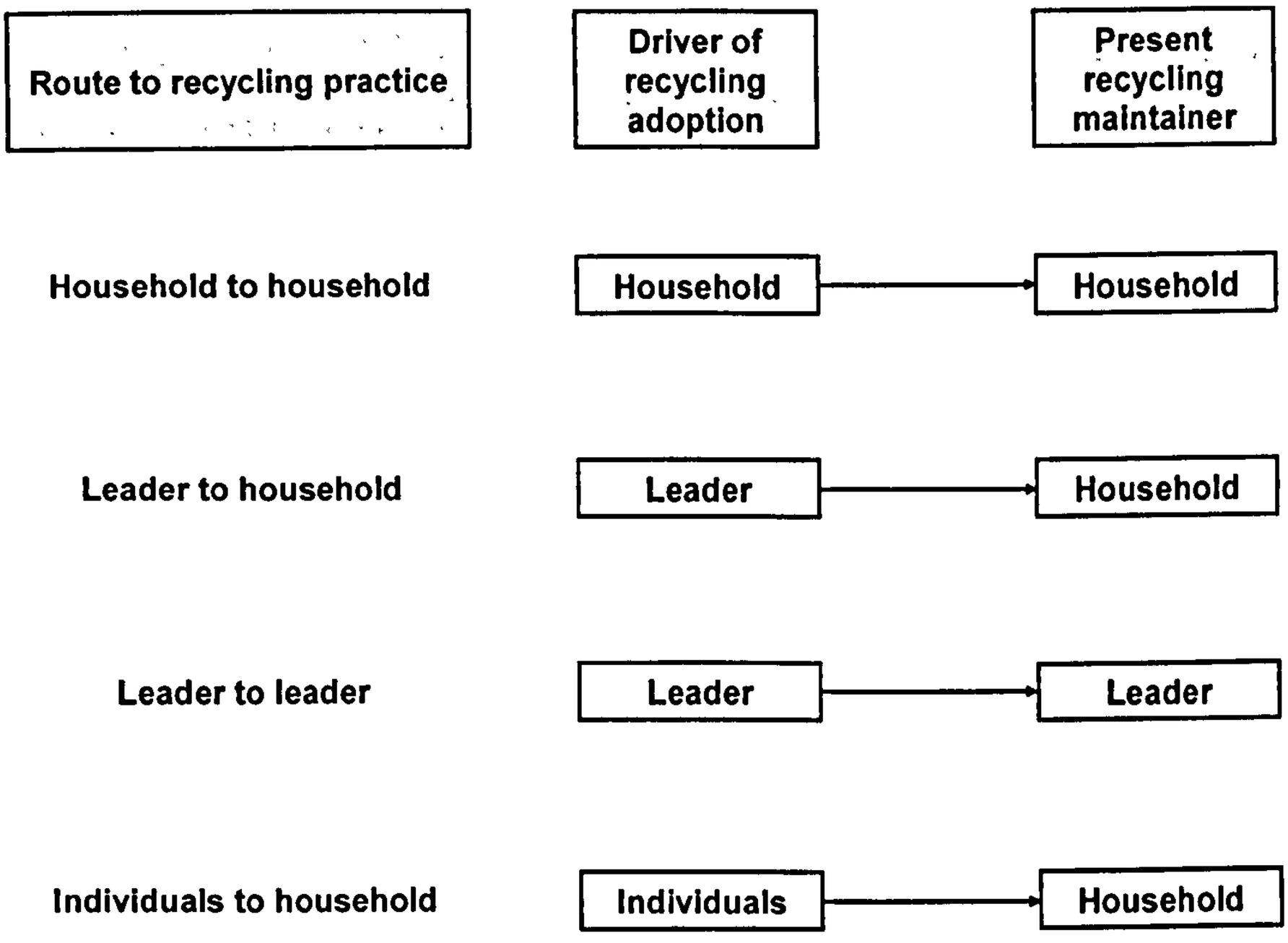
Physical prompting and continued practice represent physical means of socialisation influence. Physical prompting refers to storage points put in place by a leader acting as a visual reminder to recycle and making separation and storage a comparable option to binning recyclables in terms of effort, coupled with the leader taking responsibility for the removal of recyclables which allowed for their ongoing separation and storage. Continued practice refers to the continued practice of a repetitive EA by a leader. For leaders with a self-focussed perspective on the EA, physical prompting and continued practice were unintentional means of socialisation influence. This was also the case for most leaders with a household-focussed perspective on the EA. Particularly in relation to recycling, most leaders did not recognise high self-organisation as a means of changing other household members' behaviour, meaning that physical prompting was generally a side-effect of the leader's actions. Most leaders perceived advocation and verbal prompting to be the main tools of influence at their disposal. However, in limited instances, physical prompting and continued

practice did in part represent an intentional attempt to change the relative interest and behaviour of others.

Routes to recycling practice

The original framework regarded Oates and McDonald's (2006) identification of different combinations of recycling initiator and sustainer as different routes to recycling practice. Empirically however, given that the present maintainer frequently developed gradually rather than in one step, just examining the combination of the driver of recycling adoption and the present maintainer was insufficient. Consequently, the concept of the route to recycling practice has been recast to represent the driver of recycling adoption followed through time to the present maintainer, thereby involving the initial maintainer. As such, multiple routes to recycling practice were identified. As a starting point, these routes can be grouped together into four broad routes to recycling practice (Figure 11) characterised by their driver of recycling adoption and present maintainer in general terms, i.e. focusing on the broad units of the household, a leader and individuals rather than the differentiated forms. Where a leader was the present maintainer, the leader was also the driver of recycling adoption. However, where the household was the present maintainer, there were three routes to recycling practice in which the driver of recycling adoption was the household, a leader, or individuals.

Figure 11. Routes to recycling practice.



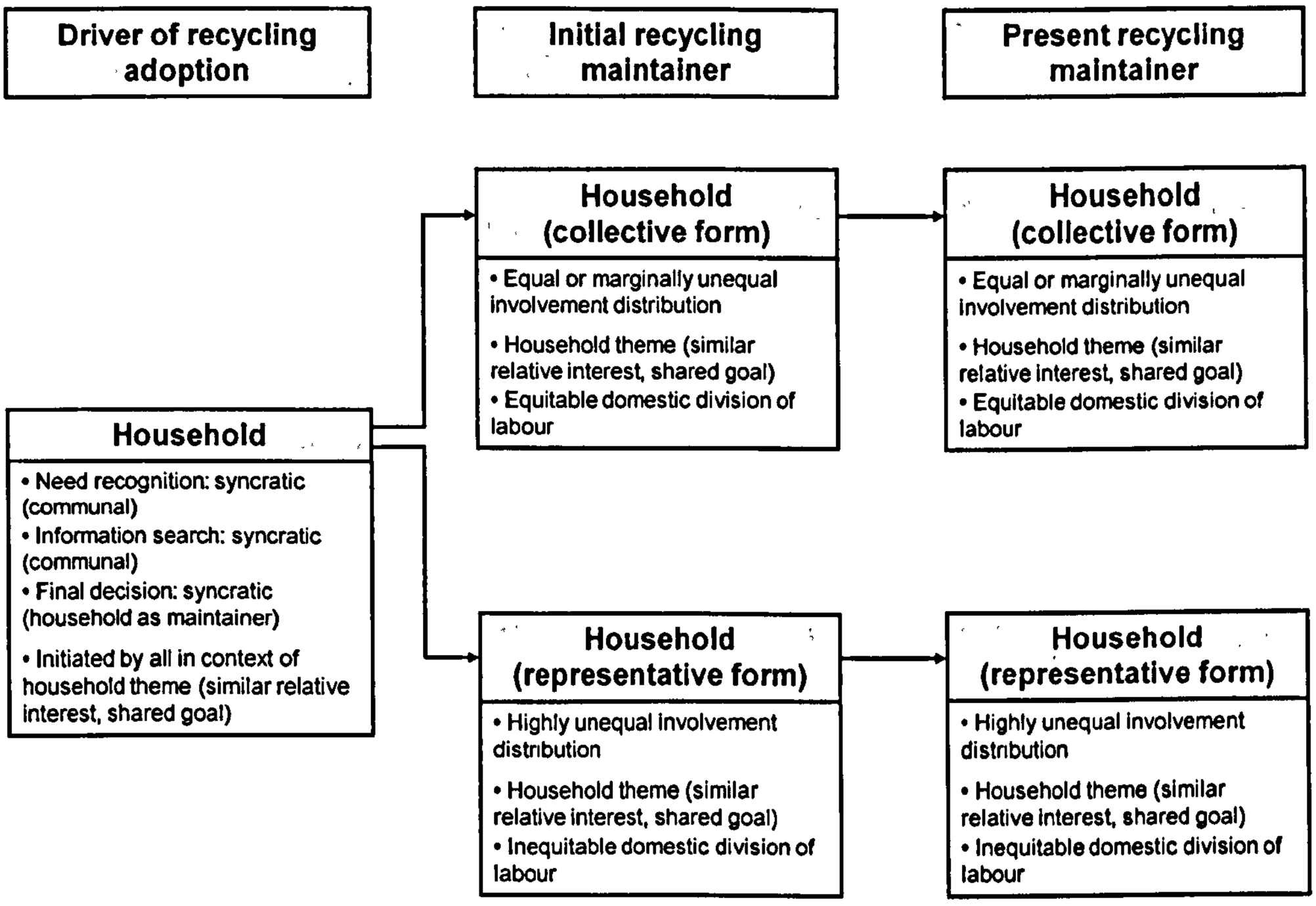
The leader to household and individuals to household routes to recycling practice were characterised by the gradual development of the present maintainer over a period of time. In the other routes to recycling practice, the initial maintainer did not substantially change over time. In contrast, the gradual development of the recycling repertoire was evident across the four routes to recycling practice. In the vast majority of households, development of the recycling repertoire followed the same pattern. When recycling was initiated only glass items and/or paper were recycled. Subsequently, at different times, further materials were added to the recycling repertoire and composting was initiated. As such, the recycling repertoire was expanded material by material at specific points. Two constituent patterns were evident. The availability of recycling facilities was either the main determinant of recycling repertoire development ('facilities dependent'), or the availability of facilities was one of a number of factors influencing recycling repertoire development ('multi-factor dependent'). The gradual development of self-organisation was also evident across the four routes to recycling practice. In some households, self-organisation changed from low to high (i.e. from informal to formal storage points) in a stepped manner whereby self-organisation increased at specific points. In other households, low or high self-organisation did not substantially change from recycling initiation.

In the following four sections, each route to recycling practice will be explored in detail. In addition to the pattern(s) of recycling adoption and the maintenance of recycling which defines each route, there are a number of patterns which span the four routes to recycling practice relating to the development of the recycling repertoire and self-organisation (as highlighted above), communication within the household about recycling, and from where and how knowledge for action was sourced and transmitted through the household. However, such patterns were often most prominent and/or more easily examined in relation to particular routes. Therefore, these cross-cutting patterns are examined as the discussion of each route progresses, although it will be made clear whether a pattern was route-specific or cross-cutting. However, at this point it is pertinent to raise one cross-cutting pattern. Just as the maintainer was not intrinsically indicative of the household's recycling repertoire, neither was the route to recycling practice. Rather, self-organisation was indicative of recycling repertoire. This issue will be explored further later (p.162).

Household to household route to recycling practice

In the household to household route to recycling practice (Figure 12), the household was the driver of recycling adoption. In most instances the household (collective form) was the initial maintainer and this remained unchanged over time. This parallels households with a joint initiator and joint sustainer of recycling (Oates and McDonald, 2006). In limited instances the household (representative form) was the initial maintainer and this remained unchanged over time. This parallels households with a joint initiator and single sustainer of recycling (Oates and McDonald, 2006). Change to recycling practice was generally restricted to recycling repertoire development and such changes were also driven by the household.

Figure 12. Household to household route to recycling practice.



Within the household to household route to recycling practice, two constituent patterns were evident with respect to what prompted recycling adoption – 'common position' and 'change agent'. The common position pattern (which was predominant) was associated with high self-organisation from recycling initiation, higher level recycling and the facilities dependent pattern of recycling repertoire development, and a particular pattern of communication about recycling in the household. Recycling adoption was associated with household formation. Household formation represented similar individuals 'coming together'. Household members were similar in the sense that they had experience of recycling and/or an inclination towards recycling either for environmental reasons or because they were waste averse. This experience and inclination was frequently attributed to household members' upbringing, similarly identified by Hallin (1995), Maiteny (2002) and Mårtensson and Pettersson (2003). Household formation was often partly attributed to these similarities. A household theme was evident from household formation, generally involving very high relative interest which represented a desire to recycle as much waste as possible. As such, all household members initially recognised the need to recycle in a collective manner and brought similar levels of knowledge for action to the decision making process. While the final decision was regarded as syncratic which recognised that recycling was to be

maintained by the household, household members could not recall *explicitly* making such a decision. Indeed, there appeared to be little discussion about recycling around this time although household members acknowledged they must have talked about these issues prior to household formation for a household theme to be evident. Rather, there was an implicit assumption that recycling was to be a household activity.

This pattern is illustrated by household 9 (couple). Before moving into their present home, Phil and Jane had lived and worked together in developing countries for a number of years. During this time they were forced to think about waste production, disposal and reuse due to a lack of waste disposal infrastructure and the surrounding poverty, as Phil explained:

> *I suppose my feelings...certainly by the time we moved here...it's already [been] six or seven years of knowing each other...but even before that...the reason why [we got together] in a sense was probably because we were quite alike ((JANE MAKES SOUND OF AGREEMENT)) in our attitudes towards that kind of thing anyway. So it was never an issue at all about what we should do, and because we had that time of living in these strange places where we were in some ways forced to think about things like that, by the time we get back to Sheffield it's just...part of life. You think about your waste...and do something about it.*

In the vast majority of households across the four routes to recycling practice, discussion about whether or not to recycle in the household and an explicit syncratic decision were not apparent. The construction of the unspoken nature of decision making may be a consequence of difficultly in recalling the detail of recycling adoption, which all households suffered from to a greater or lesser extent. However, this lack of communication was evident regardless of the time elapsed since recycling adoption. Thus, it appears that the principle of recycling was generally not an issue which was recognised as a point of discussion. With respect to the common position pattern, it can be argued that the existence of a household theme from the outset negated the need to discuss the principle of recycling and make an explicit syncratic decision. However, an explanation which has wider applicability to experienced recyclers across the different routes to recycling practice is that once recycling was embedded in everyday life it became a compulsory activity, thus making discussion of whether or not to partake in this EA immaterial. In other words, recycling was perceived as a domestic activity which has to be done alongside the washing up, laundry, etc.

There were very few examples of households discussing how to go about recycling across the four routes to recycling practice. Thus, in a similar manner as the principle of recycling, how to organise recycling was generally not an issue which was recognised as a point of discussion. Households that had discussed how to go about

recycling tended to follow the common position pattern and exhibit very high relative interest. Such discussion tended to focus on the storage of recyclables before formal storage points were put in place. In other households which followed this pattern, one individual simply put in place the storage points as the more organised household member. However, in both instances there was an appreciation that using formal storage points made recycling easier, as illustrated by Phil from household 9 (couple):

> *...We didn't want stuff just kind of piling up so we deliberately [set up] a space...next to the fridge and we bought some boxes deliberately for that...[so it] was a conscious thing to have a recycling bit in the utility room.*

Appreciation of the value of high self-organisation stemmed from high relative interest coupled with either an inherent recognition or more commonly previous experience of recycling. Some leaders in households which followed the leader to household and leader to leader routes to recycling practice also exhibited this pattern in relation to high self-organisation.

Within the common position pattern of the household to household route to recycling practice, the only aspect of recycling practice to develop gradually was the recycling repertoire. Recycling repertoire development followed the facilities dependent pattern. Household members demonstrated a sophisticated understanding of recycling with respect to which materials could be recycled and where, and which items should and should not be deposited and why. Such knowledge for action was cumulatively acquired from a range of information sources which will be outlined shortly. Household members also expressed a sophisticated raft of motives for participating in recycling and composting, which often reflected their upbringing and knowledge for action. Thus, both environmental reasons and waste aversion were evident in relation to recycling and composting although with the latter EA, gardening benefits were similarly important. The behaviour of household members with respect to materials and items within material types was typically homogeneous which is linked to the particular pattern of communication about recycling associated with the common position pattern. These intertwined issues will now be illustrated. While the homogeneity of behaviour and the pattern of communication about recycling were unique to the common position pattern, the other issues were also relevant to some leaders in households which followed the leader to household and leader to leader routes to recycling practice.

Typically, the initial recycling repertoire was limited to glass items and/or paper in line with only these facilities being available at the time of recycling initiation – recycling was a longstanding EA in most such households. Recollections of how and from

where knowledge for action was acquired in relation to recycling adoption were rather 'fuzzy'. However, previous experience of recycling often provided 'baseline knowledge' about the types of bring banks which were likely to be available. In the majority of households, individuals had read literature about recycling and EAs and at some point had actively sought information from the local authority or similar about the availability of facilities or an aspect of recycling they wanted clarification of. However, it is important to note that the active seeking of information generally occurred after an interest in recycling had developed or recycling had been established, and was typically a one-off event. In other words, the active pursuit of knowledge for action did not precede recycling initiation and it was not a regular activity.

The arrival of new recycling facilities removed the constraints on the recycling repertoire. Knowledge for action was acquired in a passive manner, but household members were positioned to come across this information. New bring bank facilities (e.g. for plastics) were simply noticed while using the existing banks, and knowledge about how to use them appropriately was gained by reading the bank instructions. There appeared to be a very short time lag between the arrival of new facilities and households noticing them. In the same vein, households were alerted to the imminent arrival of their blue bin by the leaflet which came through their door outlining the service. The scheme literature was the source of knowledge for action regarding what should and should not be put in the blue bin. Where this pattern was followed in households which followed the leader to household or leader to leader routes to recycling practice, the leader was the general conduit of information. The acquisition of knowledge for action regarding bring bank availability by simply seeing such facilities (Ball and Lawson, 1990; Belton et al., 1994; McDonald and Ball, 1998) was evident in households across the four routes to recycling practice.

Some households which exhibited the common position pattern mixed with like-minded people. These social networks also acted as an important source of information about new facilities and in particular, appropriate practices. Where households had learnt that food cans could actually be deposited in the banks for food/drink cans and plastics (which inaccurately stated otherwise), this was often through their social networks, as illustrated by household 9 (couple):

JANE
We used to recycle aluminium cans only.

PHIL
Yes that's right isn't it...because we heard that the steel got picked out of the

JANE

The furnace

PHIL
...The incinerator stream and then we recently heard...that isn't the case and that also the recycling banks have started taking food cans as well so we've started recycling them as well.

ME
Can you think where you got that information from?

JANE
I think we got that information from Miranda Hawksley who |is a local person [active in the community recycling field]...No if we have any questions about what you can and can't recycle I'd always go to Miranda as a |first port of contact.

PHIL
|Ah okay
|Yeah

PHIL
There's definitely kind of a link of like-minded people around isn't there, which is an important way of sharing information.

New information which happened to be gathered by one individual (rather than one individual being the general conduit of information) was typically reported back to other household members, which was closely followed by the incorporation of the new material into the recycling system. This was in keeping with recycling being a normal topic of conversation, which was associated with a household theme involving very high relative interest (as such, recycling was not a normal topic of conversation in the vast majority of households). However, in some households new information was only passed on when prompted, i.e. when other household members asked questions or the individual witnessed the binning of recyclables. Although information was not automatically passed on it was not deliberately withheld.

The change agent pattern, which was less common, was not associated with particular patterns relating to recycling repertoire development and self-organisation development. The establishment of a household theme and recycling initiation were far removed from household formation. Household members were collectively exposed to a change agent, namely the provision of a kerbside collection service. This increased the relative interest of household members as recycling was now perceived as convenient. In the same vein, kerbside collections were the only reason why many people recycled in Brook Lyndhurst's (2004b) study. All household members initially recognised the need to recycle in a collective manner and were equipped with similar levels of knowledge for action, prompted by the arrival of the service. The final decision was syncratic which again recognised that recycling was to be maintained by the household, but in comparison to the previous pattern, such joint decision making was more explicit in nature. It was also through such communication that the

household theme was established although such discussion was not particularly elaborate, as illustrated by Debbie from household 12 (family):

> *...The blue box came to us and we both thought that's a good idea...*

Household 19 (couple) also exhibited the change agent pattern. Darren and Hayley had no previous experience of domestic paper/card recycling before the arrival of their blue bin and therefore provide an example of a household 'learning how to recycle'. In a number of households across the four routes to recycling practice, knowledge for action was based on an individual's personal assumptions about the recyclability of items rather than external information. This is well illustrated by household 19:

> DARREN
> *With the blue bin, the first few weeks we'd be "shall we put this in?", "do we put that in?".*
>
> HAYLEY
> *Yeah*
>
> DARREN
> *Until we...got into the routine of knowing what you can and can't put in. (LONG PAUSE) But that all gelled fairly quickly...*
>
> ME
> *In those early stages of the blue bin how did you actually make those decisions about what you could put in?*
>
> DARREN
> *So really just from discussing it between ourselves and...if it wasn't obviously paper or cardboard which you recycle we'd then rip it open and find out if you could, if it was paper-based or card-based...you know to put in or not...like the cardboard-based milk cartons that have got plastic moulded on top, if you hadn't cut that open to find out if it was waxed paper you would have assumed [you couldn't recycle it]. I even do that as well, because I know now from experimenting and ripping it open...that I can recycle them but you have to cut the plastic top off it.*

It should be noted that Tetra Pak-type cartons were specifically cited as a contaminant on the scheme literature which Darren and Hayley referred to receiving and looking at. There were examples of individuals not picking up on 'obvious' information in a number of households across the four routes to recycling practice. This issue will be returned to later (p.160-1).

Leader to household route to recycling practice

In the leader to household route to recycling practice (Figure 13), a leader was the driver of recycling adoption and the household was the present maintainer. Although consisting of varied constituent routes, in broad terms this route parallels households with a single initiator and joint sustainer of recycling (Oates and McDonald, 2006).

Predominantly, recycling adoption was driven by a non-influential leader. Recycling initiation was accompanied by the organisation of storage points (thus allowing for physical prompting), advocation and verbal prompting. Discussion about whether or not to recycle in the household was not particularly apparent. The leaders did not perceive recycling as requiring consensus. Some leaders had not contemplated how other household members felt about recycling. These leaders tended to be already engaged in recycling which links in the earlier point that once recycling was embedded in everyday life it became a compulsory activity. Some leaders' perception of recycling as not requiring consensus was a more conscious position. In either case, most leaders held a household-focussed perspective on recycling, hence their use of advocation and verbal prompting and in some cases also physical prompting.

In some cases, a leader (narrowly influential form) was the initial maintainer. While the relative interest of other household members was low, they nonetheless began to separate and store recyclables to some extent mainly due to physical prompting and verbal prompting. As such, this represented a socialisation influence from the leader to other household members with respect to behaviour only. As a result of physical prompting and advocation, the leader (narrowly influential form) evolved into either the household (collective form) or the household (representative form) as the present maintainer. The transition to the household (collective form) as the maintainer represented socialisation influence with respect to relative interest and behaviour; as such, facilitated recyclers increased their physical contribution to keeping recycling going. The transition to the household (representative form) as the maintainer represented socialisation influence with respect to relative interest only; facilitated recyclers did not increase their physical contribution to keeping recycling going largely because the leader was responsible for the specific domestic tasks which encompassed recycling tasks.

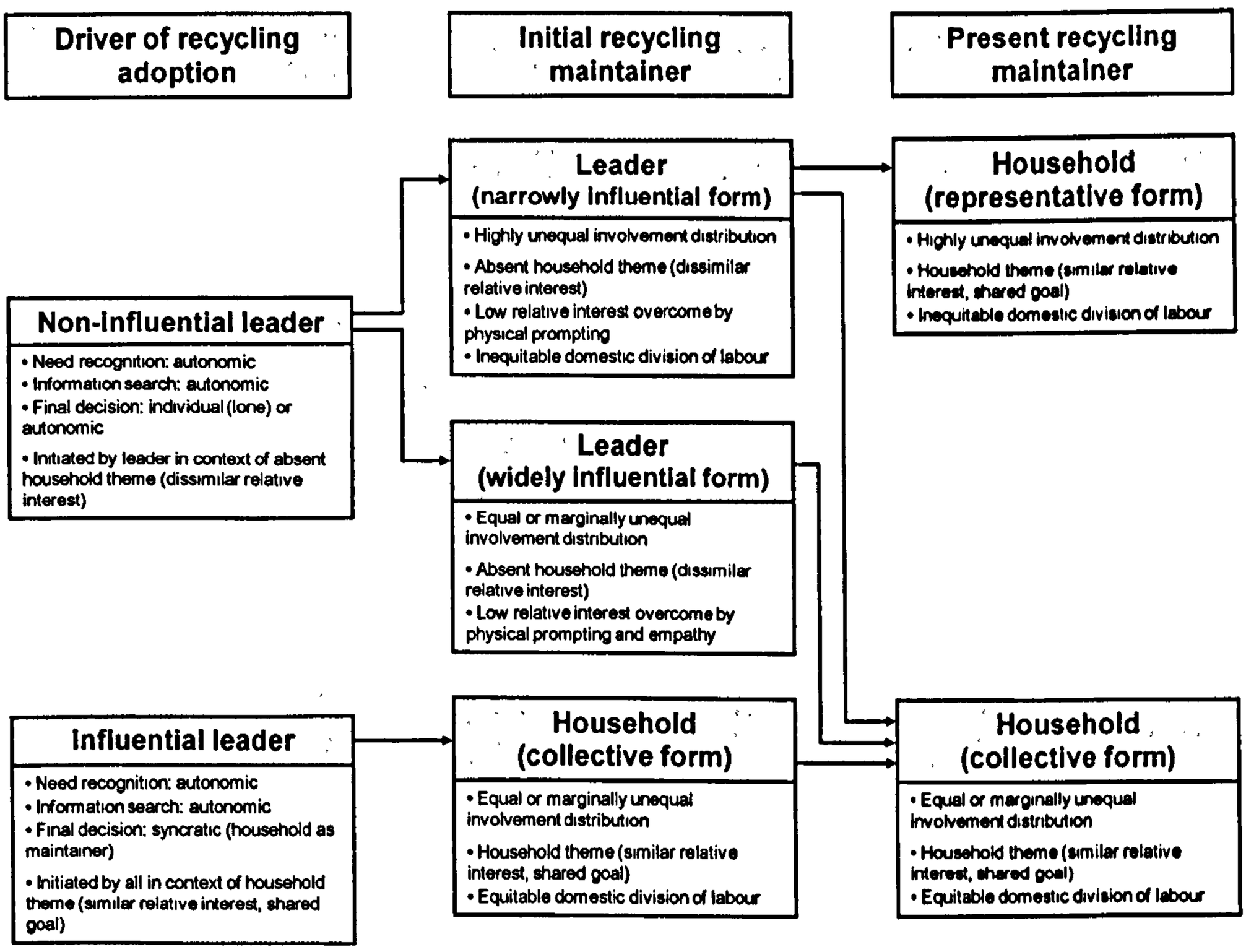
In some cases, a leader (widely influential form) was the initial maintainer. Here, advocation had a much more immediate effect on the behaviour of other household members. As such, household members were fully engaged in the recycling process due to physical prompting and high empathy towards the leader. This evolved into the household (collective form) as the present maintainer, a transition which represented socialisation influence with respect to relative interest; as such, facilitated recyclers' physical contribution to keeping recycling going was no longer explained by physical prompting and empathy.

Within these three patterns, change to the recycling repertoire and change to self-organisation where it was evident was generally driven by the leader. With respect to the expansion of the recycling repertoire, the leader verbally prompted other household members to separate and store the material at the time of introduction.

In rare instances, recycling adoption was driven by an influential leader. The household (collective form) was the initial maintainer and this remained unchanged over time. Influential leaders advocated recycling to other household members as an integral part of the decision making process due to their perception of recycling adoption and practice as requiring consensus. As such, there was some discussion about whether or not to recycle in the household.

Figure 13. Leader to household route to recycling practice.

Red represents socialisation influence from the leader to other household members with respect to relative interest only. Blue represents socialisation influence with respect to behaviour only. Green represents socialisation influence with respect to relative interest and behaviour.



With the leader to household route to recycling practice, and also the leader to leader route, there was a lack of uniformity in relation to what prompted recycling adoption.

Some leaders were similar to the individuals in households which followed the common position pattern of the household to household route to recycling practice, i.e. they had experience of recycling and/or an inclination towards recycling either for environmental reasons or because they were waste averse which was attributed to their upbringing. Some leaders had been prompted to adopt recycling in response to political and media attention to the environmental issues surrounding waste management (Mårtensson and Pettersson, 2003). This issue is illustrated by Esther from household 8 (couple):

> *It was when [recycling] became more (PAUSE) talked about as an ecology issue, I think that's what set me off probably...you get that mainly from...politics, just listening to things, reading things in papers, listening to things on the television and...I think that's how it slowly dawned on me...just because I was interested in the (PAUSE) ecology of it and all that, that if we keep putting it in landfill sites you know, we're polluting the world.*

However, more commonly, leaders discussed an intertwined mix of issues as influencing recycling adoption. As such, leaders referred to their motives for recycling (i.e. waste aversion and environmental reasons) and often highlighted a selection of other factors which commonly included contextual conditions (i.e. access to bring banks and kerbside collections) and logistical factors such as time and storage space. In one instance, a descriptive social norm (Cialdini et al., 1990) was highlighted as important – the realisation that 'everybody' was recycling. The notion of feeling settled and moving into a family home were sometimes mentioned (Brook Lyndhurst, 2004b). The associated household dynamics of recycling adoption was also a key element of households' discussions. An example is provided by household 7 (family). Recycling 'adoption' was driven by Barry, an influential leader (this actually represented the expansion of the recycling repertoire beyond glass items and paper, but from the household's perspective was when recycling 'really' started). Barry and Amanda had differing perspectives on why they expanded their recycling repertoire. Amanda felt the issue of time was paramount, specifically lack of time in relation to making the decision to expand the recycling repertoire and set up the system (Brook Lyndhurst, 2004b):

> AMANDA
> *...We may have discussed [expanding the recycling repertoire] but you were always very tired...very busy...and away from home and I had Christopher and was trying to work as well. By the time you started working from home we had a bit more time to think [about]...doing some of the things we actually wanted to do...I'm absolutely convinced the time is the biggest issue...*
>
> BARRY
> *What having the time to do it?*
>
> AMANDA
> *Having time to sit down, talk about it, get on with it, sort it out, and then do it. And once it's set up it's just a system like everything else.*

Barry felt that although he'd always wanted to recycle as he was waste averse, the main reason they expanded their recycling repertoire was that recycling had become more convenient due to increased space to store a wider range of recyclables (as they had extended their home) which tied into further recycling facilities becoming available. However, Amanda admitted that she had reservations about the time and effort associated with more comprehensive recycling. Implicit in Barry and Amanda's discussion was their perception of recycling adoption and practice as requiring consensus – agreement that they would share responsibility for recycling practice was a prerequisite to recycling adoption. While the issue of time, availability of facilities and storage space were important factors, Barry's vocal keenness for expanding the recycling repertoire was key to reaching the syncratic decision needed, as Amanda explained:

> *But there's also a support thing as well you see. I was keen on doing it but Barry got me more enthused by it by saying he really wanted to do it...And suddenly when he said he wanted to do it I said "well let's go with it and let's do it then" and he dragged me along with him, and not kicking and screaming either, I'm really pleased that we do it.*

The discussion will now consider the gradual development of the maintainer, the recycling repertoire and self-organisation within the leader to household route to recycling practice. The common and central issue in households which followed this route involving a non-influential leader as the driver of recycling adoption was the socialisation influence from the leader to other household members with respect to relative interest and behaviour. In the first instance, the relative interest of these household members was low – some such individuals held a negative perception of recycling while others had not considered the prospect of participating in recycling previously. However,. these individuals separated and stored recyclables to some extent due to physical prompting and verbal prompting which served to continually bring the binning of recyclables into their discursive consciousness. In some cases individuals made even more of a contribution towards keeping recycling going due to empathy towards the leader. Over time, the facilitated recyclers gradually came to perceive recycling as easy due to the system attributable to the leader. The facilitated recyclers became increasingly involved in recycling practice unless it wasn't required due to the domestic division of labour or they were already more involved due to empathy towards the leader. Because the leader also advocated recycling this primed other household members to pick up on external messages and relate them to their own attitudes and behaviour. This increased their relative interest to the extent that a household theme developed, as illustrated by George from household 14 (couple):

I think I've been introduced to the recycling more by my wife's influence. I'm one hundred per cent behind her now but at first I would not have given it serious thought...Esther's always talked about things like this and I've always listened and I've gone along with it, in some ways it's just easier to just join in but now I'm really sold to it...when you realise how easy it is, once the system's set up then you become more inclined to go along with it and obviously as I learnt the values of it all...picking up the messages that come over the television, wireless, the papers...it all makes sense...I'm definitely promoted into it now and I get more and more (PAUSE) thinking for myself about it than I did before.

The leader to household route to recycling practice, and also the leader to leader route, was not associated with a particular pattern of recycling repertoire development. Similarly, in some households, self-organisation was high from recycling initiation, while in others, high self-organisation developed gradually. One particular household which followed the leader to household route to recycling practice provides an illustration of the multi-factor dependent pattern of recycling repertoire development and the gradual development of high self-organisation. In household 24 (family), a non-influential leader was the driver of recycling adoption and a leader (narrowly influential form) was the initial maintainer which evolved into the household (collective form) as the present maintainer. Sally was the leader.

The multi-factor dependent pattern of recycling repertoire development referred to a number of factors influencing such development, one of which was the availability of recycling facilities. In household 24, the initial recycling repertoire was limited to glass items and paper which corresponded to the facilities available at the local church. The expansion of the recycling repertoire to include food cans, drink cans, and plastics took place after Sally discovered that such facilities were available while using a HWRC after moving house, but this was far removed from the arrival of such facilities. While Sally's lack of awareness about the location of additional facilities was important in relation to the limited initial recycling repertoire, this was not the whole explanation:

SALLY
...I think it was that sense of...I know that I can recycle tins but where exactly do I take them?...it's not as convenient as the paper and bottles which was very handy...and I think at that point it was convenience, I mean now convenience would come secondary to me...but then...we had a very small kitchen, or what we <u>thought</u> was a small kitchen.

RAJ
Yes

SALLY
...If we'd have really wanted to have done it we'd have found a space but actually...it was almost a need to gradually introduce it so that we didn't suddenly lose a cupboard...

RAJ
Yeah

SALLY

But you know it was kind of paper went on top of the fridge freezer and the bottles went in the bin out the back but it was easy to build on that, but it was that kind of convenient first step which then enabled us to do more.

Thus, the discovery of additional facilities which were 'new' to Sally but had in fact been available for substantial period of time was coupled with development of higher relative interest which also changed Sally's perception of convenience in terms of storage space devoted to recycling. This has resonance with two issues noted by Brook Lyndhurst (2004b). Firstly, the interaction between interest in recycling and perceptions of logistical factors such as storage space, whereby logistical barriers are less of an issue to those with greater interest. Secondly, many High recyclers started by recycling a limited range of items but 'ratcheted up' their recycling repertoire as they became used to recycling and found that more comprehensive recycling required less effort than previously thought.

Turning now to the gradual development of high self-organisation, Sally and Raj discussed the general pattern of events by which Sally initiated recycling and added materials to the recycling repertoire:

SALLY
I'd find somewhere or find some system of doing it, start doing it and then gradually you'd buy into it.

RAJ
...Yeah, I think that was it, it was like I've just gotta put [recyclables] there now...I think because it wasn't my passion I wasn't gonna go out of my way to set it all up...once it's set up yeah fine. And then it was about this is causing me grief cos I've gotta now dispose of this lot, "right cupboard out, what can do here?".

Thus, Raj helped to develop the system for recycling when it was causing him problems. Raj went on to describe how they hadn't quite got the system 'right' until they moved to their present address in the sense that they now had the space to make all storage points easily accessible from the kitchen. While the logistical issue of space was important in relation to self-organisation it also appeared that the appreciation of the value of high self-organisation developed as relative interest and experience of recycling increased, a pattern which was evident in households across the four routes to recycling practice.

Households generally did not cast any value judgement on the gradual nature of recycling practice development. However, household 24 perceived the gradual development of the recycling repertoire and self-organisation in a positive light. Indeed, the homogeneity of behaviour across household members with respect to materials and items within material types items separated and stored was attributed to

this gradual development and storage points acting as a visual reminder to recycle as discussed in the previous chapter:

> SALLY
> *I don't feel like I had to particularly go on about any one thing. It would be kind of "don't forget the plastics go in the plastic place"...And I think we would have fallen at the first hurdle |had we tried to recycle everything at the beginning...But because it was done in sort of gradual bits everyone's just got used to doing it.*
>
> RAJ
> *|Yes*
>
> RAJ
> *Yeah*
>
> SALLY
> *...I mean I never...did the kind of going through the bins saying "who put this in there?". (RAJ LAUGHS) I never felt like I had to do that...I think that was because it was gradual and very visible.*
>
> RAJ
> *Yeah*

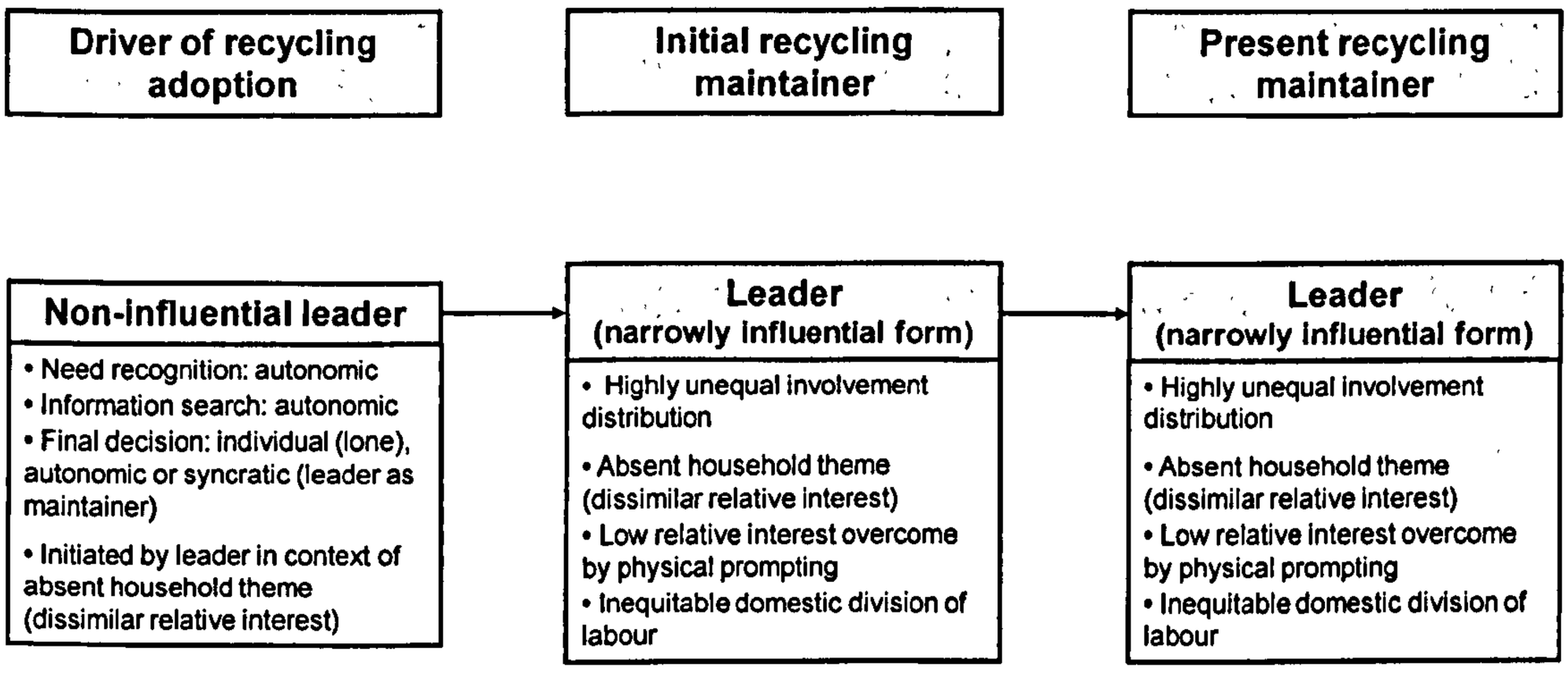
Thus, the gradual development of the recycling repertoire was advantageous in many respects, not least in avoiding being overwhelmed by higher level recycling.

Leader to leader route to recycling practice

In the leader to leader route to recycling practice (Figure 14), a non-influential leader was the driver of recycling adoption and a leader (narrowly influential form) was the initial maintainer and this remained unchanged over time. This parallels households with a single initiator and single sustainer of recycling (Oates and McDonald, 2006). Where evident, change to the recycling repertoire and change to self-organisation was also driven by the leader.

Figure 14. Leader to leader route to recycling practice.

Blue represents socialisation influence from the leader to other household members with respect to behaviour only.



The detail surrounding the leader to leader route to recycling practice was largely similar to the leader to household route whereby a non-influential leader was the driver of recycling adoption and a leader (narrowly influential form) was the initial maintainer. With respect to recycling adoption, the main difference was that in rare instances, rather than taking an individual or autonomic decision, the non-influential leader sought a syncratic final decision. These non-influential leaders advocated recycling to other household members as an integral part of the decision making process due to their perception of recycling adoption as requiring consensus. As such, there was some discussion about whether or not to recycle in the household, although the outcome of the syncratic decision was that the leader would maintain recycling. The previous chapter identified two other ways in which the role of leader in terms of maintaining recycling was assigned – falling into the role and self-appointed (p.106-8). All such leaders did not perceive recycling as requiring consensus. Leaders who had fallen into the role had not particularly contemplated how other household members felt about the EA and neither had they anticipated that they would have to be responsible for keeping recycling going. For leaders who had consciously assigned themselves this role in a

self-appointed manner, not perceiving recycling as requiring consensus was more of a conscious stance.

Although the leader behaved in a largely similar fashion in the leader to household and leader to leader routes to recycling practice, the effect of their actions on other household members differed. There were some tentative indications as to why leaders in the leader to leader route did not increase other household members' relative interest and change their behaviour beyond the separation and storage of recyclables. Firstly, households which followed the leader to household route had been recycling for a comparatively long length of time. In contrast, some households which followed the leader to leader route were relatively new recycling households. Thus, sufficient time may not have passed for full socialisation influence with respect to relative interest and behaviour to take place. Therefore, in some instances, the leader to leader route may represent the early stages of the leader to household route to recycling practice. Secondly, leaders within the leader to leader route tended to focus more on verbal prompting rather than advocation. In other words more emphasis appeared to be placed on *how* to recycle rather than *why*. This links to the point made in the previous chapter that where facilitated recyclers did not feel any kind of social pressure to partake in recycling from the leader, the leader did not convey the 'why' of recycling (p.97).

The leader to leader route to recycling practice was associated with a particular pattern of communication about recycling within the household, specifically relating to the transmission of knowledge for action about the 'finer detail' of recycling, i.e. which items should be deposited and which are contaminants. Thus, it is pertinent to consider within-material recycling practice at this point. This aspect of recycling practice, particularly in relation to paper/card recycling through the blue bin kerbside collection service, developed gradually in a number of households across the four routes to recycling practice. Initially only 'obvious' paper items such as newspapers were recycled. However, as individuals 'got more into blue bin recycling' they began to realise further paper/card items could be recycled. For example, household 8 (couple) began recycling cardboard packaging when prompted by the arrival of the second scheme card. This subsequently developed into a wider appreciation of where paper/card that could be recycled was generated (e.g. paper labels on food cans), as Leah explained:

> *I wanted to recycle the tins, then I thought "well there's paper on it". It was more of a realisation than a must do it, so I thought "right maybe I should do that".*

The transmission of knowledge for action regarding the finer detail of paper/card recycling was facilitated by a number of factors. Recycling was only a normal topic of conversation in households with a household theme involving very high relative interest. Thus, in most instances information about the finer detail of recycling was only passed on when prompted, i.e. when other household members asked questions or behaved inappropriately. Responding to the latter required an individual to notice inappropriate behaviour and be concerned by it. This scenario was therefore facilitated by high relative interest and a household-focussed perspective on recycling (which generally went together) and close interpersonal relationships. Such circumstances were thus associated with homogeneity of within-material behaviour which was the case in household 7 (family) highlighted in the previous chapter (p.119). Although information about the finer detail of paper/card recycling was not generally automatically passed on, it was not deliberately withheld apart from by some leaders within the leader to leader route to recycling practice. Household 8 was an example of such a household. Leah and Neil presently behaved homogeneously with respect to blue bin contaminants as also highlighted in the previous chapter (p.119) but this had not always been the case. Leah learnt that food-contaminated cardboard packaging should not be put in the blue bin from reading the scheme literature. She shared this information with Neil when prompted to by his inappropriate behaviour. Leah was probed about why she had initially withheld this information from Neil:

LEAH
...I sort of see what's going in the bin because I mostly empty |it, so if there would have been something [inappropriate in the storage box] I would have seen it, so I didn't feel like I needed to tell Neil what was in [the leaflet] I suppose...Well I didn't think he'd be bothered.

NEIL
|Yeah that's fair

ME
Right okay

LEAH
Or interested, so I read [the leaflet] and took it in and threw it in the recycle bin (I LAUGH, NEIL LAUGHS) and...I just thought if Neil does it wrong then I'll know.

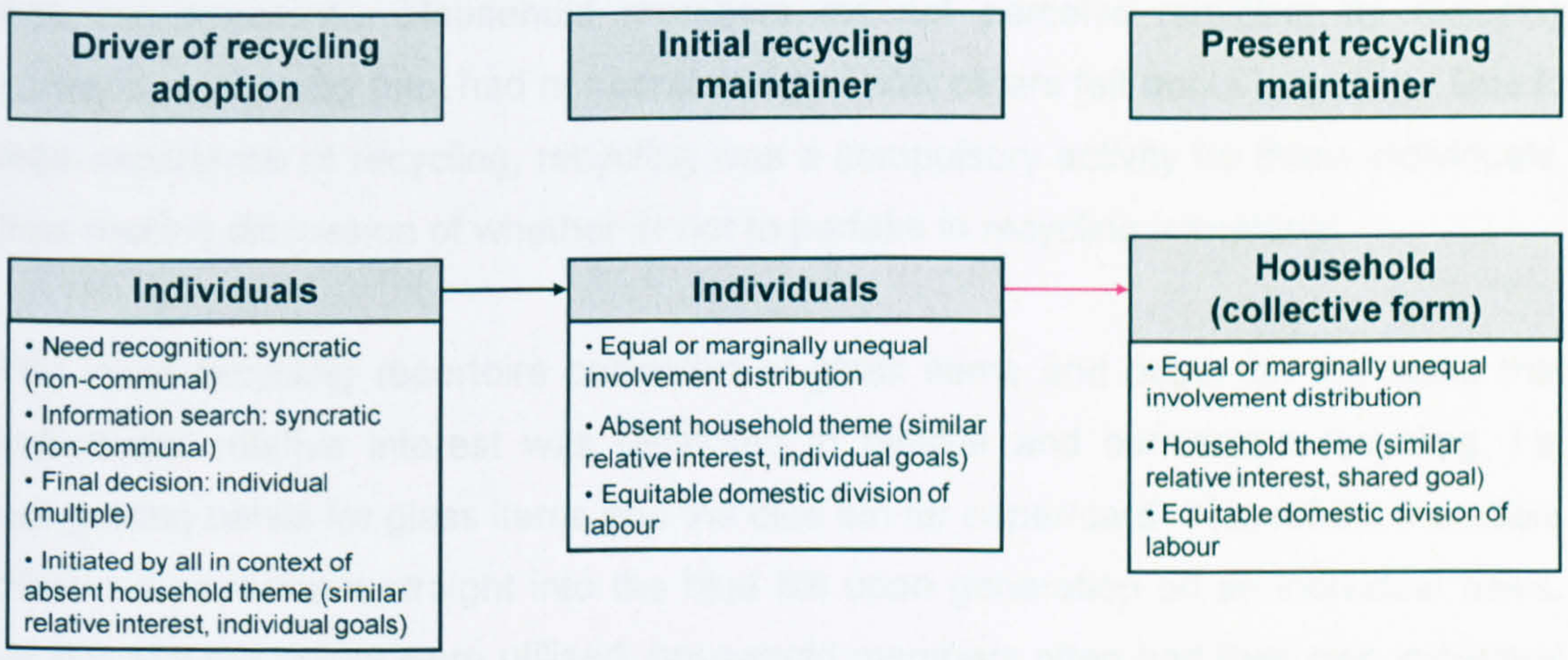
Thus, where leaders knew that other household members possessed low relative interest and therefore would not be interested or would not respond well to additional complexity, and the leader could override any inappropriate behaviour, then the leader was inclined to deliberately withhold information about the finer detail of recycling.

Individuals to household route to recycling practice

In the individuals to household route to recycling practice (Figure 15), recycling adoption was driven by individuals. Initially, individuals maintained recycling but this evolved into the household (collective form) as the present maintainer. This parallels households with a joint initiator and joint sustainer of recycling (Oates and McDonald, 2006). Changes to the recycling repertoire and self-organisation were rare but were driven by a leader where they did take place.

Figure 15. Individuals to household route to recycling practice.

Pink represents household theme development through the development of collective recognition that recycling was a shared goal.



The households which followed the individuals to household route to recycling practice were all student or professional sharers. Thus, this route displayed a tendency towards a specific household type which was not particularly evident with the other three routes to recycling practice. However, relatively few households followed this route and shared households also followed other routes. These households exhibited a particular pattern with respect to what prompted recycling adoption and how a basic level of recycling practice was reached (lower level recycling with low self-organisation), and communication about recycling in the household.

Recycling adoption was associated with household formation. In a similar fashion to households which followed the common position pattern with the household to household route to recycling practice, household formation represented similar individuals 'coming together' in the sense that household members had experience of recycling, typically in the parental home. However, there were two important differences. Firstly, household members' relative interest was lower, generally restricted to what was familiar and/or convenient rather than a broad relative interest in recycling in general. Secondly, a household theme was not present; despite exhibiting similar relative interest, household members failed to see recycling as a shared goal. This appeared to be because household members did not know each other particularly well upon household formation and because recycling was not *overly* important to household members. As such, each household member recognised the need to recycle, utilised their own knowledge for action, and made an individual decision to begin recycling without directly or indirectly involving other household members in the decision making process. Discussion about whether or not to recycle in the household was not apparent. Household members did not perceive recycling as requiring consensus whereby they had not contemplated how others felt about recycling. Due to their experience of recycling, recycling was a compulsory activity for these individuals, thus making discussion of whether or not to partake in recycling immaterial.

The initial recycling repertoire consisted of glass items and paper on the basis that individuals' relative interest was restricted to familiar and convenient recycling, i.e. using bring banks for glass items and the blue bin for paper/card. Household members often put paper/card straight into the blue bin upon generation on an individual basis. Where storage points were utilised, household members often had their own individual points although central points were also created by one household member storing their recyclables in a particular spot and other household members then following suit with their recyclables. However, in all cases storage points were informal. The visual aspect of the storage of recyclables was important in relation to household theme development; the collective recognition that recycling was a shared goal developed through individuals seeing that other household members behaved in a similar way rather than through verbal communication. Given that household members exhibited relatively low relative interest and a self-focussed perspective on recycling, and interpersonal relationships were not particularly close, they were not inclined to raise questions about recycling or notice and be concerned by inappropriate behaviour. Thus, individuals were not prompted to pass on information and as such, within-material behaviour was often heterogeneous. For example, in household 11 (student

sharers), behaviour was heterogeneous with respect to paper/card items separated and stored, as highlighted in the previous chapter (p.123). Some household members deliberately binned food-contaminated cardboard packaging as they had read the scheme literature while others deliberately separated and stored such contaminants according to their own assumptions about the recyclability of such items.

Barriers to higher level recycling

The vast majority of households exhibited the same pattern with respect to recycling repertoire development. When recycling was initiated the recycling repertoire was limited to glass items and/or paper. Subsequently, at different times, further materials were added to the recycling repertoire and composting was initiated. Given this pattern, and the desirability of higher level recycling from a policy perspective, it is of interest to consider why lower and medium level recycling households had not expanded their recycling repertoire. Household 19 (couple) was the only household who participated in recycling simply because they had been provided with a kerbside collection service. Darren and Hayley used their blue bin and their green bin primarily to avoid in the inconvenience of filling their wheelie bin up, although they appreciated the environmental benefits of recycling. Whilst using the blue bin kerbside collection service because 'it's there' was relevant to all households to some extent, the vast majority of lower and medium level recycling households also used bring banks to recycle glass items. Since such households went to the effort of participating in this relatively inconvenient form of recycling (compared to using their blue bin), the exclusion of materials such as food cans, drink cans and plastics from the recycling repertoire cannot be attributed to relatively low relative interest in recycling.

Lower and medium level recycling households typically did not express any real discomfort about not exhibiting higher level recycling. Although lower level recycling households often provided a number of reasons as to why they did not recycle more materials and did not compost, it was evident that 'doing more' was not something they had particularly thought about. The barriers to higher level recycling were typically simpler for medium level recycling households. For example, composting was not perceived to be a practical option without a garden. The omission of food cans from the recycling repertoire was largely due to a lack of awareness that facilities existed. Social networks of like-minded people often acted as an important source of information about new facilities and appropriate practices for particular households which exhibited the common position pattern within the household to household route to recycling practice. Households without such social networks often continued to take

the inaccurate labelling of the food/drink cans and plastics banks at face value, thus believing that there were no facilities available.

The remainder of this discussion will focus on the barriers to more comprehensive recycling which were evident primarily in lower level recycling households. Some lower level recycling households had not been recycling in their present household for a particularly long length of time. Given the recycling repertoire typically developed gradually, it may be that these households would expand their recycling repertoire in time. However, as indicated above, lower level recycling households were quite content with the extent of their efforts at the present moment. Barriers identified by the households themselves commonly included lack of storage space, a low quantity of recyclables, and lack of association and knowledge for action. Low self-organisation also appeared to be a barrier to higher level recycling although this issue was unrecognised by the households themselves. These barriers were evident across the four routes to recycling practice.

Lack of storage space and low quantity of recyclables

Two logistical barriers to higher level recycling were evident, both subjective in nature (Barr, 2002; Brook Lyndhurst, 2004b; Darnton, 2004b; 2004a). The first barrier, in keeping with Hayward et al. (2007) and Pocock et al. (2008), was lack of storage space, as illustrated by household 11 (student sharers):

> KIMBERLEY
> *I think I'd be more inclined to have separate bins for like glass, paper, plastic, cans, compost and general waste if we had more space in our kitchen.*
>
> JENNY
> *I think space is a real issue, we don't have a utility room or anything like that.*

Kimberley indicated that if higher level recycling was to proceed then separate formal storage points for each material would be necessary and because a lack of space precluded this, then higher level recycling was not possible. Thus, for lower level recycling households, the issue of storage space appears not to be a lack of space per se, but lack of space to house the numerous separate containers which are perceived to be required. Brook Lyndhurst (2004b, p.24) noted that few Low and Medium recyclers *"can relate to the idea that they already 'store' waste in their dustbin and that recycling may only require moderate re-organisation"*, a sentiment which was very much apparent here.

In keeping with the identification of 'not having enough recyclables' as a reason for not recycling, e.g. Tucker (1999), Perrin and Barton (2001), McDonald and Oates (2003), a

low quantity of additional materials was also a barrier to higher level recycling, as illustrated by household 19 (couple). Darren and Hayley recycled glass bottles and drink cans when they had large quantities after a party primarily to avoid in the inconvenience of filling their wheelie bin up (the same reason why they participated in kerbside collections). They were probed as to why they did not recycle glass and cans on a day to day basis:

> DARREN
> *Generally I suppose that's because we don't use a lot of glass bottles or metal tins really |do we...*
>
> HAYLEY
> *|No*
>
> HAYLEY
> *Yeah cos a lot of our food isn't pre-packed or tinned |is it*
>
> DARREN
> *|Yeah cos we do a lot of fresh cooking you see...we use very few cans, we probably use three or four cans a week, if that. I mean we probably get through eight to ten glass bottle items a week would you say, if that...so there's very little demand in the house to have another two bins for glass and for metal when they'd only get emptied out of the house once a fortnight or less...we don't generate enough to see the benefit to us having to save and store it.*

Darren's remarks again highlight the perception that higher level recycling requires separate containers for each material and also illustrate the subjective nature of 'enough' recyclables; many households indicated that the quantities of glass bottles and food cans Darren referred to would be more than enough to warrant recycling them.

Lack of association and knowledge for action

In many of the student sharers and professional sharers households which thus consisted of individuals in their late teens and twenties, household members talked about how they associated recycling with bottle banks through childhood experience of recycling. Glass bottles were easy to store and were an 'obvious' item to recycle. Paper was also associated with recycling although often to a lesser extent but in any case the kerbside collection provided households with little reason not to recycle paper/card. Food cans and plastics were not associated with recycling. This was particularly evident in households which followed the individuals to household route in which relative interest was generally restricted to familiar and convenient recycling.

While lower level recycling households often provided a number of reasons why they did not recycle further materials, it was also clear that these households were not aware of relevant recycling facilities anyway, in keeping with Hayward et al. (2007) and

Pocock et al. (2008). These households had not made an informed choice regarding their recycling repertoire. Indeed, it was extremely rare for a lower or medium level recycling household to have full awareness of the availability of recycling facilities but consciously decide not to use them for example for logistical reasons such as lack of access to a car. In a similar fashion to medium level recycling households, some lower level recycling households indicated that if they knew where they could recycle food cans, drinks cans and plastics then they would do so. However, household members had not actively sought information about the availability of such facilities. Interestingly, many lower and medium level households were depositing glass items into bring banks which were *adjacent* to banks for food/drink cans and plastics but had not noticed the presence of these banks. As discussed in chapter 3, in order to remain neutral to the content of household discussion, I typically explored this issue but refrained from challenging the household (p.78). However, I was so amazed that this issue kept reoccurring that I eventually challenged Elliot, the leader from household 23 (student sharers):

> ME
> *What if I told you that there are banks for plastic and tins right next to the glass banks you use?*
>
> ELLIOT
> *Is there? ((LOOKS SURPRISED)) ...What those big, there's that big blue one, that's paper isn't it?*
>
> ME
> *Yeah, and then there's the green ones just behind the glass. ((ELLIOT CONTINUES TO LOOK SURPRISED))*
>
> ELLIOT
> *Oh, I just always thought [it was only glass and paper]...*
>
> ME
> *So you hadn't noticed them?*
>
> ELLIOT
> *I hadn't noticed that, then definitely...there's absolutely no reason why we shouldn't [recycle food cans, drink cans and plastics].*

Many of the individuals who had not picked up on 'obvious' information such as the presence of additional banks adjacent to the banks they were already using exhibited lower relative interest. There were also examples of individuals picking up on such information once their relative interest increased. However, some individuals exhibited high relative interest, as was the case with Elliot above. Thus, while it appears that possessing high relative interest makes the passive gathering of information more likely, this is not guaranteed.

Low self-organisation

Neither the maintainer nor the route to recycling practice was intrinsically indicative of the household's recycling repertoire. Rather, self-organisation was indicative of recycling repertoire. As such, high self-organisation (i.e. a recycling system comprised of the use of formal storage points and the incorporation of recycling tasks into domestic routines) tended to be exhibited by medium and higher level recycling households. Conversely, low self-organisation (i.e. the lack of a recycling system involving informal storage points and the comparatively less routinised removal of recyclables) tended to be exhibited by lower level recycling households.

As discussed in the previous chapter, high self-organisation was associated with the perception of recycling as successful, requiring minimal effort and not as additional work in terms of domestic activity. Such households also indicated that expanding the recycling repertoire was easy as it merely involved incorporating an additional material into their existing system, as illustrated by household 8 (couple):

> NEIL
> *Say if you found out we could do tin foil*
>
> LEAH
> *Yeah*
>
> NEIL
> *We'd have either an extra tin foil box or it would all go in the normal recycling stuff and we'd just start doing it*
>
> LEAH
> *Yeah*

As also discussed in the previous chapter, although low self-organisation did not necessarily inhibit the continuation of the recycling process (except in extreme conditions), low self-organisation did make the recycling process comparatively problematic. Therefore, from the perspective of self-organisation, it seemed unlikely that lower level recycling households would expand their recycling repertoire, which was further to the reasons they directly provided as to why they did not recycle further materials.

High self-organisation was typically associated with high relative interest and low self-organisation was generally associated with lower relative interest representing a desire to participate in familiar and convenient recycling only, either in the form of a household theme or stemming from a leader. However, low self-organisation was also evident in households with high relative interest. Regardless of relative interest, individuals in lower level recycling households with low self-organisation had no strong aversion to

higher level recycling. Thus, if provided with a recycling system for higher level recycling it appeared that these individuals would respond accordingly. However, these individuals were not likely to initiate such a system themselves. Thus, it becomes pertinent to examine the barriers to the development of high self-organisation.

For individuals with high relative interest, the development of high self-organisation was hindered solely by a lack of appreciation of the value of high self-organisation and how such a recycling system could be created. This issue is illustrated by household 21 (family) which followed the leader to household route to recycling practice. Nicholas referred to how both he and Diane worried about the environment and were *"more committed than most"* with respect to recycling. However, as Nicholas explained (this is expanded version of a quote used in the previous chapter to illustrate the comparatively less routinised removal of recyclables (p.118)):

> *Once or twice I've said to Diane that she's good at talking the talk but crap at walking the walk, she's always going on about recycling... Diane will put bottles in sacks...and then drive around for ages with them in the car boot and eventually I get pissed off and I'll say "right okay, if in two days that's not gone out of the car boot then I'm gonna bin it in the conventional bin". Have I ever done that and carried it through? Probably not, I probably just limped off and recycled it myself...How good an environmentalist you are really is to do with how effective a person you are, and the reality is we're not desperately effective people.*

Nicholas repeatedly referred to how he and Diane found it extremely difficult to cope with their three young children and how this left them with little time to think about anything else including recycling. Therefore, their relatively disordered picture of recycling practice had developed haphazardly with little conscious thought given to and no discussion about how recycling could be better organised. Their situation resonated with Amanda from household 7's viewpoint about lack of time being an issue in relation to making a decision about recycling and setting up a system. However, it was also apparent that Nicholas and Diane lacked 'dynamism' in relation to self-organisation as indicated in the above quote and Nicholas' further reference to himself and Diane as *"organisationally-challenged people"*.

For individuals with low relative interest, the development of high self-organisation was hindered by two intertwined issues – low relative interest itself and a lack of appreciation of the value of high self-organisation and how such a recycling system could be created. This scenario was mainly evident in households which followed the individuals to household route to recycling practice. This discussion was also informed by household 22's (couple) discussion of why they had not recycled in a previous

household. All the households in question were shared households. Within these households, household members shared similar relative interest which was at the lower end of the spectrum. Although household members were not averse to higher level recycling per se, they were averse to being solely responsible for the movement of recyclables to the final recycling facility. In other words, none of the household members exhibited relative interest high enough for them to act as a leader. This is illustrated by the experiences of Hannah and Mark from household 22 (couple) of living in the same household of student sharers. One household member had put in place formal storage points. Although recyclables were separated and stored by household members, they were not removed from the home as illustrated by Hannah:

> *I think we all thought [recycling] was a good idea, yeah it's what we should be doing and yes we should really try to recycle, but it honestly didn't mean enough to any of us to take on that responsibility and no one obviously wanted that whole thing on themselves.*

While individuals 'waited' for other household members to act, the consequent build up of recyclables inhibited the separation and storage of further recyclables in a situation reminiscent of household 11 (student sharers) discussed in the previous chapter; this ultimately led to recycling 'fizzling out'. Thus, individuals with low relative interest lacked the impetus to create a system because recycling was not overly important to them. However, they also lacked an appreciation of how to create a system. This position can be attributed to a greater or lesser extent to low relative interest. However, it cannot be assumed that an increase in any of the household members' relative interest would automatically lead to the development of a system as it has just been seen that high self-organisation does not necessarily come naturally even to individuals with high relative interest.

A number of issues within the households in question demonstrated that household members lacked an appreciation of how to create a recycling system. Household 11 (student sharers) provides an example, with particular issues pulled from the outline of the lack of a recycling system discussed in the previous chapter. With respect to paper/card recycling using their blue bin, despite having the scheme card with collection dates displayed on the kitchen wall, the household continually missed the collection meaning that blue bin remained full. Missing the collection prompted some comment but responsibility for this task remained unresolved. The consequent build up of the makeshift pile of paper/card inhibited the further separation and storage of these recyclables. Glass items also built up indefinitely as without access to a car, taking these recyclables to the bring banks was regarded as too problematic; there was no recognition that this task could be combined with walking to university – a daily routine

for all six household members. A further and particularly telling issue related to how this household and household 22's (couple) previous household of student sharers had approached the domestic division of labour. These households had put in place elaborate rotas for the equitable distribution of domestic tasks such as cleaning and cooking. These rotas had been created collectively through discussion to overcome the problem of household members thinking *"someone else will do it"* with respect to domestic tasks. Although these households ran into parallel difficulties with recycling practice, devising some sort of recycling rota or integrating recycling tasks into the existing rota was not something that household members had even entertained the possibility of.

Whether or not the formal assignment of responsibility for recycling tasks to household members through some sort of rota would actually result in a functioning recycling system in practice is unknown, particularly if household members' relative interest remained low. However, given that household members' similar relative interest seemed adequate enough to maintain recycling if this was done in an equitable manner, the creation of some sort of rota was intuitively appealing. However, it is unsurprising that this strategy was not recognised by the household itself for two reasons. Firstly, as discussed in the previous chapter, individuals who physically contributed to keeping recycling going (and therefore generally had high relative interest) tended to see recycling tasks as part of wider domestic activities while facilitated recyclers (with low relative interest) tended to see recycling tasks, particularly the movement of recyclables to the final recycling facility as extra work. Thus, it is unsurprising that individuals with relative interest at the lower end of the spectrum did not 'see' recycling in the same manner as cleaning and cooking. Indeed, as already pointed out in the previous chapter, recycling differs from other domestic activities in that there are no personal ramifications of not carrying out recycling regularly (Oates and McDonald, 2006).

Secondly, as has been seen throughout this chapter, discussion about whether or not to recycle in the household was typically lacking where household members had experience of recycling in previous households. Furthermore, discussion about how to organise recycling was also a rarity, restricted to households with a household theme involving very high relative interest. Thus, although a lack of communication about the principle and organisation of recycling was the norm in most households, this was even more apparent in these shared households. Indeed, this lack of communication only appeared to be problematic in households with low self-organisation. For example, in the shared households, although individuals exhibited similar relative interest, they had

not 'checked this out' with other household members. Thus, household members *assumed* that they would have to be solely responsible for the movement of recyclables to the final recycling facility. Had the principle and organisation of recycling been discussed it *may* have been established that household members were willing to be equally responsible for keeping recycling going which *may* in turn have led to an equitable recycling system being collectively put in place.

Summary

This chapter has addressed the research question – How are environmental actions adopted in household? – with respect to recycling/composting. Three main findings have been presented. Firstly, recycling practice developed gradually rather than in one step and as such, the research question was addressed within broader exploration of how three aspects of recycling practice developed – the maintainer, recycling repertoire and self-organisation.

Secondly, EA adoption and change to repetitive EA practice was driven by a number of different units across the households. The driver of EA adoption is the unit which was ultimately responsible for the physical initiation of a repetitive EA or the practice of a one-off act/purchase in the current household. Each driver is characterised by a particular pattern of relative influence across the decision making process of need recognition, information search and final decision, and the culmination of the decision making process in the presence or absence of an EA household theme (and the physical initiation of a repetitive EA in this context). Four drivers were evident across the four activity types, including recycling/composting – household, non-influential leader, influential leader, and individuals. The driver of EA practice change is the unit which was ultimately responsible for the change to repetitive EA practice. With respect to the three aspects of recycling practice, three such drivers were evident – household, leader and individuals.

Thirdly, multiple routes to recycling practice were evident when the driver of recycling adoption was followed through time to the present maintainer, thereby involving the initial maintainer. Four broad routes to recycling practice were identified characterised by the driver of recycling adoption and the present maintainer – household to household, leader to household, leader to leader, and individuals to household.

Chapter 6

Environmental action practice and its development: wider environmental actions and environmental action repertoires

This chapter addresses both research questions – How are environmental actions adopted in households? How are environmental actions practiced in households? – with respect to lone wider EAs (repeated acts, repeated purchases, one-off acts/purchases) and EA repertoires. As such, this chapter is heterogeneous in nature, covering a number of different foci.

The first part of the chapter focuses on the adoption and practice of lone wider EAs. This part is structured around three main findings which parallel the main findings in relation to recycling discussed in the previous two chapters (however, there are differences in detail). Firstly, that wider EAs were practiced/maintained by a number of different units. As such, the first section outlines these wider EA enactors/maintainers. Secondly, that multiple routes to wider EA practice were evident when the driver of EA adoption was followed through time to the enactor/present maintainer. Given that the different units which drove EA adoption and change to repetitive EA practice were outlined in the previous chapter, the second section examines the different routes to wider EA practice. Thirdly, that repetitive wider EA practice was embedded in the everyday life of the household when EA practice was habitual and/or incorporated into domestic or general routines. In these circumstances, the EA was perceived as requiring minimal effort and was not perceived as additional work in terms of domestic/everyday activity. Hence, EA practice was seen as part of the normal activity of the household, i.e. embedded in everyday life.

The second part of the chapter focuses on patterns of adoption and practice across EA repertoires. This part is structured around three main findings in three respective

sections. Firstly, that EA repertoires were underpinned by different patterns of motives. Secondly, that multiple routes to EA repertoire practice were evident with each route representing the dominant route(s) to EA practice across the EA repertoire. Thirdly, that EA repertoires developed gradually rather than in one step, with different constituent patterns.

Wider environmental action enactors/maintainers

As discussed in chapter 4, the EA enactor/maintainer is the unit physically and notionally responsible for EA practice. Each enactor/maintainer is characterised by a particular distribution of involvement in EA practice *and* an explanation of the distribution (p.92-3). Five enactors/maintainers of wider EAs were identified – household (collective form), household (representative form), leader (non-influential form), leader (widely influential form), and individuals.

The wider EA enactors/maintainers differed from their recycling counterparts both in terms of the types of distribution of involvement in EA practice and the factors which explained the involvement distributions, although there is some overlap in terms of the latter. Two factors were relevant to all three wider EA types – the presence or absence of an EA household theme and the domestic division of labour. One factor was relevant to repeated acts and one-off acts/purchases only – the openness of EA practice to all. Three factors were relevant to repeated acts only – verbal prompting, empathy, and habit. Before an overview of each wider EA enactor/maintainer is provided, the different involvement distributions, the nature of high and low relative interest, the domestic division of labour, and the openness of EA practice to all will be examined.

Two main distributions of involvement in EA practice were evident across the three wider EA types – equal and entirely unequal. Within equal involvement distributions, all or most individuals practiced the EA. Within entirely unequal involvement distributions, only one individual practiced the EA with other household members (including adults) making zero physical contribution to EA practice.

As discussed in chapter 4, relative interest refers to the level of importance a household member places on participating in a particular EA. Individuals with high relative interest were prepared to 'make the EA happen' in their household while those with low relative were not (p.95). In contrast to recycling, the rationale of wider EAs was questioned more frequently by individuals with low relative interest, e.g. the environmental benefit of switching to green electricity, using energy saving light bulbs,

etc. However, in keeping with recycling, the common position of such individuals was a negative perception of the EA, generally relating to logistical factors such as convenience and cost, which equated to a position of 'just not that interested' or 'can't be bothered'. Some cases of repeated act practice represented wholly habitual behaviour which was not underpinned by particularly strong motives. These individuals therefore also exhibited low relative interest.

Among individuals with high relative interest, three general types of motives were evident. As with recycling, environmental reasons and waste aversion were evident. Environmental reasons represented a range of motives. When discussing a particular EA some individuals expressed a general notion of 'wanting to help the environment' while others were more specific; for example, energy conservation EAs were often underpinned by a desire to save energy and therefore reduce pollution and carbon dioxide emissions. Waste aversion represented a dislike of waste and was particularly relevant to energy and water conservation EAs. For many individuals, waste aversion was tightly associated with environmental reasons while for others it represented more of a standalone motive. However, in either case a passionate dislike of waste was the core issue and as such waste aversion is treated as a separate type of motive in a similar manner to Defra (2008b). The third general type of motive is saving money which was particularly relevant to energy conservation EAs (Holdsworth, 2003; Brook Lyndhurst, 2007b). In addition, other motives were evident which were largely restricted to particular EAs. For example, health benefits often underpinned walking or cycling instead of using the car (Defra, 2002; Holdsworth, 2003) and buying organic food (Hughner et al., 2007). Individuals typically expressed a combination of motives for participating in a particular wider EA (De Young, 2000). For example, for many individuals, buying energy saving light bulbs was primarily underpinned by saving money with environmental reasons as a supporting motive.

As seen in chapter 4, individuals who physically contributed to keeping recycling going typically discussed recycling tasks as part of wider domestic activities and the domestic division of labour was a factor underpinning the distribution of involvement in recycling practice. This issue was also evident in relation to wider EAs. This is largely in keeping with the previously recognised broad link between involvement in wider EA practice and the domestic division of labour (Dickinson, 1994; Grønhøj, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007). The incorporation of repetitive wider EAs into domestic routines will be discussed later (p.185). As in relation to recycling, the domestic division of labour was relevant at the micro level of responsibility for the specific domestic tasks which encompassed wider EAs. This

relationship was most prominent with respect to responsibility for shopping for everyday goods and repeated purchase practice, as illustrated by household 8 (couple):

> ME
> *Who buys the [recycled paper toilet roll]?*
>
> LEAH
> *I think you mostly.*
>
> NEIL
> *Yeah*
>
> LEAH
> *Because you do the |supermarket shopping*
>
> NEIL
> *|I do the shopping yeah.*

The practice of some one-off acts/purchases such as installing insulation was sometimes associated with responsibility for DIY and the structural maintenance of the home. The one-off act of switching to green electricity was sometimes associated with responsibility for the management of household bills. With respect to repeated acts, using the washing machine on low temperature and with full loads was associated with laundry responsibility.

The openness of EA practice to all was a factor of most relevance to repeated acts. Most repeated acts were unaffected by the domestic division of labour. These EAs could be practiced by all household members if they were inclined to do so, e.g. turning lights off in unused rooms, turning the tap off when brushing teeth. Therefore, EA practice was open to all. Conversely, the practice of some one-off acts/purchases simply did not lend itself to more than one household member being involved, e.g. physically making the switch to green electricity by post, phone or online. Therefore, EA practice was not open to all.

The discussion will now turn to an overview of the five wider EA enactors/maintainers (Figure 16). The household (collective form) as the enactor/maintainer involved an equal distribution involvement. This was explained by an EA household theme in conjunction with an equitable domestic division of labour or EA practice being open to all. Due to the presence of a household theme, particularly the collective recognition that the EA was a shared goal, household members practiced the EA from a collective perspective.

The household (representative form) as the enactor/maintainer involved an entirely unequal involvement distribution. Although a household theme was evident, an inequitable domestic division of labour or EA practice not being open to all meant that one individual was responsible for EA practice. However, when the individual practiced the EA, they were enacting the known will of the household.

A leader (non-influential form) as the enactor/maintainer involved an entirely unequal distribution involvement. If the leader had ceased to practice the repetitive EA or had not practiced the one-off act/purchase, then the EA would not be evident in the household. The entirely unequal involvement distribution was explained by the absence of a household theme involving dissimilar relative interest. Whether the domestic division of labour favoured one individual or all individuals practicing the EA, or whether or not EA practice was open to all was irrelevant. In other words, both sets of scenarios were evident.

A leader (widely influential form) as the maintainer was evident only in relation to repeated acts. This involved an equal involvement distribution despite the absence of a household theme. Thus, although household members other than the leader exhibited low relative interest they nonetheless practiced the EA (EA practice was open to all household members). Therefore, a leader (widely influential form) as the maintainer represents socialisation influence from a leader to other household members with respect to behaviour only. In some instances, these individuals practiced the EA when instructed to by the leader (verbal prompting), which often represented parents 'nagging' children, as illustrated by Nicola from household 16 (family):

> *I don't turn lights off because I'm not used to it because I've never been told to when I've been little. It's like this year you've [her parents] only just started telling me to turn my lights off...and I don't think you should like expect me to change like that ((CLICKS FINGERS)).*

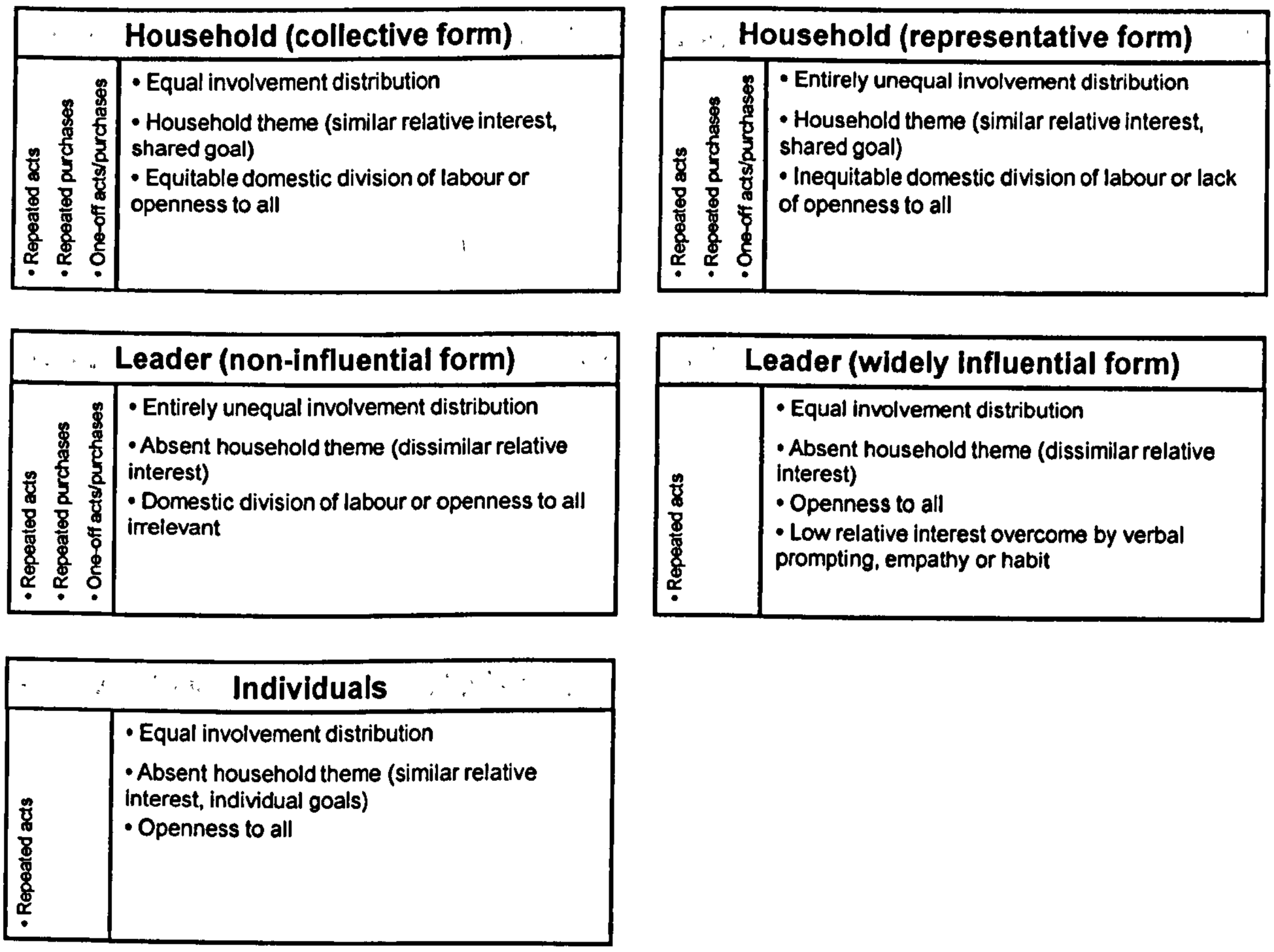
Verbal prompting was typically employed by leaders in an ongoing manner in response to witnessing inappropriate behaviour. In some instances, individuals practiced the EA due to their high empathy towards the leader. As in relation to recycling, empathy stemmed from the leader having advocated the EA and for some verbal prompting was also required. Empathy was evident in households with close interpersonal relationships (Kirchler et al., 2001), which with respect to wider EAs were couple and family households *and* shared households based on friendships. With both verbal prompting and empathy, the leader was pivotal to the continuation of the repeated act. In other instances, individuals practiced the repeated act in a wholly habitual manner.

Illustrating Shove's (2003a) recognition of the importance of parental influence in shaping habit, this scenario typically referred to children or young adults who had had this behaviour 'drilled into them' by a parent who was motivated by saving money. Thus, although the leader was not presently pivotal to the continuation of the repeated act, the leader was responsible for such practice becoming habitual in the first place through verbal prompting.

Where individuals maintained the EA, this was evident only in relation to repeated acts. This involved an equal involvement distribution which was explained by two factors – the absence of a household theme involving similar relative interest and the openness of EA practice to all. As household members did not collectively recognise that the EA was a shared goal and instead saw the EA as an individual goal, they did not practice the EA from a collective perspective.

Figure 16. Characteristics of the wider environmental action enactors/maintainers.

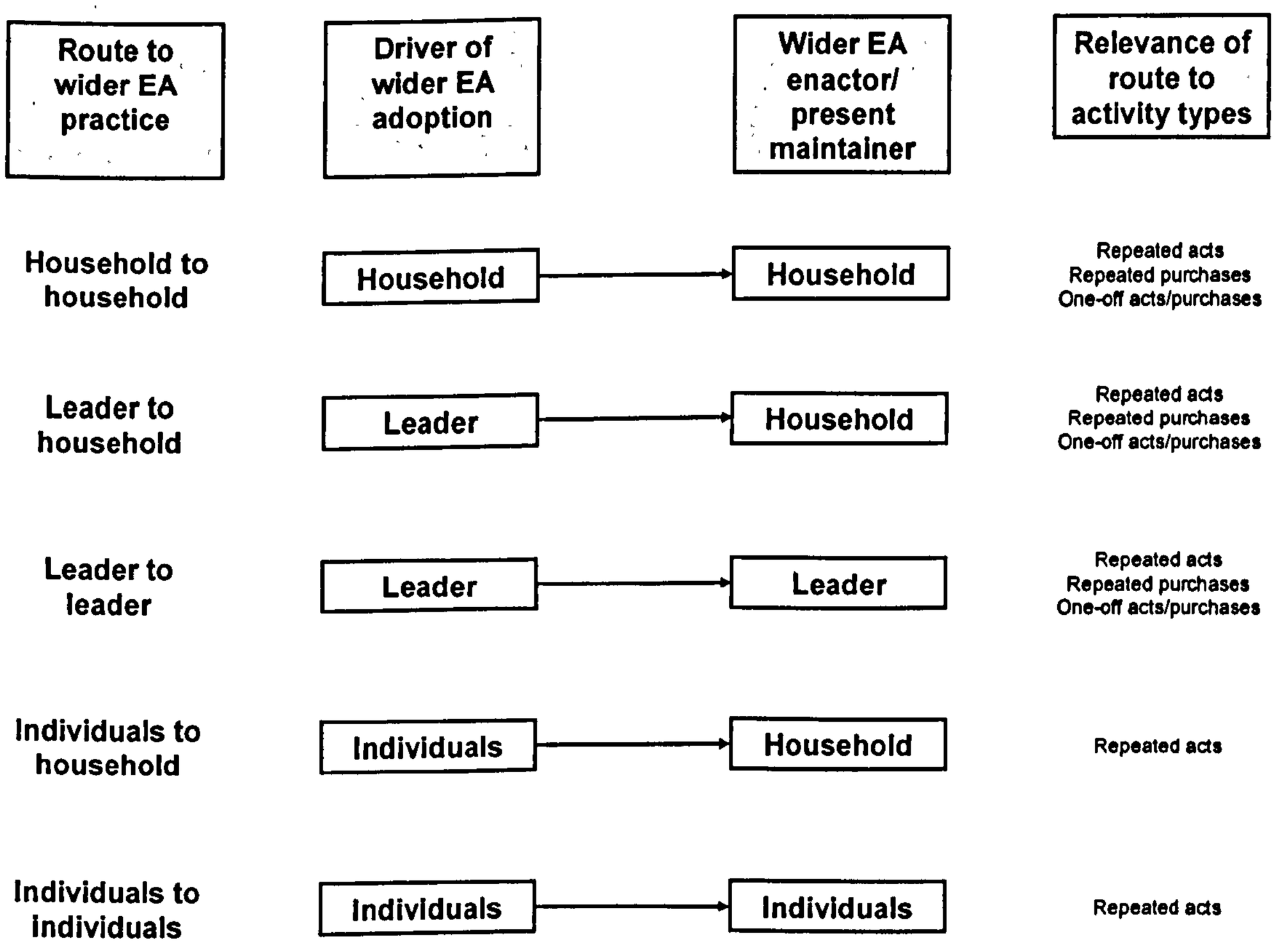
The vertical box indicates the relevance of the enactor/maintainer to the three activity types. Blue represents socialisation influence from the leader to other household members with respect to behaviour only.



Routes to wider environmental action practice

In the same manner as the route to recycling practice, the route to repetitive wider EA practice represents the driver of EA adoption followed through time to the present EA maintainer, thereby involving the initial maintainer. The route to one-off act/purchase practice represents the combination of driver of EA adoption and EA enactor. The multiple routes identified can be grouped together into five broad routes to wider EA practice (Figure 17). The four broad routes to recycling practice (household to household, leader to household, leader to leader and individuals to household) were also evident in relation to wider EAs, along with a route that had no recycling counterpart – individuals to individuals route to wider EA practice. In some instances involving repeated acts, more than one route was evident in the household.

Figure 17. Routes to wider environmental action practice.



In the following four sections, each route will be explored in detail, with the individuals to household and individuals to individuals routes to wider EA practice considered together. This discussion highlights one aspect of repetitive wider EA practice that developed gradually rather than in one step, namely the maintainer. The leader to household and individuals to household routes to wider EA practice were characterised

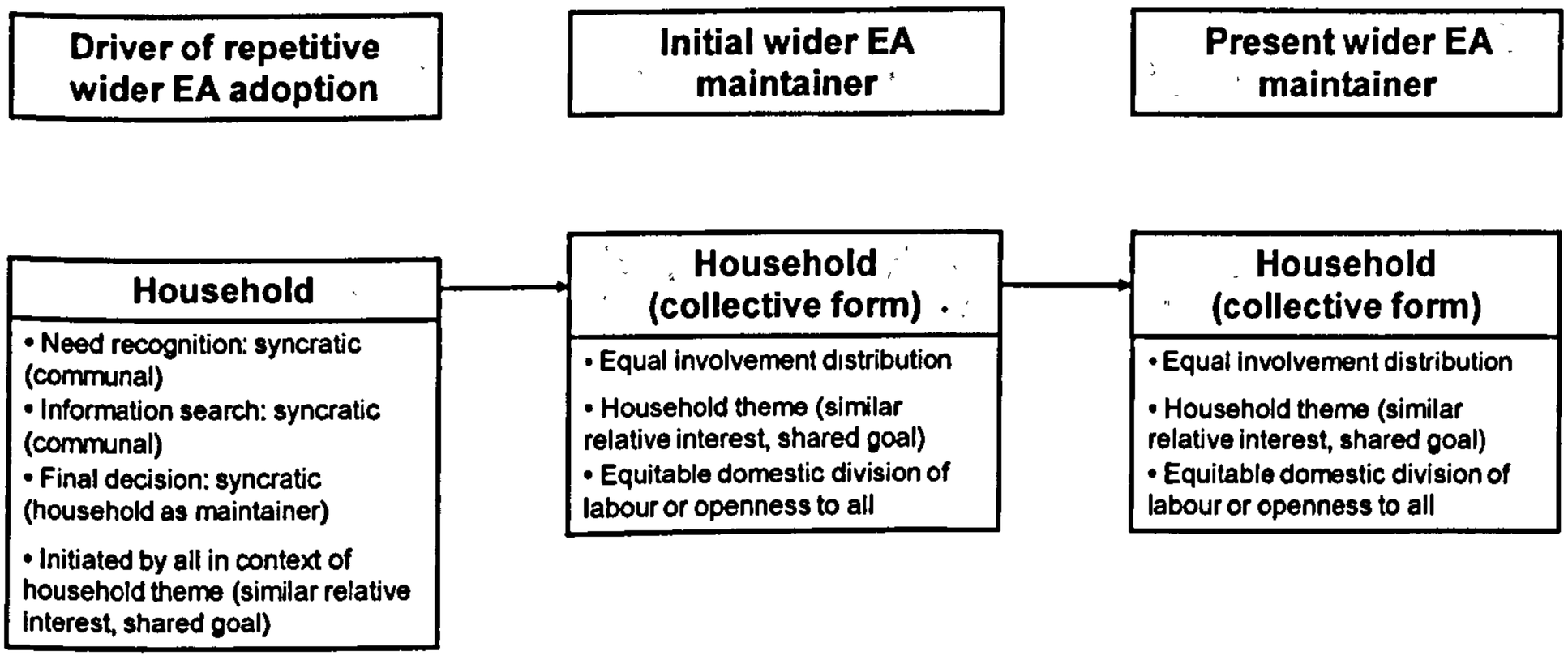
by the gradual development of the present maintainer over a period of time, along with one constituent route within the leader to leader route to wider EA practice. In the other routes to wider EA practice, the initial maintainer did not substantially change over time. The other aspect of repetitive wider EA practice that developed gradually was habitual and/or routinised practice. This issue spanned the five routes to wider EA practice and is considered separately later (p.185). In comparison to the examination of the routes to recycling practice in the previous chapter, what prompted wider EA adoption and from where and how knowledge for action was sourced receives less attention here. However, these issues are picked up in the final section of this chapter which examines EA repertoire development (p.197).

Household to household route to wider environmental action practice

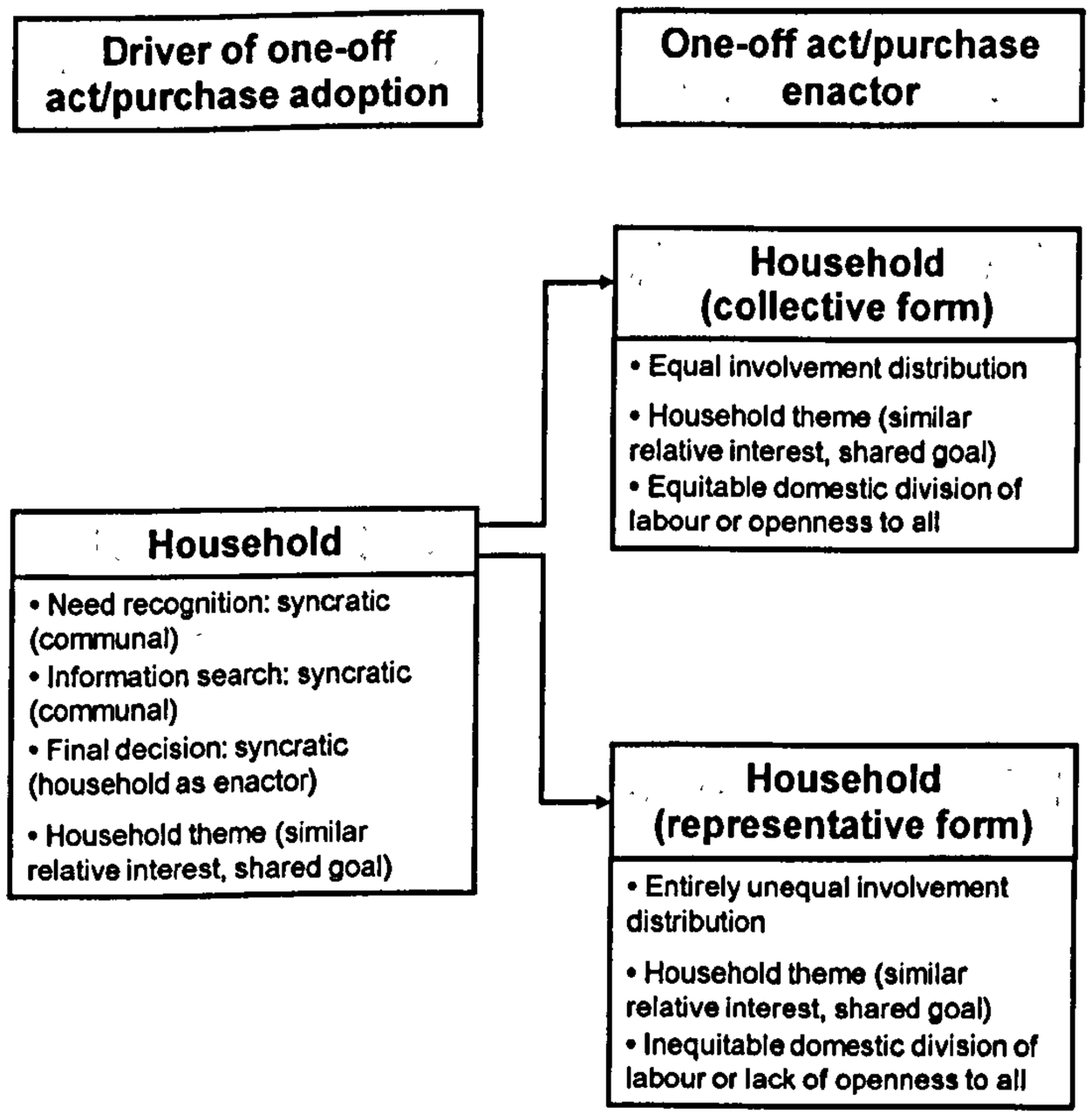
In the household to household route to wider EA practice (Figure 18), the household was the driver of EA adoption and was also the enactor/present maintainer. With repetitive EAs, the household (collective form) was the initial maintainer and this remained unchanged over time. With one-off acts/purchases, both the collective and representative form of the household as enactor was evident.

Figure 18. Household to household route to wider environmental action practice.

(a) Repetitive environmental actions



(b) One-off acts/purchases



The household to household route to wider EA practice was substantially less common than its recycling counterpart. These instances followed the change agent pattern. As such, the establishment of a household theme and recycling initiation were far removed from household formation and were prompted by household members being collectively exposed to a change agent. The change agent was information about the EA in one form or another, which served to increase the relative interest of household members. The sources of such knowledge for action included environmental literature, word of mouth, and the media, e.g. television programmes and newspapers. In some instances exposure to information was a one-off event whereas in other instances it was a more prolonged process. However, in all cases all household members initially recognised the need to participate in the EA in a collective manner and were equipped with similar levels of knowledge for action, prompted by the information. The final decision was syncratic which recognised that the household was to be the enactor/maintainer and it was through such verbal communication that the household theme was established.

There are a number of possible explanations as to why the common position pattern within the household to household route to recycling practice (household theme evident from household formation and recycling adoption associated with this time) had no counterpart in relation to wider EAs. The adoption of repeated purchases and one-off acts/purchases typically represented behaviour change, in other words these EAs were new to household members. Repeated act adoption was often associated with household formation with all household members having previous experience of the EA. However, in such instances, EA adoption appeared to be driven by individuals. This may be due to the comparatively 'thin' discussion of such EAs in contrast to the more detailed discussion of recycling, which was highlighted in chapter 3 (p.72). Thus, had wider EAs been discussed in more detail, the household to household route may have become more apparent. However, the prominence of this route in relation to recycling and absence in relation to repeated acts may be because recycling was fundamentally different to other EAs. For individuals within the household to household route, recycling was overtly environmental behaviour. In contrast, repeated acts were often more of a habit stemming from upbringing and often motivated by non-environmental motives. This issue will be returned to within discussion of the individuals to household and individuals to individuals routes to wider EA practice (p.183).

Leader to household route to wider environmental action practice

In the leader to household route to wider EA practice (Figure 19), a leader was the driver of EA adoption and the household was the EA enactor/present maintainer.

With respect to repetitive wider EAs, EA adoption was predominantly driven by a non-influential leader. Discussion about whether or not to participate in the EA in the household was generally lacking which was rooted in non-influential leaders not perceiving the EA as requiring consensus. However, the reasons underlying this perception varied. Repeated purchase initiation tended to represent behaviour change within the present household, i.e. the EA was new to the leader. Due to the domestic division of labour, whereby the leader was responsible for shopping for everyday goods, EA practice was the leader's responsibility. Given that other household members would not be required to practice the EA, and that the leader did not perceive the EA as impacting on other household members, the leader felt no need to directly involve them in the decision making process. However, EA initiation was generally accompanied by verbal influence in the form of advocation.

Repeated act initiation represented both behaviour change within the present household and the continuation of the leader's existing behaviour in a new household. Whereas not perceiving repeated purchases as requiring consensus was a conscious stance, in relation to repeated acts, individuals had not contemplated how other household members felt about the EA. Leaders did not appear to utilise verbal influence at the time of repeated act initiation but they did generally advocate the EA and/or verbally prompt EA practice *at some point* due to a household-focussed perspective. In most cases, a leader (non-influential form) was the initial maintainer but as the result of advocation/verbal prompting and continued practice, or in some cases continued practice alone, this maintainer evolved into either the collective or representative form of the household as the maintainer. The transition to the household (collective form) as the maintainer represented socialisation influence with respect to relative interest and behaviour. The transition to the household (representative form) as the maintainer, which was evident only in relation to repeated purchases, represented socialisation influence with respect to relative interest only due to an inequitable domestic division of labour.

In limited cases only in relation to repeated acts, a leader (widely influential form) was the initial maintainer. Other household members were engaged in repeated act practice due to high empathy towards the leader. This evolved into the household

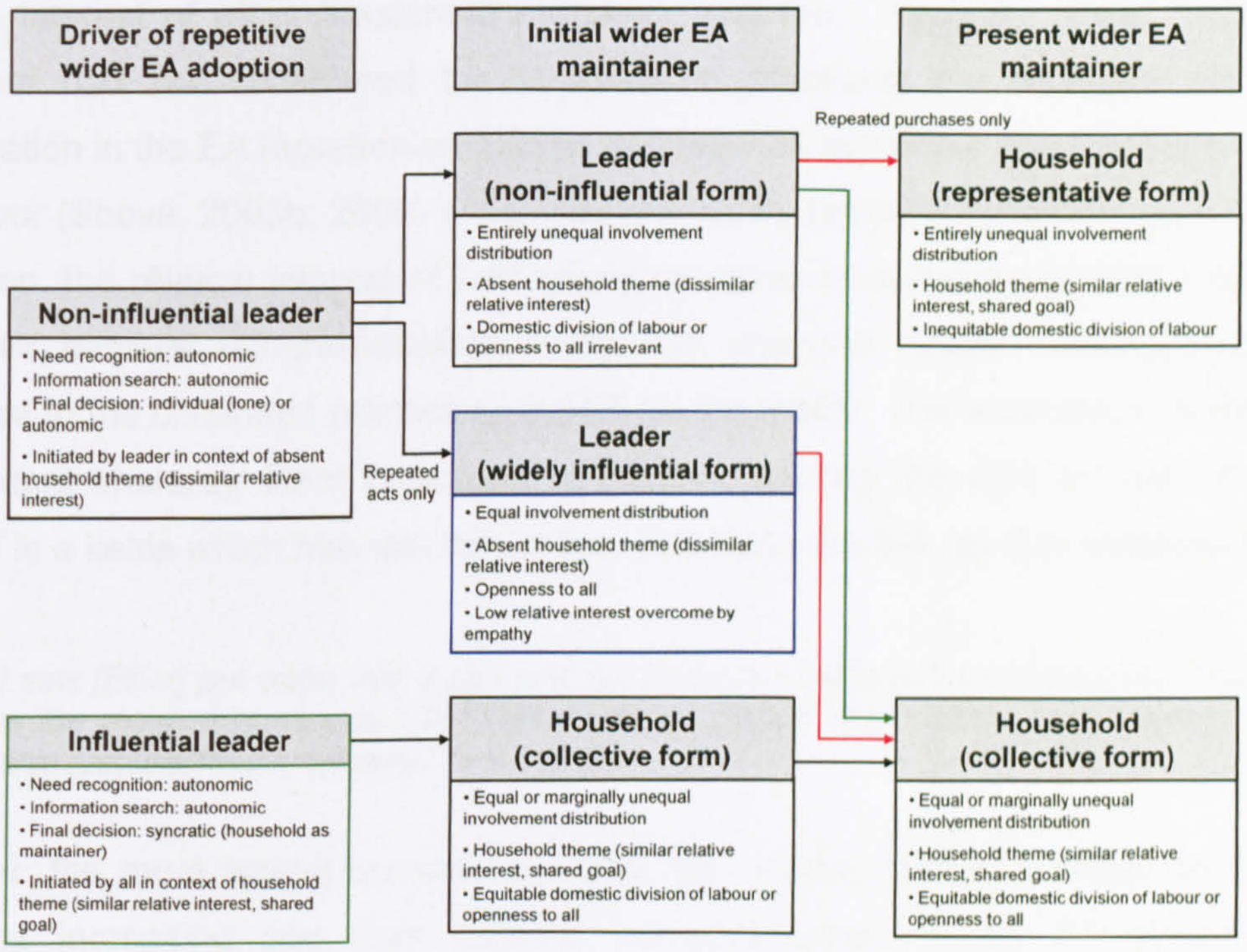
(collective form) as the present form, a transition which represented socialisation influence with respect to relative interest only; as such, other household members no longer practiced the repeated act due to empathy.

With respect to repetitive wider EAs, EA adoption was less commonly driven by an influential leader and this route was particularly rare in relation to repeated acts. The household (collective form) was the initial maintainer and this remained unchanged over time. An influential leader was also the driver of EA adoption with respect to one-off acts/purchases. The collective or representative form of the household was the enactor. Influential leaders advocated the EA to other household members as an integral part of the decision making process due to their perception of EA adoption as requiring consensus, which was underpinned by sex role orientation, the domestic division of labour, financial commitment or household member impact, as discussed in the previous chapter (p.133-5). As such, there was some discussion about whether or not to participate in the EA.

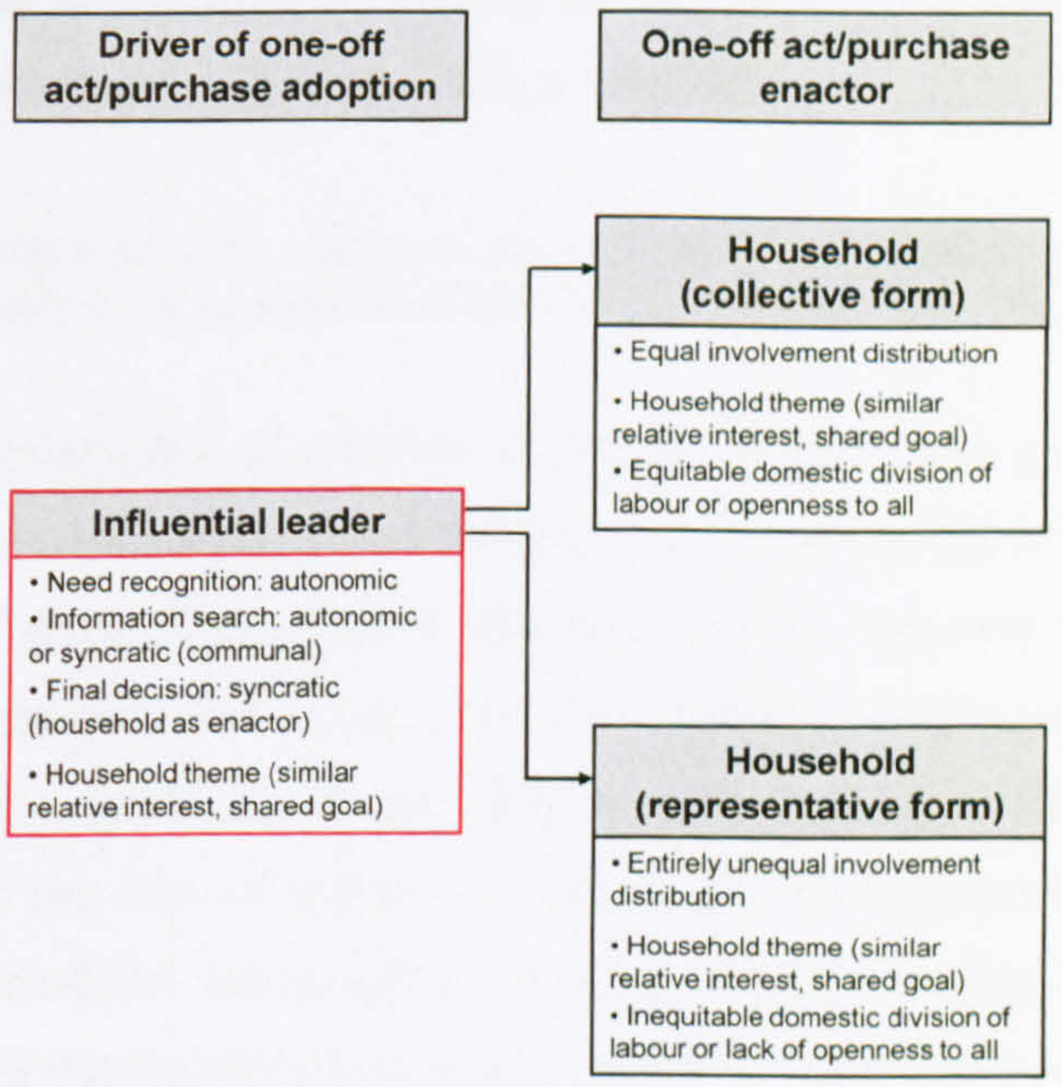
Figure 19. Leader to household route to wider environmental action practice.

Red represents socialisation influence from the leader to other household members with respect to relative interest only. Blue represents socialisation influence with respect to behaviour only. Green represents socialisation influence with respect to relative interest and behaviour.

(a) Repetitive environmental actions



(b) One-off acts/purchases



With respect to repetitive wider EAs, where the leader to household route was followed with a non-influential leader as the driver of EA adoption, the common and central issue was the socialisation influence from the leader to other household members with respect to relative interest and behaviour (unless the domestic division of labour did not favour the latter). This pattern is best illustrated in relation to repeated acts which typically involved a leader (non-influential form) as the initial maintainer evolving into the household (collective form) as the present maintainer. In the first instance, the relative interest of other household members was low. Typically, these household members had not considered the prospect of practicing the repeated act; non-participation in the EA represented routine and habitual behaviour and therefore normal behaviour (Shove, 2003b; 2006) which had previously remained unchallenged. In rare instances, the relative interest of particularly receptive household members increased and their habitual non-participation in the EA changed almost instantaneously in response to the continued practice of the EA by the leader. For example, in household 23 (student sharers), Elliot continued to practice heating the right amount of water needed in a kettle which had resulted in Guy practicing this EA, as Guy explained:

> *I saw [Elliot] put water into a cup and put it into the kettle and something just went "that is the most obvious way I can save energy"...it just made such logical sense...and it was just like "that's the way I'm doing it".*

However, the more typical scenario involved the relative interest of other household members increasing and their habitual non-participation in the EA changing in response to the leader's continued practice and advocation/verbal prompting. For example, in household 7 (family), Christopher (aged 8) demonstrated these means of socialisation influence with respect to turning the tap off when brushing teeth which had resulted in Barry practicing this EA, as Barry explained:

> *I've started doing it actually now that you do it, you're so good at doing it to be honest, I didn't do that before...if he ever sees me doing it, he says "turn the tap off".*

There were limited examples of children acting as leaders but interestingly all such instances involved the repeated act of turning the tap off when brushing teeth. The children in question were often unsure where they had acquired the knowledge for action but their parents often felt the source was likely to be school-based. Mårtensson and Pettersson (2003), Brook Lyndhurst (2004b), Woollam et al. (2006), and Ekström (2007) also reported the role of children in taking the environmental message home from school and promoting participation in EAs. Barry's comments also highlight another issue, namely that leaders (within the leader to household and leader to leader routes) tended to advocate/verbally prompt in relation to repeated acts only when

prompted to do so by witnessing inappropriate behaviour. This was linked to the normalness of repeated act practice, an issue which will be returned to later (p.186).

Leader to leader route to wider environmental action practice

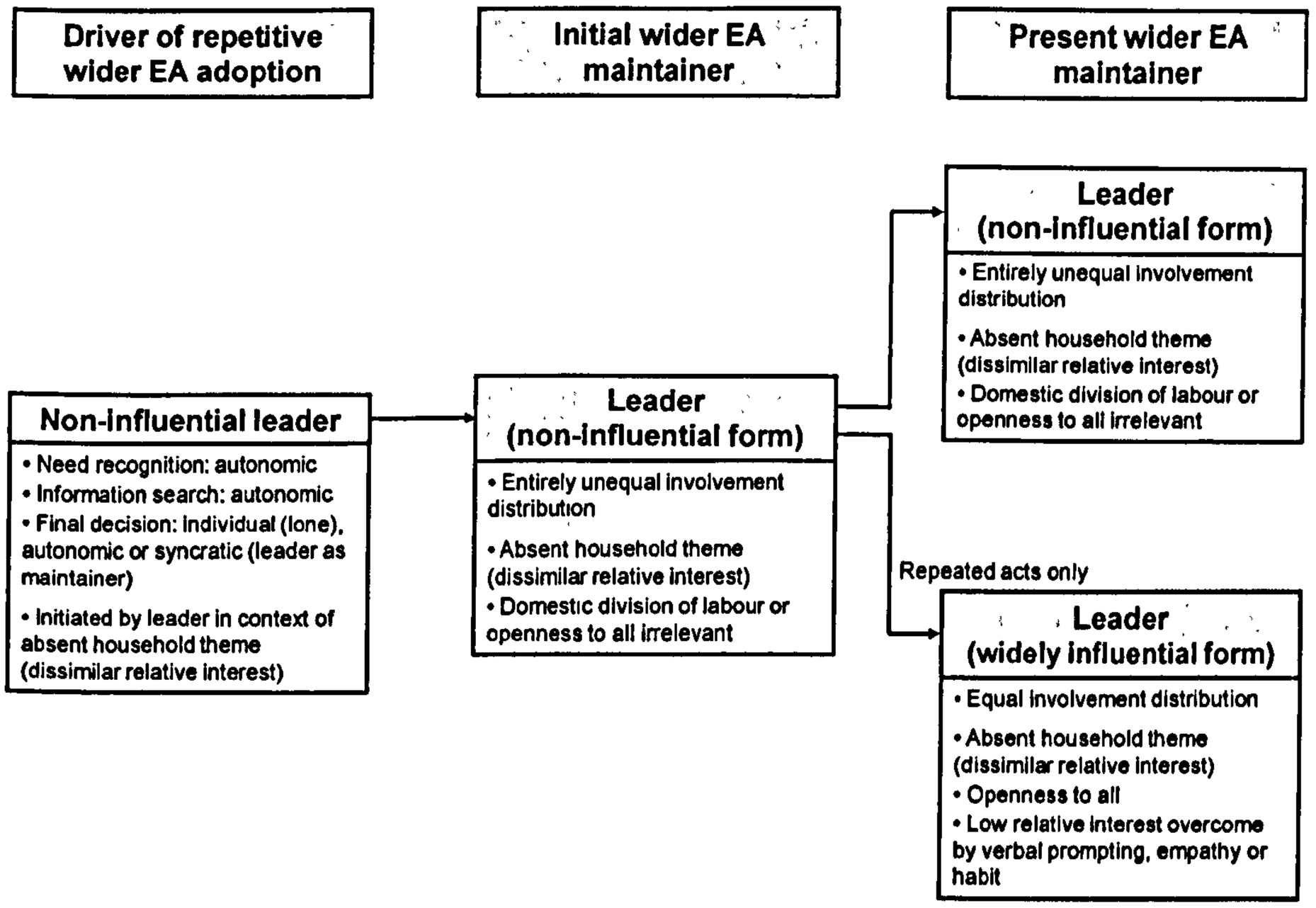
In the leader to leader route to wider EA practice (Figure 20), a non-influential leader was the driver of EA adoption and a leader was the EA enactor/present maintainer. In some instances the leader made an individual or autonomic decision. As such, discussion about whether or not to participate in the EA was lacking which was rooted in such leaders not perceiving the EA as requiring consensus. In other instances involving repeated purchases and one-off acts/purchases only, the leader perceived EA adoption as requiring consensus and thus advocated the EA to other household members as an integral part of the decision making process. Thus, there was some discussion about whether or not to participate in the EA. However, the result was a syncratic final decision that the leader would practice the EA.

With respect to repetitive EAs, a leader (non-influential form) was the initial maintainer which in some cases remained unchanged over time. In some instances, the leader advocated the EA and/or issued verbal prompting due to a household-focussed perspective on the EA, although these actions had little impact. In some instances involving repeated acts only, a leader (non-influential form) evolved into a leader (widely influential form) as the present maintainer as a result of verbal influence. This transition represented socialisation influence with respect to behaviour only.

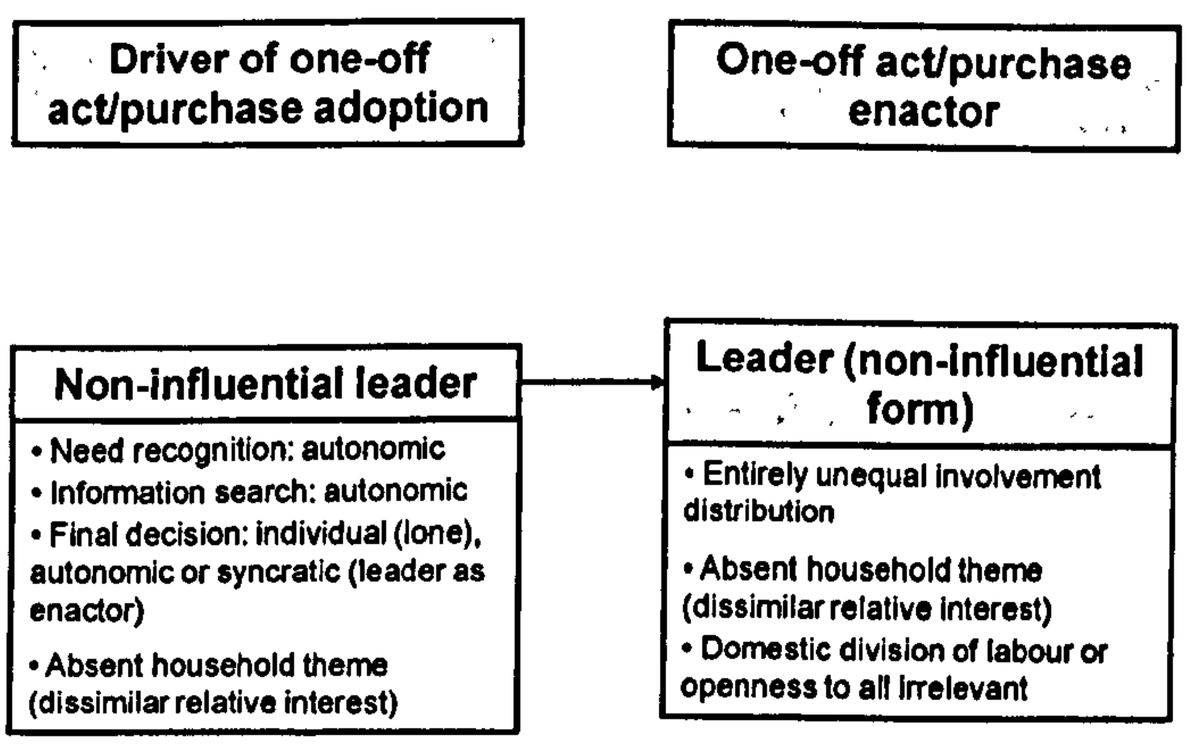
Figure 20. Leader to leader route to wider environmental action practice.

(a) Repetitive environmental actions

Blue represents socialisation influence from the leader to other household members with respect to behaviour only.



(b) One-off acts/purchases



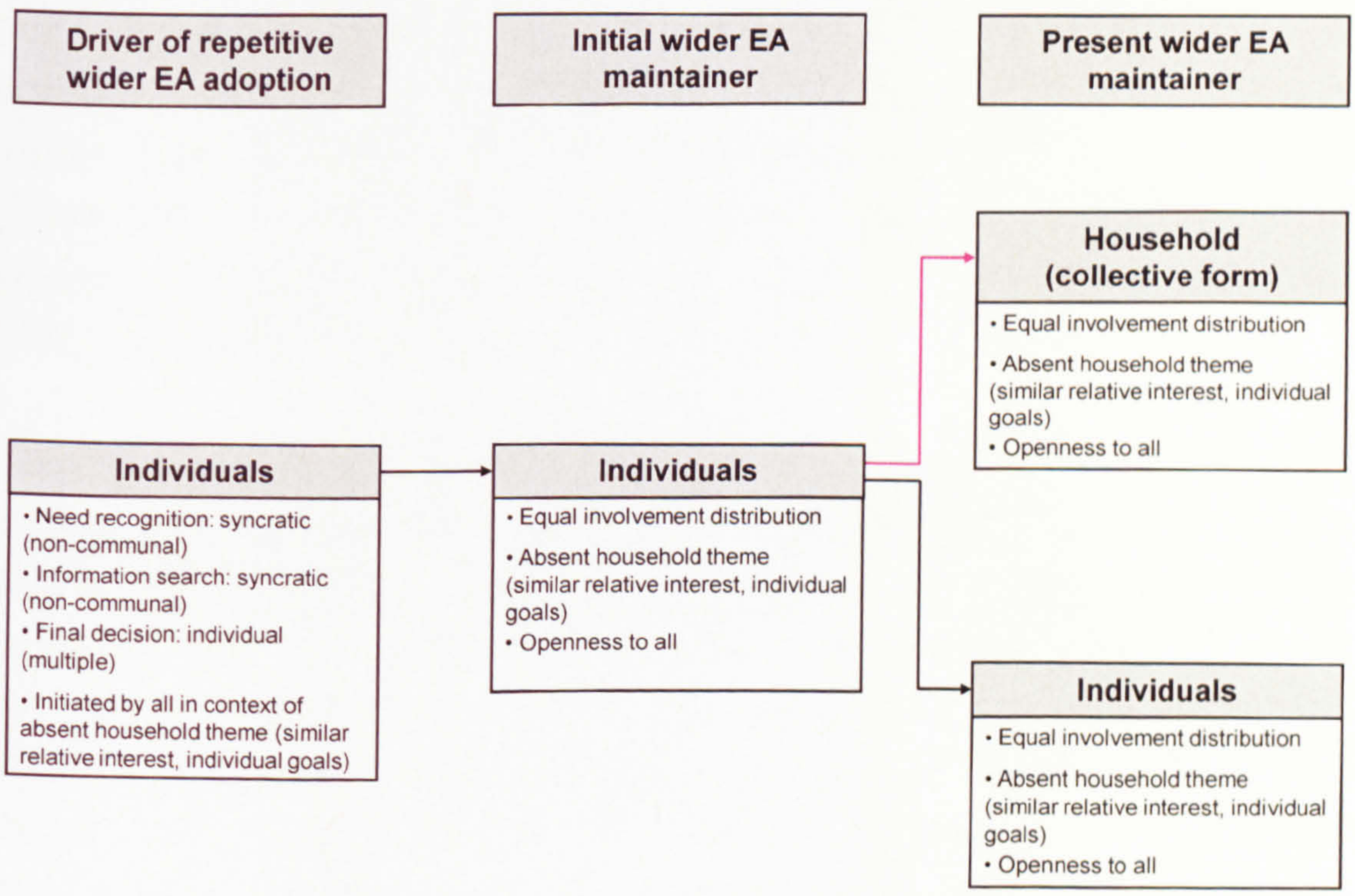
As was the case with its recycling counterpart, the leader to leader route to repetitive wider EA practice may in some cases represent the early stages of the leader to household route to wider EA practice whereby insufficient time had passed for socialisation influence with respect to relative interest and behaviour to take place.

Individuals to household and individuals to individuals routes to wider environmental action practice

The individuals to household and the individuals to individuals routes to wider EA practice (Figure 21) were evident only in relation to repeated acts. In both routes, EA adoption was driven by individuals and initially, individuals maintained the EA. In the individuals to individuals route, the initial maintainer remained unchanged over time while in the individuals to household route, the initial maintainer evolved into the household (collective form) as the present maintainer.

Figure 21. Individuals to household and individuals to individuals routes to wider environmental action practice.

Pink represents household theme development through the development of collective recognition that the EA was a shared goal.



In both routes, EA adoption was associated with household formation. Household formation represented similar individuals 'coming together' in the sense that they already practiced the EA. Household members commonly gave a dual explanation for their behaviour, citing their motives and upbringing, as illustrated by Debbie from household 12 (family):

> *I just think it's a waste and it's just how I've been brought up to turn things off and close doors as you go out of them to conserve heat and whatever.*

Many such individuals were the children of parents who had lived through World War II and/or the post-war period and participation in repeated acts was rooted in the shortage and frugality associated with this time. For many such individuals a desire to save money and/or waste aversion remained the primary motives underlying their behaviour. Similar findings were reported by Hallin (1995) within the 'Depression generation' and younger respondents whose value system emphasised thrift, and Carlsson-Kanyama et al. (2005) within the 'Second World War generation' in Sweden. Where environmental reasons were relevant they had become so at a later time, often providing a supporting motive to participate in the repeated act or in a limited number of cases, an equally important motive. The later recognition of normal thrifty behaviour as environmental in nature was also documented by Mårtensson and Pettersson (2003) in their study of Swedish households. Thus, all household members were involved in the decision making process leading to EA initiation although as multiple individuals rather than in a communal manner. Household members thus began practicing the EA in the context of the absence of a household theme whereby household members' relative interest was similar but household members did not collectively recognise that the EA was a shared goal, instead seeing the EA as an individual goal. Consequently, individuals initially maintained the EA.

The individuals to household route was characterised by the development of collective recognition that the EA was a shared goal. A further difference between the two routes was also apparent. With respect to household members' similar relative interest which was a feature of both routes, present relative interest appeared to be higher where the individuals to household route had been followed. In these instances, household members emphasised that although their behaviour was habitual in nature, it was also underpinned by strong motives. Indeed, these instances tended to be in households which exhibited a strong environmental, saving money or waste aversion ethos, an issue which will be discussed later (p.188). It appeared that the higher relative interest within the individuals to household route stemmed back to EA initiation, although this is not to say that relative interest may not have increased over time. In contrast, within

the individuals to individuals route, household members tended to dwell more on the habitual nature of their behaviour. These instances tended to be in households which lacked a strong ethos around a particular motive. Thus, it appeared that high relative interest facilitated the development of collective recognition that the EA was a shared goal. Another issue which facilitated such development was the conspicuousness of the EA. The repeated acts which followed the individuals to household route tended to be visible EAs such as turning lights off in unused rooms. In contrast, those which followed the individuals to individuals route tended to be inconspicuous EAs such as turning the tap off when brushing teeth. Indeed, household members were often not even aware of whether or not other household members practiced the EA.

Repetitive wider environmental action practice as embedded in the everyday life of households

This section focuses on the nature of repetitive wider EA practice. In a parallel fashion to recycling practice, repetitive wider EA practice was embedded in the everyday life of the household when EA practice was habitual and/or incorporated into domestic or general routines. In these circumstances, the EA was perceived as requiring minimal effort and was not perceived as additional work in terms of domestic/everyday activity. Hence, EA practice was seen as part of the normal activity of the household, i.e. embedded in everyday life. Much of the supporting evidence has been touched upon already. However, this section pulls these issues together and expands on them. The habitual and/or routinised practice of repetitive wider EAs developed gradually. As with the routinisation of recycling tasks, individuals talked about EA practice as being routinised rather than explicitly talking about how routinisation had developed. However, implicit in this discussion was that routinisation was gradual process over a period of time, as will be illustrated. Whereas the routinisation of recycling tasks had already taken place in most households, some households were 'in the middle' of the routinisation process with respect to repetitive wider EA practice, which provided further insights into this issue. The discussion will begin by examining repeated act practice before moving on to repeated purchase practice.

Repeated act practice was often described as habit, and hence part of an individual's discursive consciousness (Hobson, 2003), as illustrated by Mary from household 28 (single person):

> *I usually go into a room and switch on the light and if I'm finished in that room I switch the lights off. That's just habit for me, a routine.*

Such habitual behaviour was relevant to both individuals with high relative interest (who emphasised that their habitual behaviour was underpinned by strong motives) and individuals with low relative interest (who tended to explain their behaviour more in terms of habit). In both cases individuals were often unable to articulate much regarding EA practice. This seemed to be because there was very little to say as practicing the EA was so unproblematic. Whether implicitly or explicitly stated, the notion of 'it's just something I do' was evident. Thus, repeated act practice was simply a normal part of everyday routines, whether such routines were domestic in nature (e.g. doing the laundry which included the EAs of using the washing machine on low temperature and with full loads) or were more general in nature (e.g. moving around the home which included the EA of turning lights off in unused rooms) which was more common. Although involvement in the practice of most repeated acts was not explained by the domestic division of labour because EA practice was open to all, some individuals nonetheless discussed repeated acts as part of wider domestic activities. For example, in household 15 (couple) Roger was responsible for cleaning/tidying on a day to day basis:

> *If I find a light on [I will turn it off] but it's all part of the general sort of tidiness thing as well.*

The normalness of repeated act practice is unsurprising given that in many instances such behaviour was rooted in individuals' upbringing, thus meaning that individuals had been participating in the EA for many years. Two further issues highlight that the repeated act practice was viewed as an entirely normal part of everyday life, requiring minimal effort. Firstly, as seen earlier, within the leader to household and leader to leader routes to wider EA practice, although leaders exhibited a household-focussed perspective on the EA, they tended to advocate/verbally prompt in relation to repeated acts only when they witnessed other household members' non-participation in the EA. Non-influential drivers of recycling adoption also exhibited a household-focussed perspective on the EA. However, in contrast such leaders tended to advocate/verbally prompt at the time of recycling initiation and thus did not 'wait' to be prompted. Thus it seems that individuals do not think about the prospect of other household members not participating in a repeated act until this is clearly demonstrated. Secondly, leaders were often irritated when other household members continually failed to practice repeated acts. This irritation was associated with the motives of the leader. Thus, if a leader practiced a repeated act because they were waste averse, then when other household members behaved inappropriately, the leader was irritated by the waste. However, the leader's irritation was often heightened because they simply could not

understand why other household members did not practice the repeated act given that it involved minimal effort, as illustrated by Elliot from household 23 (student sharers):

> *It doesn't seem to me to be any more effort to wash at thirty than forty degrees or like if I see just one tee-shirt going round in a washing machine I genuinely feel like what a horrific over-expenditure of energy...*

Repeated act practice was regarded as involving conscious effort in some cases, and was hence part of an individual's practical consciousness (Hobson, 2003). For individuals with low relative interest, such active choice was dependent on EA practice being continually brought into their discursive consciousness by verbal prompting or high empathy towards the leader (which in some cases also involved the former). For individuals with high relative interest, conscious effort was evident particularly in relation to new repeated acts, as illustrated by Brenda from household 26 (single person):

> *If it's something I've been doing for a long time it's habit, it's just part of life, part of the routine, there's absolutely nothing conscious about it at all, but something that's more recent that I've decided "oh yes that's a good idea, that's something else I can do"...[that's] still deliberate conscious behaviour.*

Such conscious effort was not viewed negatively. This was particularly the case in households which exhibited a strong environmental, saving money or waste aversion ethos or were in the process of developing one (an issue which will be discussed later) (p.190). Here, household members could see that the new EA was in line with their existing position and EA repertoire and therefore was something they wanted to do.

Although a strong environmental ethos or environmental household theme will be discussed later, at this point it is pertinent to note that in these cases, environmental considerations permeated all aspects of the household's activities. When making decisions, environmental criteria were considered alongside criteria such as cost, availability and convenience. Household members demonstrated high environmental interest and were generally very knowledgeable about environmental issues and their associated EAs. Thus, thinking about environmental issues and EAs in everyday life was a constant issue for household members, as illustrated by Phil from household 9 (couple):

> *Things like saving water or not wasting food and things like that, there're not quite totally habitual, I mean they're half, they are habitual, I don't make an effort to do them but I often don't do them completely unconsciously if that makes any sense...I'm not saying they're not habitual in that I have to make a decision to do it, they're things that I do automatically but I don't do them without being conscious that I'm doing them...And that's because...they are politicised in a way...so we think about these issues and as*

> *Jane said we read The Guardian every week and that kind of thing so what we buy...and turning off lights and being annoyed in the office when other people don't turn off the lights are all very conscious things because I suppose we think about those kind of issues quite a lot anyway.*

When households which exhibited an environmental household theme picked up on information about a new EA, if it was something they could do they then participated in the EA. Thus, a willingness to modify their existing practices in the light of new information was evident. Households which exhibited an environmental household theme tended to see more EAs as 'doable' in comparison to households without such a household theme. That is not to say that every EA was seen as 'doable'. For example, with respect to installing a solar power system the response from households was largely uniform regardless of whether or not the household exhibited an environmental household theme – the financial commitment was prohibitive (Faiers and Neame, 2006). Rather, this issue is more readily illustrated in reference to repeated purchases.

Individuals who were physically involved in repeated purchase practice typically discussed such EAs as part of the wider domestic activity of shopping for everyday goods. Furthermore, the distribution of involvement in repeated purchase practice was underpinned by the domestic division of labour with respect to responsibility for such shopping. Thus, the practice of repeated purchases was incorporated into domestic routines. Two types of routine were evident. Households which participated in particular repeated purchases but did not exhibit an environmental household theme tended to make these purchases while supermarket shopping. In other words, these EAs were incorporated into an existing domestic routine of the household. Across households, focus group discussion regarding repeated purchases commonly included references to cost and availability in one form or another. In these households the issue of availability was directly related to the supermarket providing the appropriate choice. Where the supermarket did so, the EA practice was viewed as requiring minimal effort. For example, Trevor from household 20 (family) described buying products made from recycled materials when faced with *"an obvious choice"*. However, where the supermarket did not facilitate participation in a repeated purchase, for example avoiding products with excess packaging, the EA was not perceived as being 'doable'. There was little recognition that fruit and vegetables without excess packaging and locally produced food could be purchased from local greengrocers and/or specialist shops. It should be noted that these households were not always ideally located in relation to such shops. Nonetheless, these households were often put off by having to 'go out of their way' to use these shops, thus indicating that they perceived the repeated purchase as additional work in terms of their domestic activity.

In a similar fashion, Weatherell et al. (2003) reported that for the majority of consumers the 'right place' to buy locally produced food was supermarkets.

In contrast, households with an environmental household theme tended to make their repeated purchases at local greengrocers and/or specialist shops to a greater or lesser extent. These households were generally well located in relation to these shops. However, the indications that EA practice required minimal effort appeared to be largely related to the issue of routine. As such, these households had developed routines around shopping at the local greengrocer and/or specialist shop. There had generally been some discussion about this issue. In a similar fashion to recycling, how to organise the repeated purchase practice was generally not an issue which households recognised as a point of discussion. Households that had discussed this issue tended to exhibit very high interest in the repeated purchase which tended to be households with an environmental household theme. In most instances trips to these shops were incorporated into other routines such as the journey home from work or piggy-backed on to other trips. These shopping routines were generally in addition to the supermarket shopping routines. However, there was no indication that having multiple shopping routines as opposed to just one was viewed as additional work. As such, these routines were simply part of normal everyday life. Thus, whether or not an EA was perceived as being 'doable' appears to be related to whether the household was willing to create new shopping routines in addition to their existing ones. When such routines were in place, EA practice was not regarded as a chore. Indeed, a few households had recently begun participating in a repeated purchase EA which involved using their local greengrocer and/or specialist shop and common to their discussions was the need to get into a routine, as illustrated by Raj from household 24 (family). This household had recently begun to shop at a local greengrocer in order to avoid the packaging associated with supermarket fruit and vegetables:

> *...There's a local grocer up there...but it is lifestyle that gets in the way cos you have to change your habits and say we'll just buy those bits there and the rest of the stuff [in the supermarket], we tried it this week, [Sally] did a bit in [the supermarket], a bit there and then you forget bits from it don't you, and it's like how do we get into a routine where [we can do this]?*

This point marks the end of the examination of the adoption and practice of lone EAs in households. The discussion now turns to patterns of adoption and practice across EA repertoires.

Patterns of motives underpinning environmental action repertoires

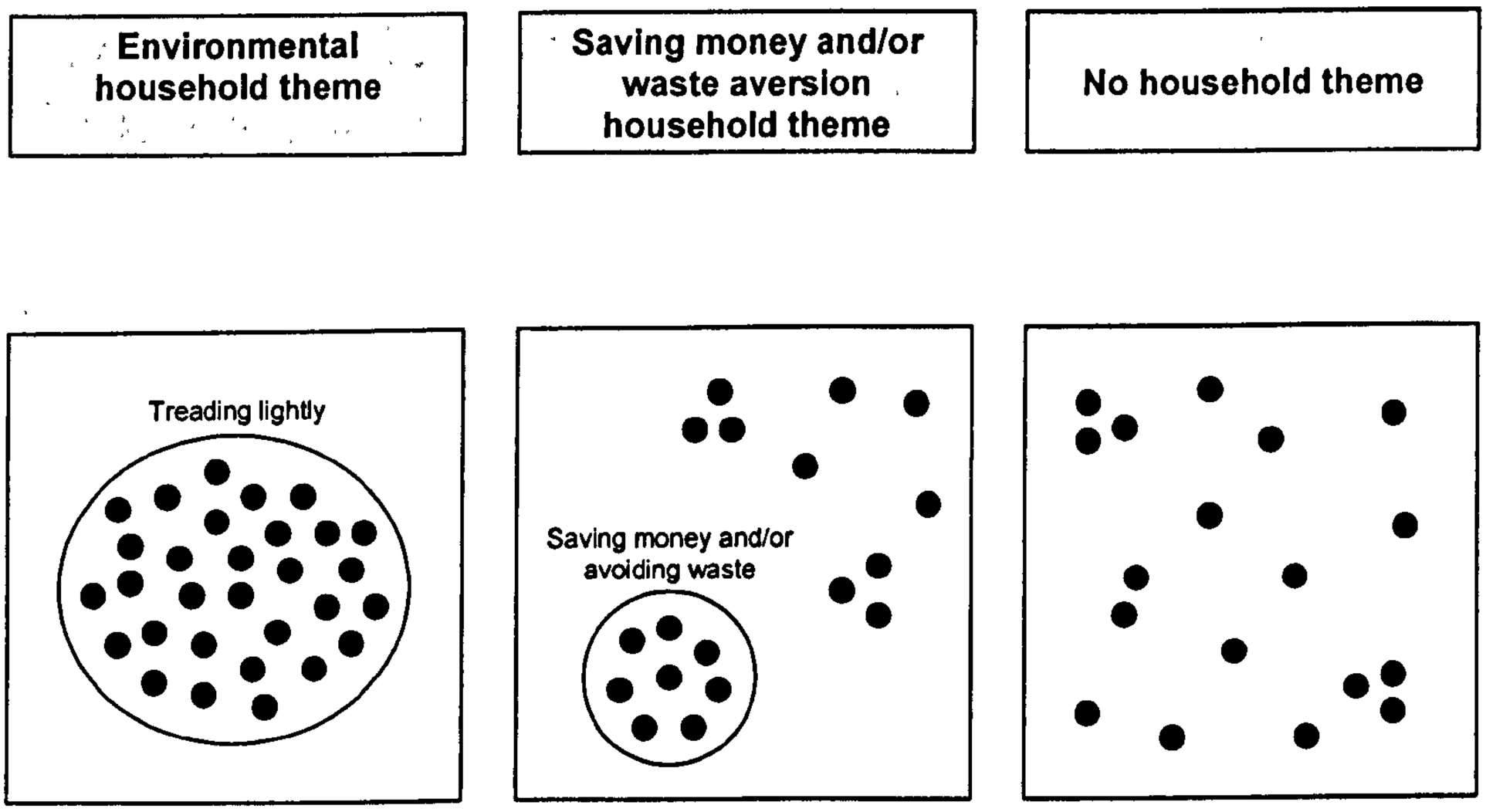
Households lay along a spectrum in terms of their EA repertoires, i.e. the collection of EAs evident in the household. At the higher end of the spectrum were households with comprehensive EA repertoires encompassing recycling/composting (typically medium or higher level recycling), repeated acts, repeated purchases and one-off acts/purchases across the sectors of waste management, energy conservation, transport behaviour, water conservation and green consumerism. However, even these households did not participate in *all* EAs. At the lower end of the spectrum were households with limited EA repertoires, typically largely restricted to recycling/composting (with a leaning towards lower level recycling) and energy conservation repeated acts.

With respect to the middle ground of the spectrum, in addition to recycling/composting (generally medium or higher level recycling), wider EAs were peppered across the five sectors representing repeated acts, repeated purchases and one-off acts/purchases. However, the EA repertoire was much less comprehensive than households at the top end of the spectrum. In order to paint a picture of these households it is helpful to view the peppered nature of the EA repertoires as 'inconsistent'. For example, it was often the case that some repeated acts were evident while others were absent and/or some energy conservation EAs were evident while others were not. Generally, the recycling repertoire provided an indication of the EA repertoire. Therefore, it was rare for a medium or higher level household to engage in few wider EAs and similarly it was rare for a household with a comprehensive EA repertoire to exhibit lower level recycling.

Participation in lone EAs was commonly underpinned by multiple motives, which was particularly the case with wider EAs. Across activity types such motives represented environmental reasons, waste aversion, saving money, gardening-related benefits, and health benefits. In some households the same primary motive was shared by household members and underpinned participation in a number of EAs to the extent that the household exhibited an ethos, or a motivational household theme. The presence of a motivational household theme was similar to the presence of an EA household theme, but was orientated around a motive as opposed to an EA. Three types of motivational household theme were evident, broadly aligned to the three general types of motives – environmental, waste aversion and saving money – along with no motivational household theme whereby different EAs were underpinned by different motives, which was the more common position (Figure 22). These positions

were also displayed by single person households and lone individuals in multi-person households.

Figure 22. Patterns of motives underpinning environmental action repertoires. Each dot represents an environmental action.



The three patterns of motives underpinning EA repertoires will now be outlined. An environmental household theme was characterised by household members exhibiting similar high relative interest in minimising the environmental impact of the household's activities wherever possible, and collective recognition that this orientation was a shared goal. An environmental household theme can thus be likened to a 'tread lightly' ethos. The most comprehensive EA repertoires were exhibited by households with an environmental household theme. Households with an environmental household theme tended to lie at the higher end of the spectrum of EA repertoires, although EA repertoires in the middle ground were also evident. The vast majority of EAs were primarily motivated by environmental reasons with a strong feeling of personal norm (moral obligation) to act (Schwartz, 1977). However, this is not to say that saving money, avoiding waste or health benefits were not also valued. Thus, environmental considerations permeated the vast majority of the household's activities. When making decisions, environmental criteria were considered alongside non-environmental criteria.

Decisions were generally made in favour of the environmental criteria, hence the comprehensive EA repertoire. However, in these instances it was not the case that the household members were reluctantly paying more or inconveniencing themselves for the sake of their principles. Indeed, the EAs evident in the household were viewed as 'doable'. Where EAs were 'missing' from the repertoire, these represented instances where decisions had been made in favour of non-environmental criteria such as cost or convenience, or environmental criteria had not been considered at all. However, behaving in an environmentally responsible way remained central to how the household lived. Household members saw the links between the EAs in the repertoire, i.e. they all fell under the umbrella of living in an environmentally responsible way.

An environmental household theme has parallels with the generalised pattern of participation in EAs (i.e. underpinned by a general environmental stance) at the individual level (McDonald et al., 2006; Thøgersen and Ölander, 2006). Further similarities with McDonald et al.'s (2006) type of green consumers known as Exceptors include comfortable engagement with personal sacrifice, alternative products and outlets, and at least one aspect of their lives in which mainstream consumerism was embraced which was accompanied by a specific justification and therefore no marked feeling of discomfort, as illustrated by household 9 (couple):

PHIL
We do not avoid travelling by plane and it's our real weak point on the environmental front. We probably stuff every single other environmentally friendly thing that we do by not being careful about plane travel.

JANE
...Well some of that for Phil is work um, he's an academic going to conferences and for me my father lives in the north west corner of Ireland and my sister lives in Switzerland so if I want to see my family inevitably I have to travel by plane if it's going to fit in with holidays...Well when I was a student I used to travel on the train and the ferry and it was an absolute nightmare so now I just fly.

PHIL
But we do do sometimes two or three holidays a year that we fly to rather than going on holiday in Britain or something like that so we're...guiltily conscious of it but we don't do anything about it.

Households which exhibited an environmental household theme were also similar to Exceptors in terms of their change-seeking behaviour and from where and how they acquired knowledge for action. Thus, household members actively looked out for information about how to minimise their environmental impact. This is not to say that all knowledge for action was acquired actively. Some knowledge for action was acquired in a passive manner, but household members were positioned to come across this information. For example, information about new EAs was picked up from the literature of environmental organisations of which households were often a member

of and by word of mouth through social networks of like-minded people. Individuals were comfortable with researching their options with respect to EAs using specialist sources such as Ethical Consumer magazine, e.g. investigating green electricity tariffs and the most energy efficient appliances.

EA participation in a broad sense was only a normal topic of conversation in households which exhibited an environmental household theme. Information about new or existing EAs picked up by one household member was reported back to other household members, as will be returned to during discussion of EA repertoire development (p.198). Given that discussion of how to go about practicing a particular EA was associated with very high relative interest, such discussion across the EA repertoire was most prominent in households with an environmental household theme.

A saving money household theme was characterised by household members exhibiting similar high relative interest in reducing unnecessary spending on gas/electricity, and collective recognition that this orientation was a shared goal. A saving money household theme can thus be likened to an ethos of thriftiness. This often went hand in hand with a waste aversion household theme which was focused around avoiding domestic waste and/or the waste of energy. Households which exhibited one or both of these motivational household themes tended to lie in the middle ground of the EA repertoire spectrum, although EA repertoires towards the lower end of the spectrum were also evident. While relevant EAs were motivated by saving money and/or a dislike of waste, other EAs in the repertoire were underpinned by different motives such as environmental or health reasons. Household members thus saw the links between the EAs in the repertoire when they fell under the umbrella of their household theme. Where household members saw the links between EAs outside of the household theme, this tended to be restricted to pockets of EAs. Households which exhibited a saving money and/or waste aversion household theme have some resonance with another of McDonald et al.'s (2006) three types of green consumer, namely Selectors, in the sense that they are mainly motivated by a single issue such as energy conservation.

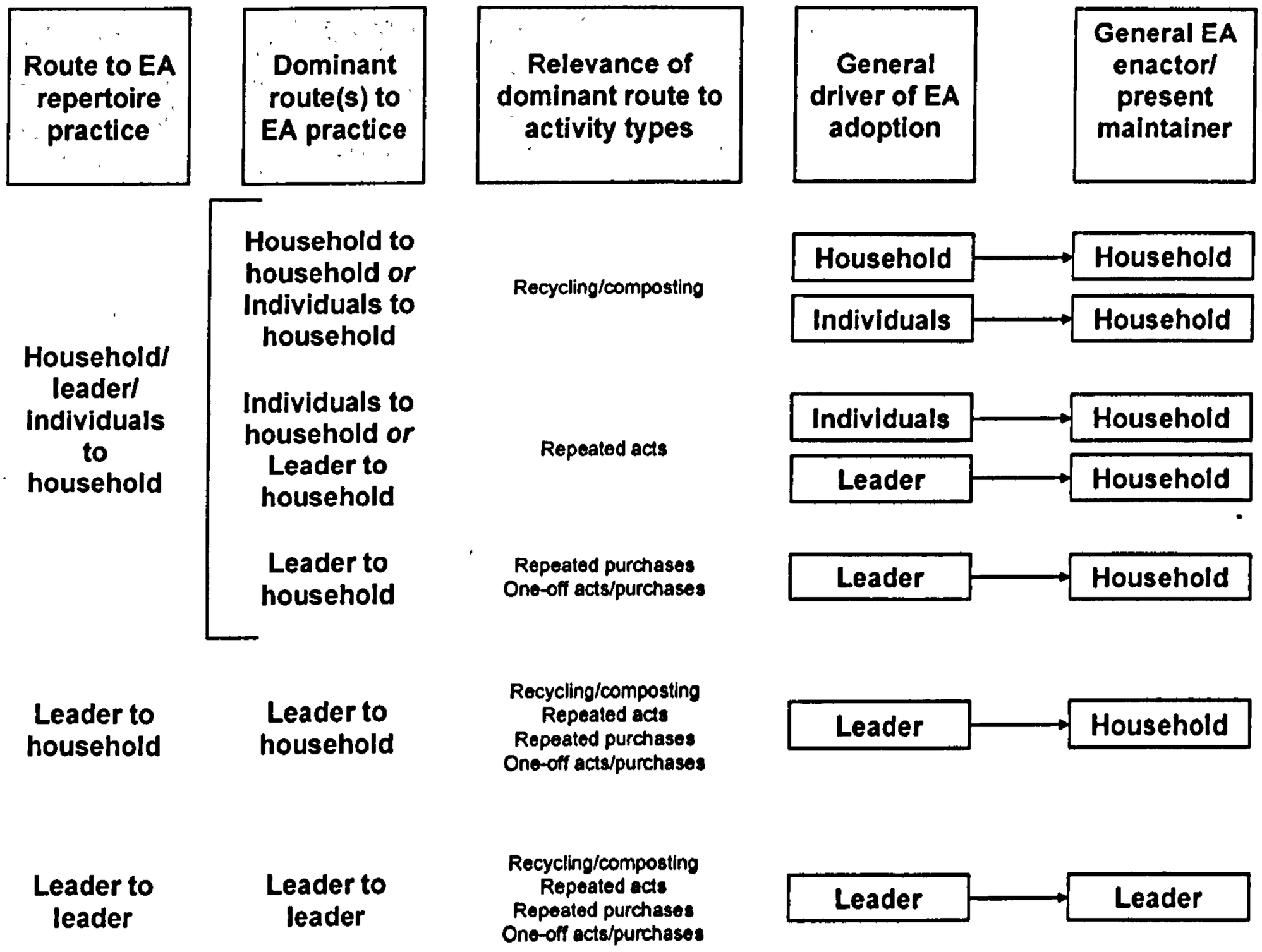
Where households did not exhibit a motivational household theme, different EAs were underpinned by different motives. Thus, it was often the case that some EAs were motivated by environmental reasons, some by saving money, some by waste aversion, and others by health benefits. That is not to say that household members did not see the links between EAs, but this tended to be restricted to pockets of EAs. Households which exhibited no motivational household theme tended to lie in the middle ground of

the EA repertoire spectrum, although EA repertoires towards the lower end of the spectrum were also evident. No motivational household theme has parallels with the action by action pattern of participation in EAs (i.e. EA participation decided by the specificities of each EA and situation with the lack of any consumption philosophy) at the individual level (Thøgersen, 2004; McDonald et al., 2006). There were also further similarities with the last of McDonald et al.'s (2006) types of green consumer, namely Translators, in terms of the nature of behaviour change and from where and how knowledge for action was sourced. As such, knowledge for action about EAs tended to be gathered from a range of sources and on the whole was acquired passively. This issue will be returned to during discussion of EA repertoire development (p.202).

Routes to environmental action repertoire practice

When an EA repertoire was considered, it was generally the case that although a range of routes to EA practice were followed, one or a few routes dominated. As such, three routes to EA repertoire practice were evident (Figure 23). In addition to representing the dominant route(s) to EA practice across the EA repertoire, each route to EA repertoire practice represents the general driver of EA adoption and the general EA enactor/present maintainer across the EA repertoire. The routes to EA repertoire practice were evident across the different patterns of motives underpinning EA repertoires.

Figure 23. Routes to environmental action repertoire practice.



The three routes to EA repertoire practice will now be outlined, along with consideration of the influence of the inter-related factors of sex role orientation and the domestic division of labour with respect to work by Carlsson-Kanyama and Lindén (2007) and Grønhøj and Ölander (2007).

In the household/leader/individuals to household route to EA repertoire practice three routes to EA practice were dominant – household to household, leader to household and individuals to household. This route to EA repertoire practice was the most heterogeneous. Recycling/composting either followed the household to household or individuals to household route. Repeated acts generally followed the individuals to household or leader to household route. Repeated purchases and one-off acts/purchases generally followed the leader to household route. However, different individuals acted as the leader in relation to different EAs. Thus, in this route to EA repertoire practice, the household was the general EA enactor/present maintainer across the EA repertoire. Although there was not one general driver of EA adoption across the EA repertoire, because EA adoption was generally driven by individuals, the household and different leaders, from a holistic perspective, no single individual played a key role in EA repertoire development. As such, this route represents all individuals

being generally responsible for EA adoption and practice across the EA repertoire in a shared role. Some households which followed this route exhibited a motivational household theme which was typically evident from household formation. As such, no single individual played a key role in the development of the household theme.

With respect to the household as the general EA enactor/present maintainer across the EA repertoire, the distribution of involvement of spouses in EA practice was equal due to an equitable domestic division of labour at the level of responsibility for the specific domestic task which encompassed the EA. Furthermore, the domestic division of labour was broadly equitable with all different kinds of household tasks (e.g. cleaning/clothes care, shopping, gardening, DIY) being shared activities. This was underpinned by a modern sex role orientation. In a similar fashion, although the male and female spouses had acted as the leader in relation to the adoption of different EAs, this was due to the leader exhibiting greater relative interest, as opposed to the EA also lying within the leader's exclusive domain of responsibility. Thus, all individuals being generally responsible for EA adoption and practice across the EA repertoire in a shared role, was generally relevant at the level of each EA. This is in contrast to Carlsson-Kanyama and Lindén (2007) and Grønhøj and Ölander (2007) who suggest that where all individuals were generally responsible for EA adoption and practice across the EA repertoire in a shared role, this may take the form of male and female spouses taking responsibility for different EAs along traditional sex roles/domestic division of labour lines.

In the leader to household route to EA repertoire practice, one route was dominant – the leader to household route to EA practice. In contrast to the household/leader/individuals to household route to EA repertoire, the leader was the same individual across the EA repertoire. Thus, in the leader to household route to EA repertoire practice, a leader was the general driver of EA adoption and the household was the general EA enactor/present maintainer across the EA repertoire. As such, from a holistic perspective one household member played a key role in EA repertoire development. This individual can be regarded as the household EA officer with respect to EA repertoire development. Some households which followed this route exhibited a motivational household theme and the household EA officer was also the driver of the development of the household theme.

In the leader to leader route to EA repertoire practice, one route was dominant – the leader to leader route to EA practice. In a similar fashion to households which followed the leader to household route to EA repertoire practice, the leader was the same

individual across the EA repertoire. Thus, in the leader to leader route to EA repertoire practice, a leader was the general driver of EA adoption and a leader was the general EA enactor/present maintainer across the EA repertoire. As such, from a holistic perspective one household member played a key role in EA repertoire development and the practice of EAs. This individual can be regarded as the household EA officer with respect to EA repertoire development and practice. Although households which followed the leader to leader route to EA repertoire practice did not exhibit a motivational household theme, some leaders exhibited an environmental, saving money and/or waste aversion orientation. Some of these households may in some cases represent the early stages of the leader to household route to EA repertoire practice. While all households which followed the leader to household route to EA repertoire practice were longstanding households, some households which followed the leader to leader route to EA repertoire practice represented relatively newly formed households thus limiting the time for the socialisation influence from the leader to the other household members to take hold with respect to each repetitive EA.

Households which exhibited what Grønhøj and Ölander (2007, p.227) referred to as *"gender based inside-outside division of household responsibilities"* whereby females took on roles relating to housework and males took on roles relating to gardening and DIY, tended to follow the leader to household or the leader to leader route to EA repertoire practice. The female spouse was the household EA officer either with respect to EA repertoire development or EA repertoire development and practice, and very rarely drove the adoption of an EA which was outside their domain of responsibility. This supports Grønhøj and Ölander's (2007, p.231) position that *"the assignment of gender roles to oneself or to a partner often works to frame the possible range of action, and thereby the domain of responsibility"*. Whether male or female, household EA officers had generally fallen into the role although in some cases the EA officer had consciously assigned themselves this role in a self-appointed manner with the aim of 'greening the household'. Although other household members were aware that the EA repertoire was attributed to the household EA officer, they did not look to this individual to introduce new EAs.

Development of the environmental action repertoire as a gradual process

EA repertoires developed gradually rather than in one step. The development of EA repertoires followed a similar pattern in all households. When EAs were first evident in the household or when an individual first began participating in EAs prior to household

formation, the repertoire was comparatively limited. Subsequently, at different times, further EAs were added to the repertoire. As such, the EA repertoire was expanded EA by EA at specific points. Three constituent patterns were evident – 'opportunity dependent', 'virtuous circle', and 'haphazard'. These patterns were evident across the three routes to EA repertoire practice and in single person households.

Opportunity dependent

The opportunity dependent pattern of EA repertoire development was characterised by the establishment of a personal philosophy of trying to minimise environmental impact, prior to the adoption of the majority of EAs. As such, EA repertoire development was primarily related to opportunities to participate in new EAs. Most households which exhibited an environmental household theme also exhibited the opportunity dependent pattern of EA repertoire development. Here, the environmental household theme was typically longstanding and evident from household formation. All individuals shared similar backgrounds. In general, repeated acts had generally been a normal part of everyday life from childhood due to their frugal upbringing. In most instances, individuals also had experience of recycling in the parental home. As a teenager or young adult, most individuals had developed a strong interest in environmental issues. This interest generally did not come directly from their parents although individuals commonly discussed their frugal upbringing as an issue of relevance. Rather, individuals had responded to the public debate on environmental issues (Mårtensson and Pettersson, 2003) in a transformative experience (Maiteny, 2002). This generally took the form reading some form of environmental literature such as a leaflet from Friends of the Earth, or books about environmental issues, as illustrated by Karen from household 10 (homeowner/lodger):

> *I remember getting a book in my mid-twenties which was about how to live a greener lifestyle or something, you know things you can do to cut down on energy use...That had quite a big impact on me, it's a very well written book.*

This had led to them joining environmental organisations and actively reading about environmental issues, a practice which remained to this day.

Household formation in households which followed the household/leader/individuals to household route to EA repertoire practice thus represented similar individuals 'coming together'. Indeed, household formation was often partly attributed to these similarities. As such, recycling generally followed the household to household route to recycling practice, many repeated acts followed the individuals to household route to EA practice and an environmental household theme was evident from household formation,

although that is not to say that it did not get even stronger over time. Some other EAs were often evident from household formation as a result of discussions about how the environmental impact of the household could be reduced. However, it was often the case that household members advocated for certain EAs depending on their own particular enthusiasms although it did not appear that other household members needed much persuasion. The addition of EAs to the repertoire followed a common pattern, as illustrated by Howard from household 10 (homeowner/lodger):

> *I've been basically a deep green since I was in my mid-teens and so I've been actively looking out for information on how to live a green lifestyle and so as things have become available...I've become aware of it...and then done it.*

As noted earlier, households which exhibited an environmental household theme often acquired knowledge for action from environmental organisation literature and by word of mouth through social networks of like-minded people. When a household member picked up on such information they reported it back to other household members, often advocating for it in the process and thus acting as a leader. In most cases, other household members appeared to require little persuasion as their low relative interest was mainly due to a lack of knowledge for action regarding the EA.

Although individuals often inferred that becoming aware about an EA was followed by EA adoption and practice, this was not always immediate for various reasons. Firstly, personal circumstances did not always allow immediate action. For example, one-off acts/purchases such as installing insulation were only actionable with home ownership. Secondly, products such as environmentally friendly cleaning products were not always readily available to purchase. And lastly, even households/individuals with an environmental household theme/orientation were not immune from the problem of 'getting round to it'.

In the vast majority of households which exhibited an environmental household theme and the opportunity dependent pattern of EA repertoire development, the household theme had been established many years ago. The message from these households was that their EA repertoire had only been constrained historically by factors which were largely external to them such as not owning their own home or products not being available. An alternative and interesting perspective on the opportunity dependent pattern of EA repertoire development was presented by Elliot from household 23 (student sharers), as his environmental orientation was a much more recent development. Elliot's transformative experience involved reading an article in The Independent newspaper about the state of the planet which shocked him so much that

it *"jump started"* him into changing his behaviour and trying to change the behaviour of his household (Elliot consciously assigned himself the role of household EA officer in a self-appointed manner). However, Elliot indicated that even with his new-found commitment to reducing his environmental impact, it was just not possible to change all his existing practices at once. This was partly attributed to being 'held back' by external factors but also attributed to many practices being so engrained in his life that it was too difficult to initiate widespread and complete change in one go. Scott talked about how he viewed it as hypocritical of someone (possibly Elliot) to recycle paper but then drive ten miles over the speed limit, to which Elliot responded:

> *...All of us [in Western society] live in a way that's totally unsustainable at the moment...and there's no way you can change that like that ((CLICKS FINGERS)), you have to change it gradually...so you have to start making some changes and then when they're in place you can then start making further changes and it's a continual process...it's not hypocritical recycling paper and then driving at ten miles an hour over the speed limit if you're in a process of trying to get better in every way, so once you're recycling paper and thinking about it you're then consciously trying to lower your speed or like I'm doing consciously not using my car at all.*

Thus, Elliot *"aimed to get better everyday"* across a range of EAs. Household 23 followed the leader to leader route to EA repertoire practice. It is interesting to note that the other household members indicated that as they saw Elliot's practices becoming more consistent, particularly the fact that he had stopped using his car, they were more positive about changing their own behaviour.

Virtuous circle

The virtuous circle pattern of EA repertoire development, which was only evident in a limited number of households, was characterised by participation in one EA leading to participation in another EA and so forth, a pattern recognised at the individual level by Thøgersen and Ölander (2003). In most instances an environmental household theme was generally rooted in some kind of transformative experience relating to the public debate about environmental problems and subsequently associated with the opportunity dependent pattern of EA repertoire development. However, in some instances, an environmental household theme had developed gradually hand in hand with virtuous circle EA repertoire development. An environmental household theme was not necessarily evident in households which exhibited the virtuous circle pattern of EA repertoire development, although this is not to say that an environmental household theme was unlikely to develop over time.

Individuals did not perceive themselves to be doing anything overtly environmental until recycling initiation. Some individuals participated in repeated acts prior to this but

these were not viewed as environmental acts, just a normal part of everyday life attributed to their upbringing. Recycling often represented a new EA for all household members and could be attributed to relatively narrow reasons in the sense that individuals were interested in recycling in isolation, not recycling as an element of a 'green lifestyle' as with individuals following the opportunity dependent pattern. However, an interest in recycling then grew, as illustrated by Sally from household 24 (family):

> *...You start interacting with people who when they know that you're a recycler will then have conversations with you about the earth...and so when people are then talking about that stuff I wanted to understand it more and have answers about it which was why I started reading books and stuff like that, so I think it was really that sort of sense of once I'd got bothered I wanted to know more and more you know and I think that's become more and more the case...you know well now I'm recycling, the next question is "what's the impact of this?" and the more I do this, the next question is "what's the impact of that" and so I think...once you get into that...cycle it's just got more and more in depth...once you're in on that kind of cycle I think you're kind of hooked into it then and you either choose to say "no I'm staying like this and that's it, you're not gonna get me to do anything else" but then why are you recycling?*

Sally's quote illustrates that individuals actively read into the public debate about environmental problems and related EAs. This was also the case in the opportunity dependent pattern discussed above but in contrast, an interest in becoming better informed about environmental issues and EAs resulted from participation in EAs rather than participation in EAs coming after becoming better informed. Moving on to other EAs did not always directly relate to seeking information. For example, avoiding buying products with excess packaging sometimes stemmed from being more conscious about what was going in the bin as a result of higher level recycling. Sally's quote also highlights the undesirable feeling of inconsistency generated when individuals became better informed about other EAs which were also open to them. Indeed, cognitive dissonance has been invoked by Thøgersen and Ölander (2003) and Thøgersen (2004) as a factor explaining the spill over of EAs in a virtuous circle and shaping individuals' EA repertoires.

Sally's virtuous circle had culminated in household 24 now exhibiting an environmental household theme. This household was an example of a household which followed the leader to household route to EA repertoire practice and as such, EAs tended to follow the leader to household route to EA practice. Sally was the household EA officer with respect to EA repertoire development and she had also driven the development of the environmental household theme. Although it was Sally who actively looked for information she was also taking Raj through the learning process by advocating for new EAs and generally advocating a way of life which took environmental impact into account. Although Sally continued to act as a leader on most EAs, over time, the

extent to which Sally had to lead was greatly reduced. For example, Sally initiated recycling and eventually Raj *"bought into it"*. In contrast, most recently both Sally and Raj had been researching new EAs such as converting their car to run on LPG and installing solar panels.

Haphazard

The haphazard pattern of EA repertoire development was characterised by the addition of each EA to the repertoire having its own explanation. In households with a waste aversion/saving money household theme, the motivational household theme was evident from household formation and was attributed to similar upbringings which emphasised thrift. These households tended to follow the haphazard pattern of EA repertoire development with respect to EAs other than the repeated acts they brought with them as normal behaviour when the household formed. However, the haphazard pattern was most prominent in households with no motivational household theme, and is best explained through an illustrative example.

Household 8 (couple) followed the leader to leader route to EA repertoire practice. As such, most EAs followed the leader to leader route to EA practice. Leah was the household EA officer although Neil was not against EAs, as he explained:

> *...It's the same with everything really, I'm happy to have it, I'm happy to do it and I support it and I get the nice warm glowing feeling about doing it (LEAH LAUGHS) but I never actually put in any of the work to do it.*

However, it should be noted that most repeated acts followed the individuals to household or individuals to individuals route to EA practice. These EAs were evident from household formation. Some energy conservation repeated acts such as turning down the heating were motivated by saving money. Other EAs such as filling only the right amount of water needed in a kettle and turning lights off in unused rooms were motivated by saving energy. Leah and Neil attributed this to the latter EAs being highlighted in television adverts to save energy. Leah initiated recycling upon household formation, which was a continuation of her existing behaviour. Her knowledge for action regarding recycling was attributed to seeing bring banks and the blue bin scheme leaflet. Her relative interest in recycling was increased by participating in recycling and being able to see the local landfill site from their house. Buying recycled toilet paper was another EA evident from household formation. Neil was largely responsible for buying this as he was responsible for shopping for everyday goods and his mother always used to buy it.

Other EAs were subsequently added to the repertoire at different times. The first such EA was using energy saving light bulbs after Leah was sent a leaflet about a special offer with the utility bill. When they bought their own home they had to buy their own appliances. They purchased energy efficient ones and this feature was on their list of criteria before they went shopping but they could not place how they knew about this. Both these EAs were motivated by saving money. In relation to Leah's interest in gardening, she initiated composting. She found out through word of mouth that Onyx were selling cheap composters but then also looked this up on their website. She also began growing organic vegetables for health reasons. More recently, Leah purchased some Ecover cleaning products after she saw a special offer in a magazine and liked that they looked *"environmentally friendly"*.

This illustration highlights a number of issues within the haphazard pattern of EA repertoire development. Firstly, individuals generally brought some EAs with them when the household formed. Secondly, in keeping with the general association between no motivational household theme and the haphazard pattern of EA repertoire development, different EAs were underpinned by different motives. Thirdly, knowledge for action about EAs tended to be gathered from a range of sources but was generally gathered passively. That is not to say that information was never actively sought, but where it was it tended to be about a specific EA. As noted earlier, households which did not exhibit a motivational household theme have parallels with McDonald et al.'s (2006) Translators (p.194). Thus, further areas of similarity in relation to the typically haphazard pattern of EA repertoire development include: not deliberately change-seeking but apt to change behaviour if provided with a rationale for doing so; and the passive acquisition of knowledge for action.

In the example of household 8, as a household which followed the leader to leader route to EA repertoire practice, it was Leah as the household EA officer who picked up on the information which led to behaviour change. Where a household which followed the household/leader/individuals route to EA repertoire practice followed the haphazard pattern of EA repertoire development, different household members acted as the leader in relation to different EAs because different individuals tended to pick up on different pieces of information. For example, in household 22 (couple) Mark had recently discovered about switching to green electricity:

> *I guess that's just part of my personality that they're things that are increasingly important to me…it's just instinctive that I will notice certain things…when paying for the energy bill this [green electricity] option was there and that grabbed my attention and so I guess it's just something I notice.*

Households which followed the haphazard pattern of EA repertoire development generally indicated that they were content with their existing repertoire. However, as highlighted above, such households will add EAs to their repertoire if provided with a rationale for doing so.

Summary

This chapter has addressed the research questions – How are environmental actions adopted in households? How are environmental actions practiced in households? – with respect to lone wider EAs and EA repertoires.

Three main findings have been presented with respect to lone wider EAs. Firstly, wider EAs were practiced/maintained by a number of different enactors/maintainers – household (collective form), household (representative form), leader (non-influential form), leader (widely influential form), and individuals. Two involvement distributions were evident – equal and entirely unequal – which were explained by the presence or absence of a recycling household theme, the domestic division of labour, the openness of EA practice to all, verbal prompting, empathy, and habit. Secondly, multiple routes to wider EA practice were evident. Five broad routes to wider EA practice were identified – household to household, leader to household, leader to leader, individuals to household, and individuals to individuals. Thirdly, repetitive wider EA practice was embedded in the everyday life of the household when EA practice was habitual and/or incorporated into the domestic or general routines of the household. In these circumstances, the EA was perceived as requiring minimal effort and was not perceived as additional work in terms of domestic/everyday activity. Hence, EA practice was seen as part of the normal activity of the household, i.e. embedded in everyday life.

Three main findings have been presented with respect to EA repertoires. Firstly, EA repertoires were underpinned by different patterns of motives. Households either exhibited a motivational household theme orientated around minimising environmental impact or saving money and/or avoiding waste, or lacked such a household theme with different EAs underpinned by different motives. Secondly, three routes to EA repertoire practice were identified which represented the dominant route(s) to EA practice across the EA repertoire – household/leader/individuals to household, leader to household, and leader to leader. Thirdly, EA repertoires developed gradually rather than in one step, and three constituent patterns were evident: opportunity dependent, in which development of the EA repertoire primarily related to opportunities to participate in new EAs; virtuous circle, in which participation in one EA led to participation in another EA

and so forth; and haphazard, in which the addition of each EA to the repertoire had its own explanation.

Chapter 7

An advanced conceptual framework of the adoption and practice of environmental actions in households

This thesis aims to advance understanding of the adoption and practice of EAs from the household perspective, with two associated research questions:

1. **How are environmental actions adopted in households?**
2. **How are environmental actions practiced in households?**

Chapter 2 presented a conceptual framework of the adoption and practice of EAs in households, consisting of two constituent frameworks. In light of both research questions being addressed with respect to a variety of lone EAs and EA repertoires, the two frameworks related to the adoption and practice of lone EAs in households and patterns of adoption and practice across EA repertoires respectively. Each constituent framework represented my interpretation of how the household literature, HDM literature and individual literature can be integrated in relation to the research issue, and was the product of an ongoing literature review shaped by the research findings. Elements of each constituent framework requiring further investigation and subsequently advanced by the research findings were made explicit. Thus, each constituent framework also represented a map of existing knowledge of the research issue.

The three previous chapters have documented the majority of the research findings. With some exceptions, the findings were generally not discussed in relation to, or used to advance, the conceptual framework. This was a consequence of the highly detailed nature of the findings and many issues cutting across the three chapters. Therefore, this chapter advances the conceptual framework of the adoption and practice of EAs in households. The main findings are summarised and used to explicitly address the elements of the original constituent frameworks identified as requiring further investigation. This takes place within the presentation of an advanced framework of

the adoption and practice of lone EAs in households, followed by the presentation of an advanced framework of patterns of adoption and practice across EA repertoires. These two sections are structured around the examination of each component of the constituent framework. Particular attention is paid to tentatively assessing the multiple routes to lone EA practice and the multiple routes to EA repertoire practice in terms of their desirability from a policy perspective. The chapter concludes with discussion of the broader implications of the advanced framework for the field of research into EA participation. As such, the advanced framework is used to further the argument that individual behaviour cannot be divorced from the social context of the household. Consequently, the field of research into EA participation should use the household as the more appropriate unit of analysis thus requiring the greater use of qualitative research approaches.

An advanced conceptual framework of the adoption and practice of lone environmental actions in households

The presentation of the advanced framework of the adoption and practice of lone EAs in households (hereafter known in this section as the 'advanced framework') begins by focusing on Figure 25. Figure 25 is a revised version of the single diagram representing the original framework of the adoption and practice of lone EAs in households (Figure 1, p.19) (hereafter known in this section as the 'original framework'), which is reproduced in Figure 24 for ease of reference. The **'Driver of environmental action adoption'** component is considered initially (Figure 26) followed by **'Environmental action enactor/maintainer'** (Figure 27) and **'Driver of environmental action practice change'**. The discussion then turns to **'Adoption (decision making process) and practice'**, **'Types and means of socialisation influence'** and **'Maintenance of repetitive environmental actions'**. This is followed by consideration of the three categories of factors shaping the driver of EA adoption, EA enactor/maintainer and driver of EA practice change – **'Situational characteristics'**, **'Household characteristics'** and **'Individual characteristics'**. The discussion then turns to **'Shaping relative influence'**. The presentation of the advanced framework then focuses on Figure 28 which is a route map to EA practice and moves discussion into the tentative differentiation of the routes in terms of their desirability from a policy perspective. Thus, the advanced framework is collectively represented by Figure 25, Figure 26, Figure 27, and Figure 28.

Figure 24. The original conceptual framework of the adoption and practice of lone environmental actions in households.

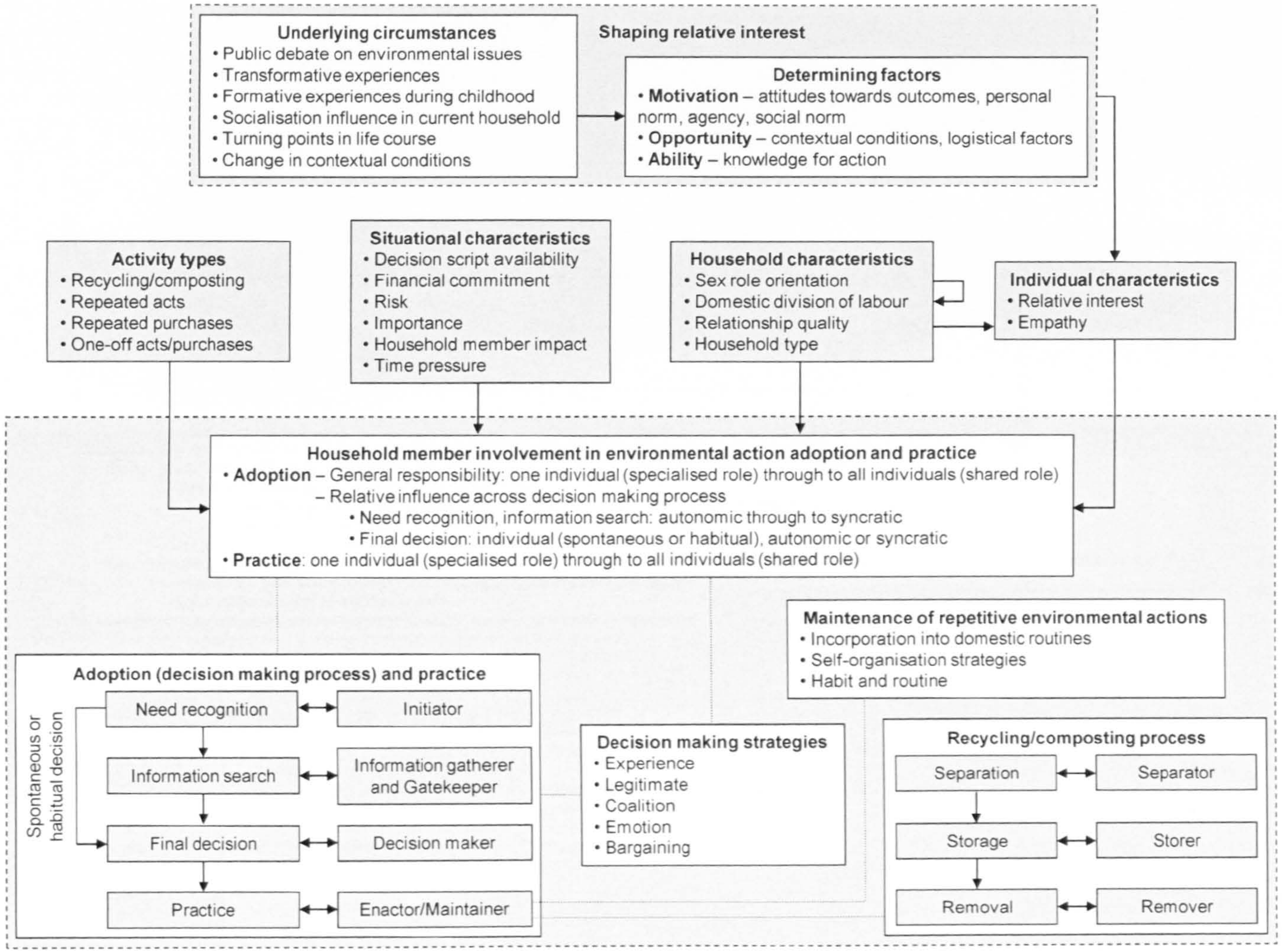
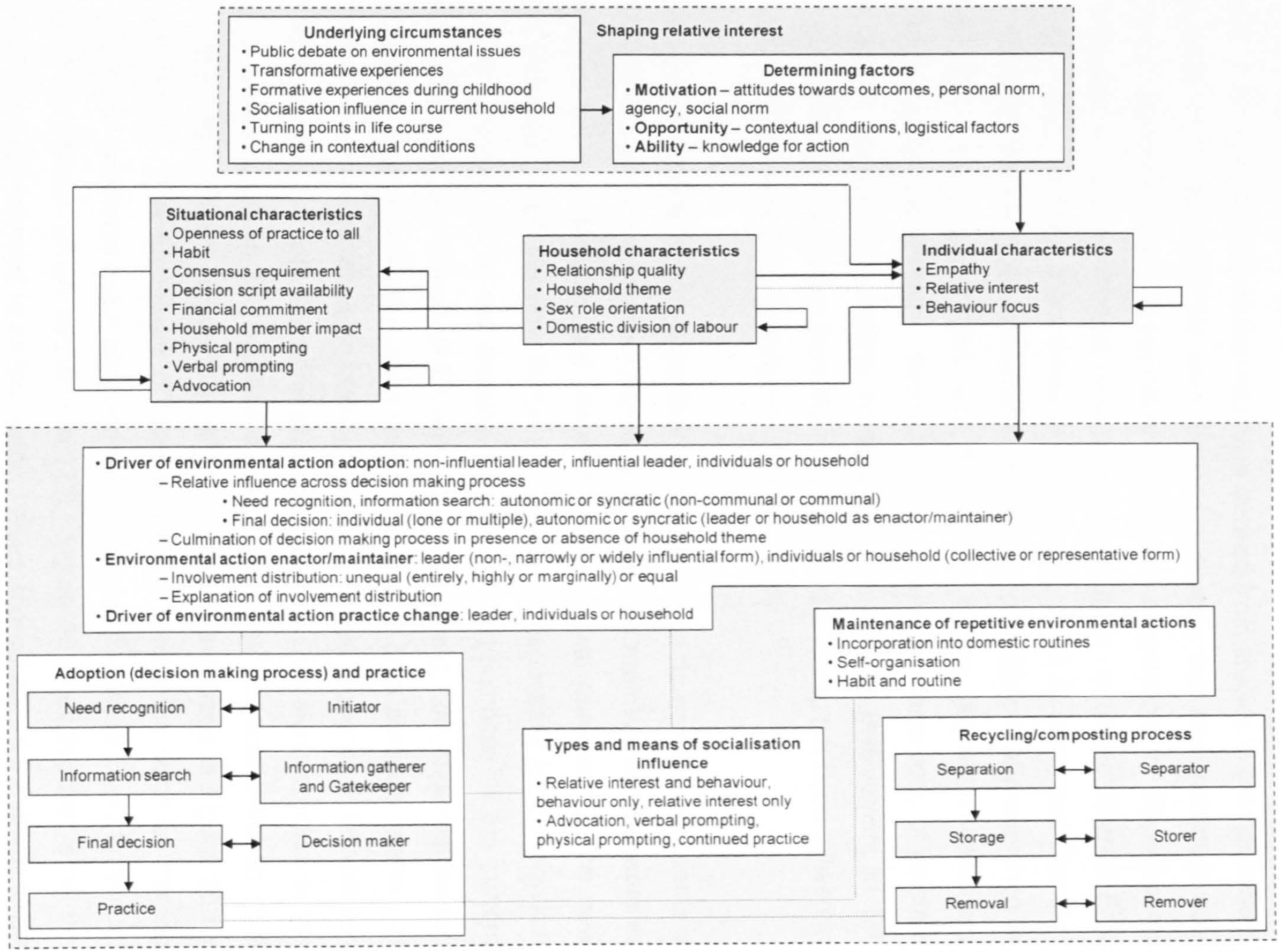


Figure 25. An advanced conceptual framework of the adoption and practice of lone environmental actions in households.



Driver of environmental action adoption

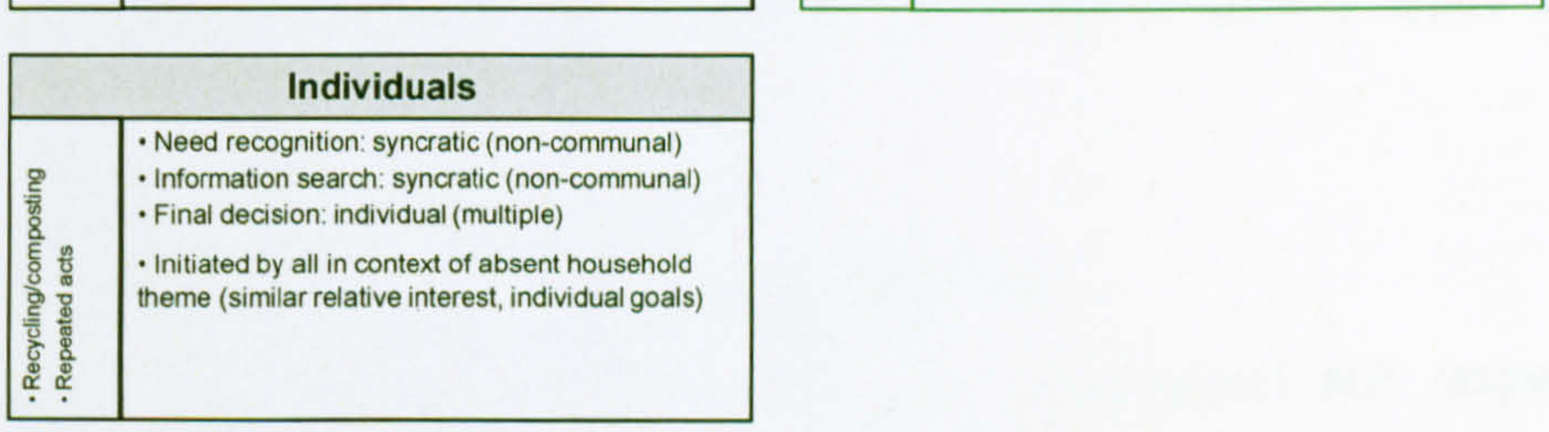
Two elements of the original framework required investigation with respect to the adoption aspect of **'Household member involvement in environmental action adoption and practice'**. Firstly, involvement in EA adoption was conceptualised at the level of general responsibility as a spectrum from one individual being responsible for EA adoption in a specialised role through to all individuals being responsible in a shared role. This spectrum of involvement was derived from studies in the household literature which have generally not gone beyond indicating that one individual was responsible or several household members were jointly responsible for EA adoption and have tended to highlight different ends of the spectrum in relation to different EAs (Åberg et al., 1996; Grønhøj, 2006; Oates and McDonald, 2006; Grønhøj and Ölander, 2007). Therefore, the spectrum of involvement needed to be specifically examined in its entirety across the range of EAs, and the natures of the different involvement distributions required exploration. Secondly, given that the framework of relative influence across the decision making process used to explore involvement in EA adoption in more detail was drawn from the HDM literature and had not been utilised in relation to EA adoption, its relevance required examination.

'Driver of environmental action adoption' in the advanced framework represents a more informed version of the adoption aspect of **'Household member involvement in environmental action adoption and practice'** in the original framework. The new concept of the driver of EA adoption is the unit ultimately responsible for the physical initiation of a repetitive EA or the practice of a one-off act/purchase in the current household. There are four drivers of EA adoption – household, non-influential leader, influential leader, and individuals – each one characterised by a particular pattern of relative influence across the decision making process of need recognition, information search and final decision, and the culmination of the decision making process in the presence or absence of an EA household theme (and the physical initiation of a repetitive EA in this context) (Figure 10, p.131 which is reproduced in Figure 26 for ease of reference). The framework of relative interest across the decision making process of specific relevance to EA adoption was discussed in chapter 5, along with an outline of the four drivers of EA adoption (p.127). Figure 26 highlights that while the other three drivers are relevant to all four activity types, individuals as the driver of EA adoption is relevant to recycling/composting and repeated acts only in terms of this study. However, the nature of individuals as the driver of EA adoption suggests its relevance to the further repetitive activity type of repeated purchases.

Figure 26. Characteristics of the drivers of environmental action adoption.

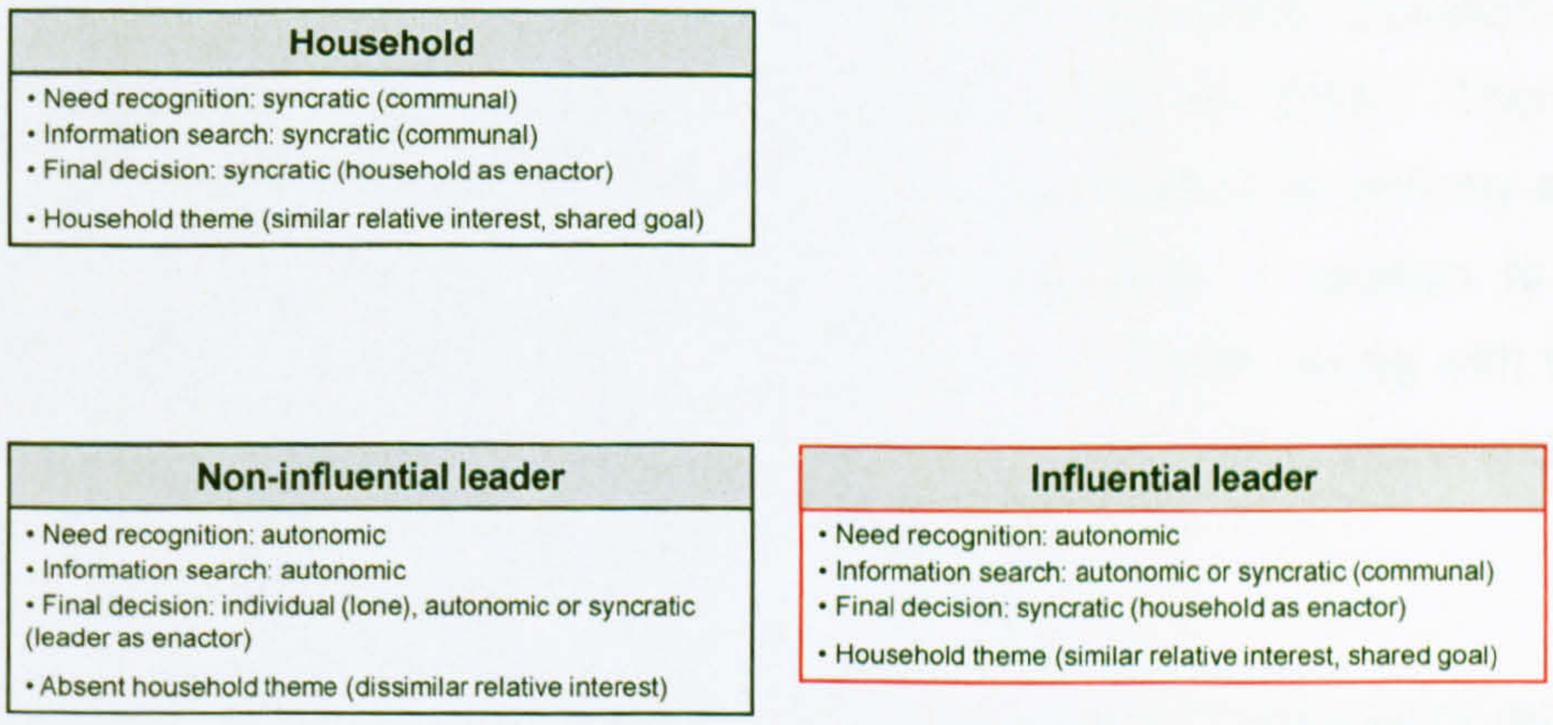
(a) Repetitive environmental actions

The vertical box indicates the relevance of the driver to the three activity types. Green represents socialisation influence from the leader to other household members with respect to relative interest and behaviour.



(b) One-off acts/purchases

Red represents socialisation influence from the leader to other household members with respect to relative interest only.



The four drivers of EA adoption map onto the original framework's conceptualisation of involvement in EA adoption in terms of general responsibility. A non-influential leader and an influential leader as the driver of EA adoption represent two distinct ways in which one individual was responsible for EA adoption in a specialised role. It should be noted that there is potential for these two types of leader to be differentiated into three types. Influential leaders and non-influential leaders who sought a syncratic decision both attempted to increase other household members' relative interest as an integral part of the decision making process. The efforts of the latter type of leader were unsuccessful. Given their rarity in this study, such leaders were grouped with non-influential leaders who made no such attempts to increase the relative interest of others; however, it is acknowledged that a more formal distinction between these two types of non-influential leaders may prove useful in future. The household and individuals as the driver of EA adoption represent two distinct ways in which all individuals were responsible for EA adoption in a shared role. Thus, the original framework's spectrum of involvement in EA adoption in terms of general responsibility has been delineated and its applicability to the range of activity types has been confirmed.

Environmental action enactor/maintainer

Two elements of the original framework required investigation with respect to the practice aspect of **'Household member involvement in environmental action adoption and practice'**. Firstly, involvement in EA practice was conceptualised as a spectrum from one individual practicing the EA in a specialised role through to all individuals practicing the EA in a shared role. This spectrum of involvement was derived from studies in the individual literature and the household literature which have tended to highlight different ends of the spectrum in relation to different EAs (Hormuth et al., 1991; Åberg et al., 1996; Harrison et al., 1996; McDonald and Ball, 1998; Grønhøj, 2006; Martin et al., 2006; Oates and McDonald, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007; Pocock et al., 2008). Therefore, the spectrum of involvement needed to be specifically examined in its entirety across the range of EAs. Secondly, the meaning of the term 'joint' in relation to recycling maintenance required exploration (Oates and McDonald, 2006), along with the nature of there being one recycler per household (Hormuth et al., 1991; McDonald and Ball, 1998; Oates and McDonald, 2006; Pocock et al., 2008).

'Environmental action enactor/maintainer' in the advanced framework represents a more informed version of the practice aspect of **'Household member involvement in environmental action adoption and practice'** in the original framework. The

modified concept of the EA enactor/maintainer is the unit physically and notionally responsible for EA practice. There are six enactors/maintainers – household (collective form), household (representative form), leader (non-influential form), leader (narrowly influential form) (which is exclusively a recycling/composting maintainer), leader (widely influential form), and individuals – each one characterised by a particular distribution of involvement in EA practice and an explanation of the distribution (Figure 27). An outline of the recycling maintainers and the wider EA enactors/maintainers was provided in chapter 4 (p.92) and chapter 6 (p.168) respectively. Figure 27 highlights that a leader (non-influential form), a leader (widely influential form) and individuals as the enactor/maintainer are not relevant to all four activity types in terms of this study. However, the nature of a leader (non-influential form) as the enactor/maintainer suggests its relevance to the further repetitive activity type of recycling/composting. The same can be said with regard to a leader (widely influential form) and repeated purchases and one-off acts/purchases, and individuals as the maintainer and repeated purchases.

Figure 27. Characteristics of the environmental action enactors/maintainers.
The vertical box indicates the relevance of the enactor/maintainer to the four activity types. Blue represents socialisation influence from the leader to other household members with respect to behaviour only.

Household (collective form)

- Recycling/composting
- Repeated acts
- Repeated purchases
- One-off acts/purchases

- Equal or marginally unequal involvement distribution
- Household theme (similar relative interest, shared goal)
- Equitable domestic division of labour or openness to all

Household (representative form)

- Recycling/composting
- Repeated acts
- Repeated purchases
- One-off acts/purchases

- Entirely unequal or highly unequal involvement distribution
- Household theme (similar relative interest, shared goal)
- Inequitable domestic division of labour or lack of openness to all

Leader (non-influential form)

- Repeated acts
- Repeated purchases
- One-off acts/purchases

- Entirely unequal involvement distribution
- Absent household theme (dissimilar relative interest)
- Domestic division of labour or openness to all irrelevant

Leader (narrowly influential form)

- Recycling/composting

- Highly unequal involvement distribution
- Absent household theme (dissimilar relative interest)
- Low relative interest overcome by physical prompting
- Inequitable domestic division of labour

Leader (widely influential form)

- Recycling/composting
- Repeated acts

- Equal involvement distribution
- Absent household theme (dissimilar relative interest)
- Low relative interest overcome by physical prompting and empathy
- Openness to all
- Low relative interest overcome by verbal prompting, empathy or habit

Individuals

- Recycling/composting
- Repeated acts

- Equal involvement distribution
- Absent household theme (similar relative interest, individual goals)
- Equitable domestic division of labour or openness to all

The four distributions of involvement in EA practice – entirely unequal, highly unequal, marginally unequal, and equal – map onto the original framework's spectrum of involvement in EA practice. The entirely unequal and highly unequal involvement distributions equate to one individual practicing the EA in a specialised role, while the equal and marginally unequal involvement distributions equate to all individuals practicing the EA in a shared role. The natures of these involvement distributions as delineating the scenarios of there being one recycler per household and the joint maintenance of recycling respectively, was discussed in chapter 4 (p.94). Thus, the applicability of the original framework's spectrum of involvement in EA practice to the range of activity types has been confirmed.

Driver of environmental action practice change

Repetitive EA practice may develop gradually rather than in one step. This is the case with the EA maintainer with respect to all three repetitive activity types and the recycling repertoire and self-organisation with respect to recycling/composting. Other than limited comment pertaining to the 'ratcheting up' of the recycling repertoire (Brook Lyndhurst, 2004b), the gradual development of repetitive EA practice has not been explicitly recognised previously. Indeed, the 'history' of EA practice focused solely on EA adoption in the original framework. Thus, the **'Driver of environmental action practice change'** is an addition to the advanced framework. The driver of EA practice change is the unit which was ultimately responsible for the change to repetitive EA practice. There are three such drivers – household, leader and individuals – which were outlined in chapter 5 (p.132).

Adoption (decision making process) and practice

One element of the original framework required investigation with respect to **'Adoption (decision making process) and practice'**, namely the nature of the decision making process. The nature of the decision making process is an intrinsic part of the framework of relative interest across the decision making process, as discussed in chapter 5 (p.127-8). However, given that information about EAs was only actively sought in a consistent manner by households with an environmental household theme, the relevance of the extended nature of the decision making process leading to the practice of a one-off act/purchase or the physical initiation of a repetitive EA should not be overstated.

Types and means of socialisation influence

Two elements of the original framework required investigation with respect to **'Decision making strategies'**. Firstly, given that Lee and Collins' (2000) framework of decision making strategies was drawn from the HDM literature and had not been utilised in relation to EA adoption, its relevance required examination. Secondly, following on from the work of Grønhøj (2006) and Grønhøj and Ölander (2007), overt conflict-ridden and peaceful interpersonal influence processes remained in need of further investigation, particularly issues relating to socialisation influence such as the types and means of such influence. Indeed, **'Types and means of socialisation influence'** in the advanced framework replaces **'Decision making strategies'** in the original framework. This section differs from the previous sections in that the work of Grønhøj (2006) and Grønhøj and Ölander (2007) allows for discussion of the research findings in relation to other studies in the household literature.

The HDM literature maintained that some degree of conflict is highly likely in the decision making process as individual preferences are unlikely to be uniform across the household, e.g. Wilkie et al. (1992), Lee and Collins (2000). Indeed, conflict in relation to EA adoption (and indeed EA practice) was widely evident in the sense that the absence of an EA household theme involving dissimilar relative interest was common. Although household members with low relative interest were not prepared to 'make the EA happen' in their household, rarely did such individuals actively oppose EA adoption or practice. This is not to say that disagreement between household members in relation to EAs was entirely absent. For example, reducing the temperature of the home environment was in some cases a 'bone of contention' with household members continually adjusting the thermostat to their preferred temperature. Similarly, there were some examples of children who were irritated by their parents verbally prompting (or 'nagging') them to turn lights off in unused rooms, etc. However, conflict was typically much more mild mannered. Where a non-influential leader was the driver of EA adoption, conflict was implicit and unspoken, in keeping with the findings of Grønhøj (2006) and Grønhøj and Ölander (2007). Where a non-influential leader who sought a syncratic decision or an influential leader was the driver of EA adoption, conflict was explicit.

Leaders employed two strategies to resolve this conflict and reach a joint decision. Firstly, advocation is akin to Lee and Collins' (2000) decision making strategy termed 'experience' which refers to using experience and knowledge as a source of information that will influence the decision outcome. Secondly, opting for a syncratic decision that they (the leader) would be personally responsible for EA practice is akin

to the formal appointment of a specialist (Davis, 1976) within Lee and Collins' (2000) decision making strategy termed 'legitimate'. The other aspect of the strategy termed 'legitimate', namely emphasising a role stereotype in order to obtain influence, also had some resonance specifically in relation to the relationship between couple and family households with a domestic division of labour based around a traditional sex role orientation and the female spouse as the household EA officer. However, there were no instances of the female spouse *explicitly* using her role as the specialist to resolve conflict. The remaining decision making strategies of coalition, emotion and bargaining were not evident, although this may be a reflection of the nature of the household focus group, as will be discussed shortly.

Given that conflict was typically found to be mild mannered and commonly implicit and unspoken, and the limited relevance of Lee and Collins' (2000) framework of decision making strategies, there is thus further empirical support for the original framework's position that the relevance of the HDM literature on overt conflict and decision making strategies to EAs is overstated (Grønhøj, 2006). However, there are limitations to this position which reflect the design of this study, and therefore the management of overt conflict remains a relevant area for investigation (Grønhøj, 2006). Due to the tendency of couples to minimise conflict (Commuri and Gentry, 2000; Kirchler et al., 2001), instances of overt conflict-ridden situations are unlikely to be rife (Grønhøj, 2006). Indeed, conflict minimisation may well explain the lack of overt conflict associated with dissimilar relative interest. I would also speculate that a lack of overt conflict may also be due to low relative interest being largely shaped by general inertia with respect to behaviour change (Dresner et al., 2007). A lack of overt conflict for these potential reasons is an issue deserved of further research attention as it indicates that an individual's resistance to an EA may be lower when the EA is introduced by a fellow household member as opposed to promoted externally. However, as this study has demonstrated, it should be borne in mind that tapping into overt conflict is difficult and as such, future studies need to be designed accordingly.

The nature of this study was most appealing to households in which overt conflict in relation to EA adoption and practice was minimal. While efforts were made to include more overt conflict-ridden households in the sample, such instances then proved too sensitive to investigate due to their association with poor interpersonal relationship quality, as discussed in chapter 3 (p.79). These instances in which individuals with low relative interest actively opposed the EA, tended to result in EA non-adoption. Thus, a fuller perspective on conflict management may be provided by examining both EA adoption *and* non-adoption. This would also appear to be an appropriate strategy

given the difficulties in recruiting households in which overt conflict is severe and/or commonplace. Finally, as discussed by Lee and Collins (2000), social desirability may affect individuals' willingness to report overt conflict and decision making strategies such as coalition, emotion and bargaining, e.g. Belch et al. (1980). This issue is likely to be heightened in household focus groups. Therefore, interviewing household members separately may help in this respect.

Moving on from a focus on interpersonal influence through overt conflict-ridden situations, peaceful interpersonal influence was also evident, which parallels the findings of Grønhøj (2006) and Grønhøj and Ölander (2007). Within the characterisation of interpersonal influence as overt conflict-ridden or peaceful, there are three types of socialisation influence from a leader to other household members. This tripartite classification is in contrast to the dichotomy of socialisation influence indicated by Grønhøj and Thøgersen (2007). Firstly, socialisation influence with respect to relative interest and behaviour. This has parallels with Grønhøj and Thøgersen's (2007) reference to socialisation influence which results in the volitional practice of EAs. Secondly, socialisation influence with respect to behaviour only. This incorporates Grønhøj and Thøgersen's (2007) point about socialisation agents forcing other household members to practice EAs; for example, parents verbally prompting their children was often of this nature. However, a feeling of compulsion was notably absent where individuals with low relative interest nonetheless practiced an EA due to physical prompting or empathy and in some cases verbal prompting. Thus, EA practice may be volitional although not independent of the leader. Socialisation influence with respect to behaviour only represents an empirical demonstration of this point within the household that attitude change is not a prerequisite of behaviour change (Uzzell et al., 2006). The finding that household members with low relative interest can nonetheless practice the EA in question (in other words, behave beyond their relative interest) due to the actions of a leader is particularly significant; as will be discussed later, it is tentatively apparent that routes which involve socialisation influence with respect to behaviour only are not necessarily less desirable than other routes to EA practice in terms of the maximisation of environmental savings (p.234). The third type of socialisation influence is socialisation influence with respect to relative interest only.

There are four main means of socialisation influence from a leader to other household members – advocation, verbal prompting (both verbal in nature), physical prompting, and continued practice (both physical in nature). Advocation refers to a leader promoting participation in the EA to other household members in terms of their

personal motives. Verbal prompting refers to a leader asking or instructing other household members to practice an EA. Both these means of socialisation influence were evident in overt conflict and peaceful contexts. Physical prompting is exclusive to recycling/composting and refers to storage points put in place by a leader acting as a visual reminder to recycle and making separation and storage a comparable option to binning recyclables in terms of effort, coupled with the leader taking responsibility for the removal of recyclables thus allowing for their ongoing separation and storage. Continued practice refers to the ongoing practice of a repetitive EA by a leader. Physical prompting and continued practice were both means of peaceful influence. How the means of socialisation influence create the three different types of socialisation influence will be returned to later (p.231-2).

Maintenance of repetitive environmental actions

Three elements of the original framework required investigation with respect to **'Maintenance of repetitive environmental actions'**. Firstly, in response to Oates and McDonald (2002) and Pocock et al.'s (2008) recognition of the incorporation of recycling tasks into domestic routines, and the influence of the domestic division of labour and sex role orientation on the practice of other repetitive EAs, the possibility of the incorporation of repeated acts and repeated purchases into domestic routines remained in need of attention. Secondly, in response to a limited number of studies highlighting the importance of self-organisation strategies in recycling maintenance (Werner and Makela, 1998; Hansmann et al., 2006; Pocock et al., 2008), the under-researched issue of the role of self-organisation in recycling maintenance warranted further investigation. Thirdly, in relation to the role of habit and routine in the maintenance of repetitive EAs, how habitual behaviour is changed in the group environment of the household was yet to receive attention.

The practice of recycling/composting, repeated purchases and laundry-related repeated acts can all be regarded as tasks that are incorporated into domestic routines. This was evidenced by two issues. Firstly, household members discussed EA practice as part of wider domestic routines. Secondly, the domestic division of labour (at the micro level of responsibility for the specific domestic task which encompassed the EA) underpinned the distribution of involvement in EA practice. Thus, there is further empirical support for recognition of the incorporation of recycling tasks into domestic routines (Oates and McDonald, 2002; Pocock et al., 2008). Furthermore, this position has indeed been extended to repeated purchases and laundry-related repeated acts.

Self-organisation refers to the extent to which a system is in place for the separation, storage and removal of recyclables, and incorporates the two self-organisation strategies recognised by Hansmann et al. (2006), namely separating recyclables into containers and combining recycling tasks with other activities (Werner and Makela, 1998). High self-organisation, or a recycling system, involves the use of formal storage points and the incorporation of recycling tasks into domestic routines. Low self-organisation, or the lack of a recycling system, involves informal storage points and the comparatively less routinised removal of recyclables. High self-organisation was associated with the perception of recycling as successful, requiring minimal effort, and not as additional work in terms of domestic activity. Thus, where a system was in place, recycling was embedded in everyday life, i.e. seen as part of the normal activity of the household. This finding has strong parallels with Pocock et al.'s (2008) recognition that household organisation is a feature of 'unconscious competence' with respect to recycling. Thus, along with the work of Werner and Makela (1998), Hansmann et al. (2006) and Pocock et al. (2008), there is strong evidence that high self-organisation facilitates long-term participation in recycling. Furthermore, self-organisation was the factor indicative of recycling repertoire, as opposed to the maintainer or route to recycling practice, and also enhanced the separation and storage of items within material types. This is supported by Pocock et al.'s (2008) finding that household disorganisation is a barrier to recycling as much as possible. Appreciation of the value of high self-organisation stems from high relative interest and may either be inherently recognised or develop with experience of recycling, hence the gradual development of self-organisation with respect to the latter. Werner and Makela (1998) also identified a positive relationship between favourability towards recycling and self-organisation. However, in what represents an important detail, high relative interest does not necessarily translate into high self-organisation. Thus, while a lack of appreciation of the value of high self-organisation and how to create such a recycling system may be exhibited more commonly by individuals with low relative interest, this position may also be exhibited by individuals with high relative interest. These particularly important findings will be returned to later (p.234-5).

Turning to the issue of habit and routine, the nature of the separation and storage of recyclables and repeated act practice fell neatly onto the original framework's conceptualisation of repetitive EA practice as either involving conscious or habitual behaviour, or is part of an individual's discursive consciousness or practical consciousness respectively (Hobson, 2003). However, there are two forms of EA practice as part of an individual's discursive consciousness. With respect to new EAs, individuals with high relative interest are willing and able to keep EA practice as part of

their discursive consciousness due to a desire to participate in the EA, in keeping with discursive consciousness preceding practical consciousness (Hobson, 2003). For individuals with low relative interest, EA practice may be continually brought into discursive consciousness by physical prompting, verbal prompting or empathy. This issue will be returned to later during discussion of the related issues of how the means of socialisation influence create the three different types of socialisation influence and how habitual behaviour is changed in the group environment of the household (p.231-2).

In a parallel fashion to the link between the incorporation of recycling tasks into domestic routines coupled with the use of formal storage points and the embeddedness of recycling in everyday life, the practice of repeated acts and repeated purchases was also perceived as requiring minimal effort and not as additional work and was therefore embedded in everyday life when such practice was habitual and/or incorporated into domestic or general routines. This is in keeping with Shove's (2006) position that habitual and routine behaviour represents what the actor takes to be normal and ordinary behaviour. Thus, just as self-organisation facilitates long-term participation in recycling, the habitual and/or routinised practice of repeated acts and repeated purchases facilitates long-term participation in these activity types.

Also in relation to **'Maintenance of repetitive environmental actions'**, the original framework identified the underperformance of existing recyclers as an issue warranting further attention. In addition to the identification of low self-organisation, lack of storage space and lack of knowledge for action are also supported as barriers to a comprehensive recycling repertoire (Hayward et al., 2007; Pocock et al., 2008). A further issue was low quantities of recyclables, which is thus now recognised as a barrier to recycling in general (Tucker, 1999; Perrin and Barton, 2001; McDonald and Oates, 2003) *and* a barrier to a comprehensive recycling repertoire. With respect to within-material recycling, Pocock et al. (2008) identified a spatial aspect to the capture of recyclables in the home which was also demonstrated here. Expanding on Pocock et al.'s (2008) work, it is also clear that size and quantity of recyclables are also important, and that all such behaviour is part of the practical consciousness of individuals. Furthermore, such behaviour is not restricted to particular maintainers or individuals with low relative interest.

The original framework recognised four categories of factors as influencing household member involvement in EA adoption and practice, namely **'Activity types'**, **'Situational characteristics'**, **'Household characteristics'**, and **'Individual**

characteristics'. Given that these factors were drawn from frameworks of family decision making within the HDM literature that had not been applied to EA adoption (Gupta et al., 1983; Lee, 1992; Kirchler et al., 2001; Levy and Lee, 2004) and a limited number of studies within the household literature, all the factors were in need of further examination to a greater or lesser extent. In the advanced framework, **'Situational characteristics', 'Household characteristics'** and **'Individual characteristics'** shape the driver of EA adoption, the EA enactor/maintainer and the driver of EA practice change. As such, the discussion will begin with the removal of **'Activity types'** from the advanced framework.

Activity types

Åberg et al. (1996) recognised composting as requiring agreement and ongoing co-action thereby implying that recycling/composting may be intrinsically associated with a syncratic decision. In contrast, this study has found that the adoption of recycling/composting may involve the full range of final decision types, i.e. individual (lone), individual (multiple), autonomic, syncratic (household as enactor/maintainer), and syncratic (leader as enactor/maintainer). Thus, adoption of these EAs does not implicitly require agreement. This was also the case across the other three activity types and at the level of specific EAs. However, it should be noted that while individual (lone) and autonomic decisions involved dissimilar relative interest and therefore disagreement, such conflict was typically mild mannered and commonly implicit and unspoken in this study, as highlighted earlier. Indeed, this study was unable to tap into overt and 'serious' conflict in relation to EAs in great detail. Nonetheless, it is clear that active disagreement can prevent EA adoption. Thus, while the adoption of a particular EA does not implicitly require agreement, this is not to say that active disagreement is always surmountable. However, it remains the case that assumptions cannot be made about the nature of the final decision or the driver of EA adoption simply from the activity type or the specific EA in question. The same can be said in relation to the distribution of involvement in EA practice and the EA enactor/maintainer. Thus, **'Activity types'** has been removed from the advanced framework.

Situational characteristics

'Situational characteristics' include consensus requirement, decision script availability, financial commitment, household member impact, advocation, verbal promoting, physical prompting, habit, and openness of EA practice to all.

The new concept of consensus requirement is the central situational characteristic which shapes the driver of EA adoption. Consensus requirement refers to the

perceived need for agreement around EA adoption *and* practice, or EA adoption alone. For leaders who perceive EA adoption and practice as requiring consensus, agreement that household members will share responsibility for EA practice is a prerequisite to EA adoption. Although this position was only evident in relation to recycling/composting in terms of this study, it would seem likely that this position may also be relevant to other activity types, particularly repeated purchases and one-off acts/purchases. For leaders who perceive EA adoption as requiring consensus, agreement that other household members have no objection to the leader practicing the EA is a prerequisite to EA adoption. For individuals who do not perceive an EA as requiring consensus, whether or not other household members object to the EA or are likely to share responsibility for EA practice is largely irrelevant in relation to EA adoption, in either an un-contemplated or a conscious manner.

Consensus requirement is in turn shaped by three situational characteristics recognised by Kirchler et al. (2001) – decision script availability, financial commitment and household member impact. These factors influence the nature of the final decision in a similar way to that specified in the original framework, although now through the medium of consensus requirement. Decision script availability refers to the cognitive complexity of EA adoption, with cognitive scripts being available for EAs that individuals have experience of and 'simpler' EAs (repeated acts). In such instances, the EA is not perceived as requiring consensus in an un-contemplated manner. The link between inexperience of an EA and consensus requirement through the medium of decision script unavailability is a tentative one, and is thus deserved of further research attention. Financial commitment refers to the degree to which the EA involves the commitment of shared financial resources, with no/limited financial commitment associated with a lack of consensus requirement and relatively high financial commitment associated with consensus requirement. Similarly, household member impact refers to extent to which the EA impacts on other household members, with no/limited impact associated with a lack of consensus requirement and relatively high impact associated with consensus requirement. It is important to stress that both financial commitment and household member impact represent the subjective perceptions of leaders rather than objective issues. Consensus requirement is also shaped by two household characteristics – sex role orientation and the domestic division of labour – as will be highlighted in the next section.

Consensus requirement in turn shapes advocation of the EA to other household members. This issue, and in some cases how other household members respond, shapes whether a leader as the driver of EA adoption is influential or non-influential.

Thus, as well as being a means of socialisation influence, in the context of shaping the driver of EA adoption, advocation is also a situational characteristic. Advocation following EA adoption is shaped by the individual characteristic of behaviour focus, and the individual characteristic of empathy is also dependent on advocation; these issues will be highlighted later.

Given that there was no evidence in this study to support their inclusion, the original framework's remaining situational characteristics of perceived risk, importance and time pressure, which were drawn from the work of Sheth (1974), are absent from the advanced framework. However, while the availability of time was not a factor which influenced the nature of the final decision to adopt an EA, time pressure was found to be a barrier to actually making the decision to adopt an EA and a barrier to devising and implementing a recycling system.

Four situational characteristics shape the EA enactor/maintainer – openness of EA practice to all, habit, physical prompting, and verbal prompting. Openness of EA practice to all refers to the extent to which an EA can be practiced by all household members if they are inclined to do so, in the absence of the relevance of the domestic division of labour. Habit refers to the wholly habitual practice of repeated acts by individuals with low relative interest. As well as being means of socialisation influence, in the context of shaping the EA enactor/maintainer, verbal prompting and physical prompting are also situational characteristics. Verbal prompting is in turn dependent on behaviour focus, as will be highlighted later shortly.

Household characteristics

'Household characteristics' include sex role orientation, the domestic division of labour, EA household theme, and interpersonal relationship quality.

An EA household theme refers to household members exhibiting similar relative interest and collectively recognising EA participation as a shared goal. The absence of a household theme either refers to household members exhibiting similar relative interest but seeing EA participation as an individual goal, or household members exhibiting dissimilar relative interest with one individual exhibiting greater (and high) relative interest and other household members exhibiting lesser (and low) relative interest. The presence or absence of an EA household theme is a more informative concept than relative interest alone. Specifically, the incorporation of the issue of collective recognition allows the distinction between the household and individuals as the driver of EA adoption and the EA maintainer.

Sex role orientation refers to where couples lie on the continuum from traditional to modern sex role orientation (Qualls, 1987). This factor influences the nature of the final decision to adopt an EA in a similar way to that specified in the original framework, although now through the medium of consensus requirement. Thus, a modern sex role orientation whereby democratic decision making is emphasised (Qualls, 1987) is associated with consensus requirement.

The domestic division of labour refers to how responsibility for the specific domestic task which encompasses the EA is distributed among household members. The domestic division of labour influences the nature of the final decision to adopt an EA through the medium of consensus requirement. As such, EA practice falling outside a leader's domain of household responsibility or falling within a shared domain of household responsibility is associated with consensus requirement, while EA practice falling within a leader's sole domain of household responsibility is associated with a lack of consensus requirement. The domestic division of labour is also an explanatory characteristic of the EA enactor/maintainer. As such, this study adds to the growing collection of studies which have identified a link between involvement in EA adoption and practice and the domestic division of labour (Dickinson, 1994; Åberg et al., 1996; Díaz Meneses and Beerli Palacio, 2005; Grønhøj, 2006; Oates and McDonald, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007). However, in contrast to some of these studies that consider the domestic division of labour at the level of general responsibility for a range of household tasks, in particular Oates and McDonald (2002; 2006) and Carlsson-Kanyama and Lindén (2007), this study demonstrates that the domestic division of labour is relevant at a much more micro level, and therefore has greater alignment with the findings of Dickinson (1994).

This study is also aligned with the findings of Dickinson (1994) in a second way, namely that there is a direct link between the domestic division of labour and involvement in EA adoption and practice, although the role of sex role orientation in determining the domestic division of labour is recognised. This is opposed to a link between gender and involvement in EA adoption and practice through the domestic division of labour (Grønhøj, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007). Thus, this study paints a much less gendered picture of EA adoption and practice than the aforementioned studies. This issue will be returned to later during discussion of the influence of sex role orientation and the domestic division of labour on the route to EA repertoire practice (p.241).

In keeping with the relationship specified by the original framework, interpersonal relationship quality influences the individual characteristic of empathy (Kirchler et al., 2001). As such, empathy was evident in households with close interpersonal relationships, which included couple and family households and shared households orientated around friendships. Kirchler et al. (2001) also note that there is less likelihood of a syncratic decision if interpersonal relationship quality is poor. Interpersonal relationship quality did not appear to have a bearing on the nature of the final decision in this study, although poor interpersonal relationship quality was associated with EA non-adoption. However, given the previously documented difficulties in exploring situations involving poor interpersonal relationships, the lack of a link between interpersonal relationship quality and the nature of the final decision is clearly not a definitive position.

The original framework's remaining household characteristic of household type is absent from the advanced framework given that there was no evidence in this study to support its inclusion. As such, assumptions cannot be made about the driver of EA adoption, the EA enactor/maintainer or the driver of EA practice change simply from the household type.

Individual characteristics

'Individual characteristics' include relative interest, empathy and behaviour focus. Relative interest refers to the level of importance a household member places on participating in a particular EA. Relative interest, within the presence or absence of an EA household theme is an explanatory characteristic of the driver of EA adoption, the EA enactor/maintainer and the driver of EA practice change. Thus, the HDM literature's position that the greater an individual's relative interest, the greater their relative influence in the final decision, e.g. Gupta et al. (1983), Corfman and Lehmann (1987), Levy and Lee (2004), is supported in relation to EA adoption. The broad suggestion in the household literature that relative interest influences involvement in EA adoption and practice (Åberg et al., 1996; Díaz Meneses and Beerli Palacio, 2005) is also supported. However, as noted in the previous section, the presence or absence of a household theme is a more informative concept than relative interest.

Relative interest in turn shapes behaviour focus. The new concept of behaviour focus relates to whether or not an individual actively prefers other household members to practice the EA in question. Individuals with a household-focussed perspective on an EA want other household members to practice the EA and as a result, intentionally attempt to change other household members' relative interest and behaviour through

advocation and verbal prompting. This perspective is associated with high relative interest. Individuals with a self-focussed perspective on an EA are unconcerned about how other household members behave and as a result, do not intentionally set out to influence the relative interest and behaviour of other household members. This perspective is associated with low relative interest.

Empathy refers to how important it is to an individual that the preferences of other household members are accounted for in the adoption and practice of a particular EA. Empathy is in turn dependent on advocation of the EA to other household members by the leader, and in some cases may also be dependent on the leader continuing to verbally prompt other household members. Empathy appeared to have little bearing in relation to EA adoption in this study. With respect to a non-influential leader as the driver of EA adoption, individuals with low relative interest did not frame their lack of resistance to the EA in terms of empathy towards the leader. With respect to an influential leader as the driver of EA adoption, there were no indications that household members were simply agreeing to partake in the EA due to empathy towards the leader. Rather it appeared that the leaders were genuinely successful in raising other household members' relative interest during the decision making process through advocation. However, two points should be noted here. Firstly, this may be a consequence of household members who presently exhibited high relative interest recalling past events in a more favourable light. Secondly, many of the instances of an influential leader as the driver of EA adoption were in households which exhibited an environmental household theme. As such, the initial lesser relative interest of other household members was generally rooted in a lack of knowledge for action. However, there were indications that empathy may have played in a role in the limited instances in which the non-adoption of EAs was raised in the household focus groups. Thus, a potential leader exhibited greater relative interest, while another household member exhibited lesser relative interest rooted in a negative perception of the EA (e.g. objections to the financial cost) to which the potential leader conceded, possibly due to empathy. However, it was not always clear whether the relative interest of the potential leader was sufficiently high enough to drive EA adoption even without any objections. Thus, the role of empathy in EA adoption and non-adoption remains an issue for further research.

Shaping relative interest

Three elements of the original framework required investigation with respect to **'Shaping relative interest'**. Firstly, with respect to **'Determining factors'**, given that the concept of relative interest was unutilised in the EA participation literature, relative

interest was conceptualised as being shaped in the same way as actual behaviour, i.e. influenced by a broad range of internal and external factors which may vary greatly across EAs and individuals and interact with each other (Stern, 2000; Barr, 2002; Kollmuss and Agyeman, 2002; Jackson, 2005; Darnton et al., 2006). This point therefore required confirmation, which has been attained. Although this may seem like an obvious point, it demonstrates that the concept of relative interest can be integrated smoothly into the EA participation literature (Gregory and Di Leo, 2003). Thus, further factors whose importance has been recognised in relation to behaviour but not in relation to relative interest in this study such as self-presentation (Sadalla and Krull, 1995) may be added to the framework in future.

Secondly, and also with respect to **'Determining factors'**, from where and how knowledge for action is acquired was also deserved of further attention, along with the related issue of how knowledge for action is transmitted through the household (Pennartz and Niehof, 1999). A multitude of sources of knowledge for action were evident including: seeing bring banks (Ball and Lawson, 1990; Belton et al., 1994; McDonald and Ball, 1998); kerbside recycling service leaflets (McDonald and Ball, 1998); word of mouth (Brook Lyndhurst, 2007b); television, newspapers and magazines, and product labelling (Steedman, 2005); and information from utility companies. Knowledge for action was acquired from these sources in a typically passive manner. Sources of knowledge for action which were consulted in a more active manner include local authorities, information from environmental organisations, greener lifestyle books, and Ethical Consumer magazine. With respect to recycling, knowledge for action about the recyclability of items was often based on personal assumptions rather than external information. Furthermore, the underperformance of recycling households in terms of recycling repertoire was rarely an informed decision but rather involved a lack of knowledge for action with regard to facilities available.

The active/passive nature of how knowledge for action is acquired is most informatively considered within the broader context of how households approach EA adoption across the EA repertoire, an approach also highlighted by McDonald et al. (2006). Thus, the advanced framework of patterns of EA adoption and practice across EA repertoires (Table 5) incorporates patterns of active and passive acquisition of knowledge for action. Households which exhibited an environmental household theme actively sought information consistently across the EA repertoire. Actively seeking information was also a characteristic of the virtuous circle pattern of EA repertoire development. In contrast, the passive acquisition of knowledge for action was a characteristic of the

inter-related haphazard pattern of EA repertoire development and no motivational household theme. The implications of these patterns will be considered later (p.244).

Finally, with respect to the dissemination of knowledge for action through the household, only households with an environmental household theme reported new knowledge for action back to the household consistently across the EA repertoire. Advocation can also represent the dissemination of knowledge for action and thus the factors of consensus requirement and behaviour focus were relevant in other households. Knowledge for action regarding the detail of recycling was often only disseminated when prompted by other household members' errant behaviour or their questioning. Thus, such information sharing was facilitated by high relative interest/household-focussed perspective and close interpersonal relationships. Knowledge for action was only deliberately withheld from household members in cases in which leaders were aware of others' lack of interest and errant behaviour could be overridden.

The final element of the original framework which required investigation with respect to **'Shaping relative interest'**, specifically **'Underlying circumstances'** was socialisation influence from one household member to another. This issue was ripe for further attention following on from the work of Grønhøj (2006) and Grønhøj and Ölander (2007). In keeping with Mårtensson and Pettersson (2003), Brook Lyndhurst (2004b), Woollam et al. (2006), and Ekström (2007), there was evidence of children influencing their parents with respect to EA participation by taking related messages home from school, although such instances were limited in the sense that behaviour change was restricted to one EA. However, adults influencing other adults with respect to EA participation, as identified by Grønhøj (2006) and Grønhøj and Ölander (2007), was the more common scenario, and indeed had a greater impact in terms of behaviour change across EA repertoires. Thus, rather than downplaying the possibility that children's environmental concern and knowledge may act as a catalyst for family behaviour change (Easterling et al., 1995), this study further highlights the importance of socialisation influence from adult to adult. Furthermore, going beyond the simple recognition of socialisation influence within the household, the different types and means of socialisation influence have been established. The relationships between the means and types of socialisation influence will be discussed in the following section.

A route map to environmental action practice

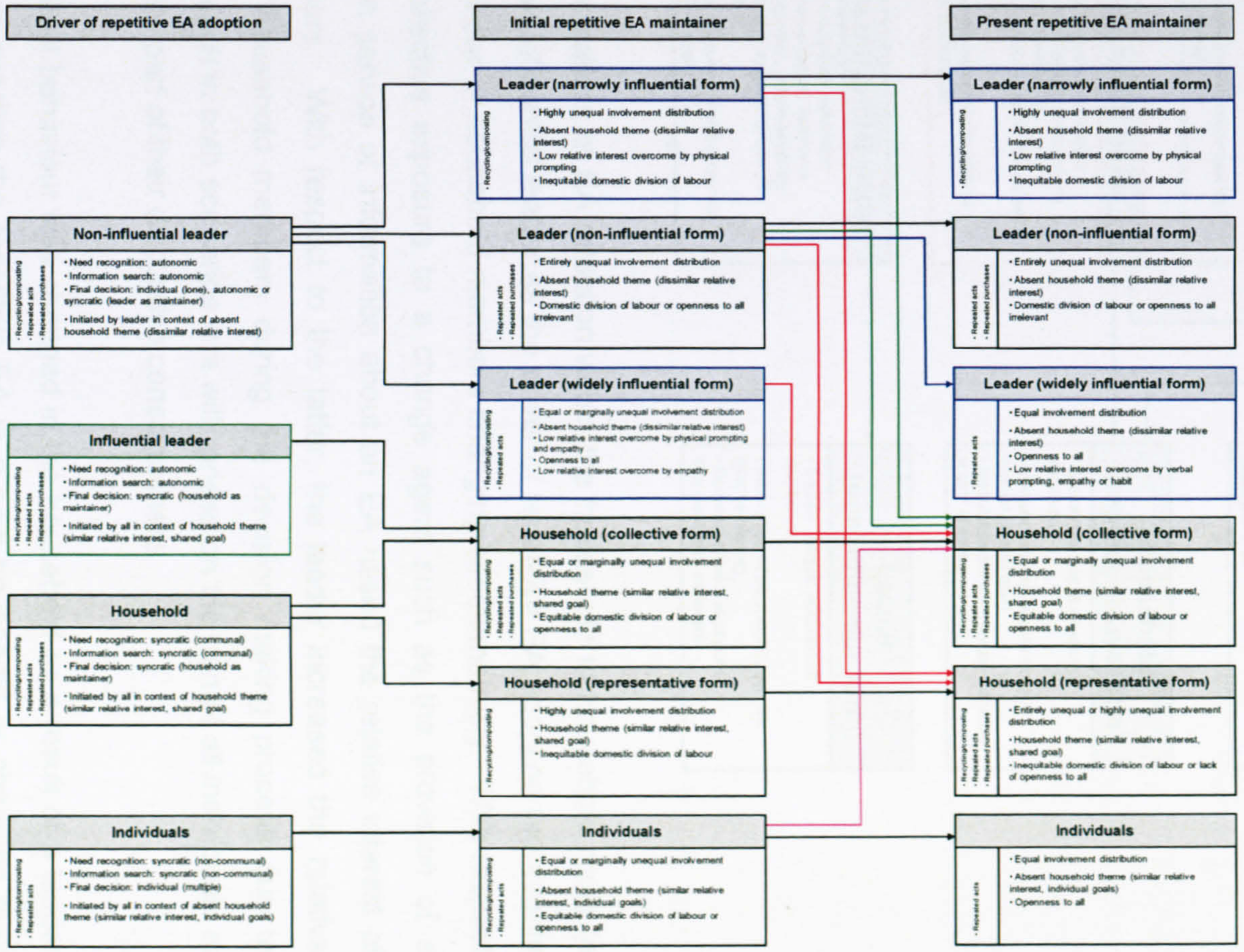
The original framework highlighted the work of Oates and McDonald (2006) which identified a number of combinations of recycling initiator and sustainer in households.

These different combinations were regarded as different routes to recycling practice and reflective of different routes to EA practice in general. Two elements of the original framework required investigation. Firstly, the skeletal forms of the different routes to EA practice were in need of further exploration. Secondly, the existence of multiple routes to EA practice leads to the question: are particular routes more desirable than others from a policy perspective? The revised concept of the route to repetitive EA practice represents the driver of recycling adoption followed through time to the present maintainer, thereby involving the initial maintainer. The route to one-off act/purchase practice represents the combination of driver of EA adoption and EA enactor. The routes to recycling practice and the routes to wider EA practice were presented in detail in chapter 5 and chapter 6, and are summarised in Figure 28 as a route map to EA practice. It is not claimed that Figure 28 represents a definitive route map to EA practice. Thus, existing routes may be relevant to further activity types and additional routes to EA practice may also be evident. The presentation of the route map allows for the advancement of two inter-related elements of the original framework mentioned previously – how the means of socialisation influence create the three types of socialisation influence and how habitual behaviour is changed in the group environment of the household. The remainder of this section then focuses on the differentiation of the different routes to EA practice in terms of their desirability from a policy perspective.

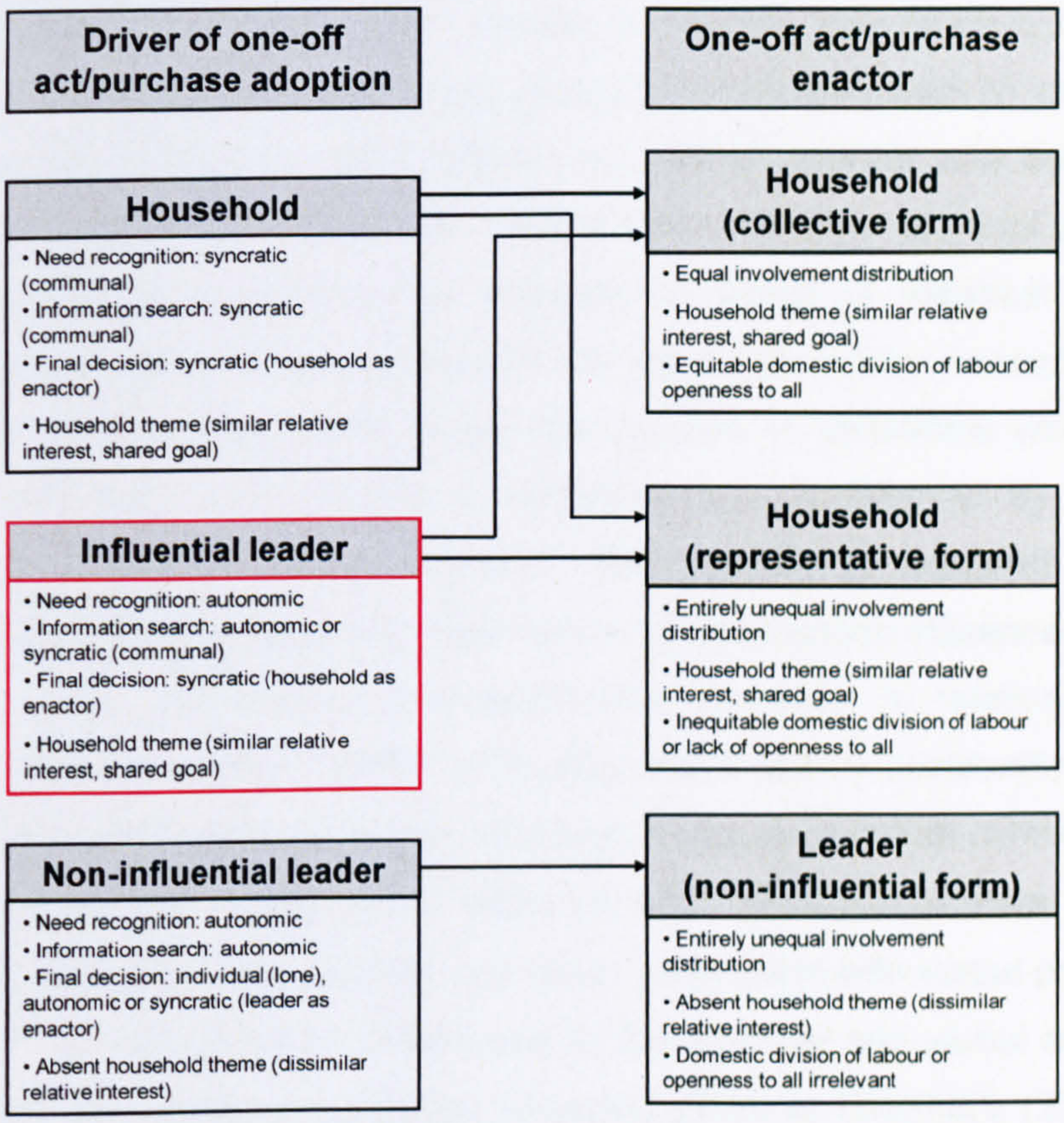
Figure 28. A route map to environmental action practice.

Red represents socialisation influence from the leader to other household members with respect to relative interest only. Blue represents socialisation influence with respect to behaviour only. Green represents socialisation influence with respect to relative interest and behaviour.

(a) Repetitive environmental actions



(b) One-off acts/purchases



The change agent pattern of EA adoption within the household to household route to EA practice and an influential leader as the driver of repetitive EA adoption represents the habitual behaviour of household members changing simultaneously. With respect to the former, collective exposure to a change agent such as the provision of a kerbside collection service or information about an EA raised the relative interest of household members. With respect to the latter, the leader increased the relative interest of other household members during the decision making process due to advocation. The result in both scenarios is a willingness on the part of all individuals to keep EA practice as part of their discursive consciousness.

Alternatively, habitual behaviour was changed in the household as a result of a leader either continuing to practice the repetitive EA in a new household or changing their behaviour in the current household, which then induced behaviour change in the remaining household members. With respect to recycling/composting, physical prompting was the main means of socialisation influence with respect to behaviour only. The presence of a storage point for recyclables continually brought the separation and storage of recyclables into discursive consciousness. However, in the initial stages, this also depended on the use of verbal prompting. However, it appears that given time, the separation and storage of recyclables can become part of

facilitated recyclers' practical consciousness; thus, physical prompting can largely negate the need for verbal prompting. The additional use of advocation can also lead to facilitated recyclers separating and storing recyclables due to physical prompting and empathy. Physical prompting and advocation can also work in conjunction to create socialisation influence with respect to relative interest and behaviour and socialisation influence with respect to relative interest only – physical prompting to overcome a negative perception of recycling in terms of logistical factors and advocation to facilitate the development of motives for recycling. Indeed, whether or not a leader employs advocation tentatively appears to determine whether or not socialisation influence with respect to behaviour only is followed by socialisation influence with respect to relative interest. With respect to repeated acts, verbal prompting and advocation were the main means of socialisation influence with respect to behaviour only. Advocation was particularly important in relation to creating empathy towards the leader. Verbal prompting and empathy continually brought EA practice into discursive consciousness. Although it was evident that continued practice alone was a means of socialisation influence with respect to relative interest and behaviour, continued practice typically worked in conjunction with verbal prompting and advocation. Thus, the apparent importance of the physical *and* verbal actions of the leader in terms of creating socialisation influence differs to Grønhøj's (2006) position which, although not explicitly stated, attributes socialisation influence to verbal communication about the EA. However, there remains a parallel between habitual behaviour change in the group environment of the household and in group-based behaviour change programs such as Global Action Plan's *EcoTeams* with respect to the role of social interaction facilitating the discursive nature of the process (Burgess, 2003; Global Action Plan, 2006).

The desirability of the different routes to EA practice from a policy perspective can be assessed with respect to two different criteria. The first such criterion is maximisation of environmental savings. It should be stressed that environmental savings are considered within the narrow view of EA participation versus EA non-participation, rather than overall consideration of environmental impact. Assessment against this criterion is tentative as it relies on self-reported behaviour rather than objective measurements of residual waste weight and consumption of gas, electricity and water because as discussed in chapter 1, it was not practical to incorporate such measurements into the study (p.11). As discussed in chapter 3, self-reported behaviour is often an over-estimation of actual behaviour (Barker et al., 1994; Corral-Verdugo, 1997; Perrin and Barton, 2000); however, rather than taking self-reported

behaviour at face value, the household focus group facilitated the establishment of a more informed picture of actual behaviour (p.63-4).

While logic may suggest that participation in a repetitive EA is more stable if the EA is maintained by a leader (because continued participation in the EA is dependent on one as opposed to multiple individuals), there were many instances of a leader maintaining a repetitive EA on a long-term basis (years) without exhibiting discontent. Thus, while the stability of EA practice based on the route remains an issue for further research to explore, the second criterion against which the different routes to EA practice are assessed is the pool of potential leaders. This may be with respect to the current household (i.e. a new leader to keep a repetitive EA going should the present leader cease to practice the EA) and future households. Assessment against this criterion is also tentative as it relies on an interpretive evaluation of the likelihood of an individual acting as a leader with respect to EA adoption and practice in possible future scenarios often based on non-direct lines of questioning. There is also the further caveat that the tendency of some individuals to act as a leader is dependent on the household context, as discussed in chapter 4 (p.107). With the tentative nature of the assessment borne in mind, the desirability of the different routes to EA practice will nonetheless now be considered firstly with respect to the maximisation of environmental savings and then with respect to the pool of potential leaders.

The assessment of the different routes to EA practice with respect to the maximisation of environmental savings focuses on the environmental savings achieved by the enactor/present maintainer due to the complication of also considering the initial maintainer. Assessment also differs between recycling/composting and wider EAs. With respect to the former, the maximisation of environmental saving equates to recycling at the maximum level. Recycling everything that can be recycled requires the recycling of all materials facilities allowed for and the capture of all items within material types. However, given that the actual extent of within-material type recycling was difficult to gauge from self-reported behaviour, and the prevalence of size-, quantity-, room-dependent behaviour across recycling maintainers, environmental savings will be considered in terms of the recycling repertoire, although this is not to underestimate the potential effect from the former issue (Brook Lyndhurst, 2004b). Therefore, maximisation of environmental savings is equated with higher level recycling. As such, and as noted earlier, recycling repertoire was associated with self-organisation as opposed to the route to recycling practice. Thus it appears that as long as self-organisation is high, then all routes to recycling practice are equally desirable in terms of maximising environmental savings.

With respect to wider EAs, the different routes to EA practice may or may not be equally desirable in terms of the maximisation of environmental savings depending on the EA in question and openness of EA practice to all/the domestic division of labour. For example, if the practice of a repeated act is open to all household members, then environmental savings are maximised by all household members practicing the EA as opposed to one household member practicing the EA. Thus, routes involving the household (collective form), a leader (widely influential form) or individuals as the present maintainer are more desirable than a leader (non-influential form) as the present maintainer. This is also the case with respect to laundry-related repeated acts and repeated purchases if the domestic division of labour is equitable. However, if the domestic division of labour is inequitable, then environmental savings are still maximised if the individual responsible for the domestic task in question also practices the EA. Thus, routes involving the household (representative form) or a leader (non-influential form) as the present maintainer are equally desirable. The nature of the majority of one-off acts/purchases means that environmental savings are maximised by one household member practicing the EA regardless of openness of EA practice to all/the domestic division of labour. Thus, routes involving the household (collective form), the household (representative form) or a leader as the enactor are equally desirable.

The tentative hierarchy of desirability in terms of the maximisation of environmental savings presented has important implications for behaviour change policy makers and practitioners. With respect to recycling/composting, one-off acts/purchases and particular scenarios involving repeated acts and repeated purchases, the leader to leader route to EA practice is not intrinsically 'substandard'. Consequently, behaviour change professionals do not need to reach and convert all individuals with low relative interest to create a population whereby participation in a particular EA is the normal behaviour of households; rather, behaviour change professionals need only to target and increase the relative interest of one individual per non-participating household. In the scenarios whereby the leader to leader route to EA practice is the least desirable in terms of maximising environmental savings, targeting and increasing the relative interest of one household member has the potential to result in changing the behaviour of other household members through socialisation influence from the leader (Grønhøj and Ölander, 2007).

The importance of high self-organisation over route to recycling practice highlights that behaviour change policy makers and practitioners should pay greater attention to the

issue of self-organisation. It should be made clear that the need for high self-organisation is in addition to the need for at least one individual in the household with high enough relative interest to keep recycling going. However, as highlighted earlier, high relative interest is not a guarantee of high self-organisation. Recognition of the potential for further environmental savings from existing recycling households has gained increased prominence in recycling policy circles recently (Brook Lyndhurst, 2004b; Pocock et al., 2008). Facilitating high self-organisation in existing recycling households offers a means of increasing environmental savings both in terms of recycling repertoire and within-material recycling. This of course depends on the household being aware of all the materials they can recycle. Furthermore, facilitating high self-organisation in existing recycling households also offers a means of increasing the likelihood of participation in recycling which does not stall. With respect to households which lack at least one individual with high enough relative interest to keep recycling going, which may represent stalled recycling households or non-recycling households, while it is clear that exposure to a recycling system can increase low relative interest, it remains unanswered whether creating high self-organisation without increasing the relative interest of at least one individual can be enough to secure the maintenance of recycling. Practical ways of facilitating high self-organisation will be highlighted in the following chapter (p.253).

In comparison to the assessment of routes to EA practice with respect to the maximisation of environmental savings, a much clearer hierarchy of desirability is evident with respect to the pool of potential leaders. Here, the likelihood of a household member taking on the role of leader in possible future scenarios is increased when the individual exhibits high relative interest (an exception to this is where individuals with low relative interest nonetheless practice the EA as a result of habit). Although generally speaking, individuals must be prepared to 'make the EA happen' in their household, this does not necessarily mean that they must consciously assign themselves the role of leader. Therefore, the household to household, individuals to household and leader to household routes to EA practice are equally desirable. The pool of potential leaders remains unchanged from EA adoption with respect to the former two routes. However, the leader to household route to EA practice involves the creation of potential leaders due to the socialisation of individuals with low relative interest with respect to at least relative interest if not also behaviour. The leader to leader route to EA practice is least desirable due to its failure to produce other household members with high relative interest.

Given the relative desirability of the leader to household and the leader to leader to leader routes to EA practice with respect to the pool of potential leaders highlights that in order to help secure current and future household participation in a particular EA, behaviour change professionals should aim to facilitate movement from the less desirable leader to leader route to the more desirable leader to household route to EA practice. This is also the case in some cases with respect to the maximisation of environmental savings. As discussed earlier, socialisation influence with respect to relative interest and behaviour involved physical prompting (in the case of recycling/composting) or continued practice (in the case of wider repetitive EAs), verbal prompting and advocation. Thus, the facilitation of high self-organisation also has benefits in terms of producing permanent behaviour change. Facilitating advocation of the EA also offers a means of producing potential leaders, and facilitating communication within the household about EAs has other benefits which will be returned to later (p.245).

It should be reiterated that the above assessment of the desirability of the different routes to EA practice is tentative in nature both with respect to the maximisation of environmental savings and the pool of potential leaders. The objective assessment of the routes to EA practice with respect to the two criteria is thus an important avenue for future research. In addition to the need to establish whether the analysis presented here stands up against objective assessment, it will be particularly interesting to establish whether the individuals to individuals and the individuals to household routes to repetitive EA practice are indeed equally desirable in terms of environmental savings. While it appears that high relative interest across household members facilitates the development of collective recognition that EA participation is a shared goal, there also remains the unexplored possibility that collective recognition may serve to heighten relative interest.

An advanced conceptual framework of patterns of adoption and practice across environmental action repertoires

The original framework of patterns of adoption and practice across EA repertoires (hereafter known in this section as the 'original framework') was a descriptive framework which consisted of two components – **'General responsibility for environmental action adoption and practice'**, and **'Types of environmental action repertoires'**. The advanced framework of patterns of adoption and practice across EA

repertoires (hereafter known in this section as the 'advanced framework') consists of three core components – patterns of motives underpinning EA repertoires, routes to EA repertoire practice and patterns of the gradual development of the EA repertoire. The patterns within these three components are summarised in Table 5 and will be subsequently discussed. Discussion of the different routes to EA repertoire practice moves the debate into the realm of the desirability of the routes from a policy perspective. Discussion of patterns of the gradual development of the EA repertoire is combined with discussion of the acquisition of knowledge for action. Finally, communication within the household about EAs is discussed.

Table 5. Summary of the revised conceptual framework of patterns of adoption and practice across environmental action repertoires.

		Pattern and description		
Component	**Patterns of motives underpinning EA repertoires**	**Environmental household theme**	**Saving money and/or waste aversion household theme**	**No motivational household theme**
		• Household members exhibit similar high relative interest in minimising the environmental impact of the household's activities wherever possible, and collective recognition that this orientation is a shared goal • All EAs part of living in an environmentally responsible way • Broadly active acquisition of knowledge for action • EAs normal topic of conversation, discussion of how to practice EAs	• Household members exhibit similar high relative interest in reducing unnecessary spending on gas/electricity and/or avoiding domestic waste and wasted energy, and collective recognition that this orientation is a shared goal • Non-relevant EAs underpinned by different motives	• Different EAs underpinned by different motives
	Routes to EA repertoire practice	**Household/leader/individuals to household**	**Leader to household**	**Leader to leader**
		• Household as the general EA enactor/present maintainer • No single individual solely responsible for EA repertoire development	• Leader to household dominant route to EA practice • Household EA officer with respect to EA repertoire development	• Leader to leader dominant route to EA practice • Household EA officer with respect to EA repertoire development and practice
	Patterns of gradual EA repertoire development	**Opportunity dependent**	**Virtuous circle**	**Haphazard**
		• Establishment of a personal philosophy of trying to minimise environmental impact (environmental household theme), followed by EA repertoire development based on opportunity to participate in new EAs	• Participation in one EA leads to participation in another EA and so forth • Active acquisition of knowledge for action • Can lead to environmental household theme	• Addition of each EA to the repertoire has its own explanation • Passive acquisition of knowledge for action • Associated with no motivational household theme

Patterns of motives underpinning environmental action repertoires

'Patterns of motives underpinning environmental action repertoires' in the advanced framework represents a more informed version of **'Types of environmental action repertoires'** in the original framework. The original framework conceptualised three types of EA repertoire in terms of the relationship between EAs – generalised, action by action and compensatory. These patterns were drawn from the individual literature, and therefore their relevance to household EA repertoires needed to be examined. EA repertoires may be underpinned by a motivational household theme, specifically an environmental, saving money and/or waste aversion household theme, or may be underpinned by no motivational household theme. The presence or absence of a motivational household theme is a new concept which expands previously recognised motives for participating in EAs at the individual level to the household level. The identification of an environmental household theme represents the confirmation of the applicability of the generalised pattern of participation in EAs (i.e. underpinned by an environmentally-orientated consumption philosophy) (McDonald et al., 2006; Thøgersen and Ölander, 2006) at the household level. The identification of a saving money and/or waste aversion household theme represents the extension of McDonald et al.'s (2006) identification of a single issue such as energy conservation as a motivator at the individual level to the household level. Indeed, the identification of waste aversion as a motive at the lone EA level and the EA repertoire level supports Defra's (2008b) recognition of a desire to avoid waste as distinct from a desire to reduce environmental impact. The identification of no motivational household theme represents the confirmation of the applicability of the action by action pattern of participation in EAs (i.e. EA participation decided by the specificities of each EA and situation with the lack of any consumption philosophy) (Thøgersen, 2004; McDonald et al., 2006) at the household level. Finally, there was no evidence to support a compensatory pattern of behaviour at the household level. However, this is not a definitive position given that EA non-adoption was not examined.

Routes to environmental action repertoire practice

'Routes to environmental action repertoire practice' in the advanced framework replaces **'General responsibility for environmental action adoption and practice'** in the original framework. The original framework conceptualised general responsibility for EA adoption and practice across the EA repertoire as a spectrum. At one end of the spectrum, one individual ('household EA officer') is generally responsible for EA adoption and practice in a specialised role. At the other end of the spectrum, all

individuals are generally responsible for EA adoption and practice in a shared role. This spectrum was drawn from the HDM literature and therefore its applicability to EAs required investigation. Furthermore, following on from the limited attention paid to factors influencing general responsibility for EA adoption and practice and the nature of shared general responsibility in the household literature (Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007), these issues required further investigation.

The new concept of the route to EA repertoire practice represents the dominant route(s) to EA practice and the general driver of EA adoption and the general EA enactor/present maintainer across the EA repertoire. The three routes to EA repertoire practice map onto the original framework's spectrum of general responsibility for EA adoption and practice across the EA repertoire. The household/leader/individuals to household route to EA practice represents all individuals being generally responsible for EA adoption and practice in a shared role. The leader to leader route to EA practice with its household EA officer with respect to EA repertoire development and practice represents one individual being generally responsible for EA adoption and practice in a specialised role. The leader to household route to EA practice with its household EA officer with respect to EA repertoire development represents one individual being generally responsible for EA adoption across the EA repertoire in a specialised role but all individuals being generally responsible for EA practice in a shared role. Thus, the original framework's spectrum of general responsibility for EA adoption and practice has been confirmed along with identification of two types of household EA officer – one who drives the development of the EA repertoire and is responsible for EA practice, and one who drives the development of the EA repertoire and the subsequent socialisation of the household with respect to EA practice.

The nature of shared general responsibility for EA adoption and how the inter-related factors of sex role orientation and the domestic division of labour shape the route to EA repertoire practice was discussed in chapter 6 (p.196-7). The relevance of these factors is broadly in keeping with the findings of Carlsson-Kanyama and Lindén (2007) and Grønhøj and Ölander (2007). However, in a parallel manner to the advanced framework of the adoption and practice of lone EAs in households, there is a direct link between the domestic division of labour and general responsibility for EA adoption and practice, although the role of sex role orientation in determining the domestic division of labour is recognised. This contrasts with gender directly influencing general responsibility for EA adoption and practice through the domestic division of labour as Carlsson-Kanyama and Lindén (2007) and Grønhøj and Ölander (2007) indicate. Thus, at both the level of lone EAs and EA repertoires, this study paints a much less

gendered picture than other studies in the household literature. This is particularly interesting given that Grønhøj (2006) and Grønhøj and Ölander's (2007) studies are set in Denmark and Carlsson-Kanyama and Lindén's (2007) study is set in Sweden, two cultural contexts which have been demonstrated to be more egalitarian in terms of the domestic division of labour than the UK (Knudsen and Wærness, 2008). However, there are a number of reasons as to why this may be the case.

In contrast to other studies within the household literature, this study has included a wider range of household types than just couple and family households. Many of the shared households consisted of individuals of the same sex, thus making the division of domestic labour along gendered lines less relevant. Furthermore, as Oates and McDonald (2006) point out, more gendered roles in relation to the domestic division of labour are to be expected once couples have children (Gray, 1992; Nordenmark and Nyman, 2003). Indeed, Oates and McDonald (2006) found some indications of this with respect to recycling. Couples with children were the sole focus of Grønhøj (2006) and Grønhøj and Ölander's (2007) studies and such households were a large proportion of Carlsson-Kanyama and Lindén's (2007) sample. In contrast, many of the couples in this study did not have children. Finally, a number of households in this study exhibited an environmental household theme and as such were actively striving to minimise the environmental impact of the household's activities wherever possible. Judkins (2004) identified an equitable division of domestic labour as a feature of such households. Thus, before the gendered nature of involvement in EA adoption and practice in the UK-context is fully downplayed, this issue deserves further attention. However, it is interesting to note that Oates and McDonald's (2006) study with a sample more representative of the UK population also demonstrated a less gendered picture of involvement in recycling adoption and practice. From this evidence base, I therefore urge caution with respect to Grønhøj and Ölander's (2007) suggestion of targeting promotional efforts at the one household member perceived to be responsible for the desired behaviour change in terms of gender.

Given that there are multiple routes to EA repertoire practice, it is pertinent to consider the differentiation of these routes in terms of their desirability from a policy perspective, in a similar manner to the different routes to lone EA practice. Desirability can be assessed with respect to two different criteria. The first such criterion is the extent of the EA repertoire, given that environmental savings at the EA repertoire level cannot be assessed without objective measurement; participation in the widest range of EAs is desirable from a policy perspective. The second criterion is the pool of potential

household EA officers. As with the different routes to lone EA practice, the tentative nature of the following assessment is borne in mind.

The most comprehensive EA repertoires were underpinned by an environmental household theme, whether the household theme was established through a transformative experience and EA repertoire development then followed the opportunity dependent pattern, or was the result of a virtuous circle of EA repertoire development. Similarly, this was also the case whether the household/leader/individuals to household or the leader to household route to EA repertoire practice was followed. However, although EA officers from households which followed the leader to leader route to EA repertoire practice exhibited a similar environmentally-orientated consumption philosophy, EA repertoires in these households were less comprehensive. As such, the leader to leader route to EA repertoire practice appears to be least desirable. This position is tentative as the household EA officers in question did indicate that the opportunity to participate in particular EAs was limited due to contextual conditions such as financial considerations and not owning their own home. However, it was also evident that in some cases other household members had been or continued to be a barrier to participation in particular EAs due to active opposition. There were also instances of household EA officers inaccurately presuming that other household members would be opposed to the EA, and therefore abandoning its adoption. Thus, it appears that a lack of homogeneity in terms of environmental motivation is a barrier to the most comprehensive EA repertoires.

The likelihood of any household member taking on the role of household EA officer in possible future scenarios is increased when the household is the general EA enactor/present maintainer. Therefore, the household/leader/individuals to household and leader to household routes to EA repertoire practice are equally desirable. The leader to leader route to EA repertoire practice is least desirable due to its failure to produce any further potential household EA officers.

The tentative hierarchy of desirability in terms of the extent of the EA repertoire and the pool of potential household EA officers has important implications for behaviour change policy makers and practitioners. In contrast to the relationship between route to lone EA practice and environmental savings in which the leader to leader route was able to maximise environmental savings under certain circumstances, it appears that the most comprehensive EA repertoires can only be achieved if *all* household members embrace an environmentally-orientated consumption philosophy, thereby avoiding the

leader to leader route to EA repertoire practice. Of course, this has to be coupled with an infrastructure of opportunity to participate in the maximum range of EAs. This calls into question the rationale of promoting EA participation in non-environmental terms such as financial self-interest. This point is strengthened by returning to points made in chapter 1 that the EAs of focus represent *progress towards* sustainable consumption, not sustainable consumption per se, and that sustainable consumption requires a wholesale rethinking of affluent lifestyles and material consumption. For example, as Crompton (2008, p.23) states:

> *"...it is not good enough that people should change their incandescent light bulbs for energy-efficient alternatives if they put the money that they save on their electricity bill towards buying more electrical appliances...or, for that matter, towards a weekend flight to Madrid..."*

Indeed, Crompton (2008) calls for the environmental movement to cease its indifference to the motives that underlie behaviour and focus on motivating behaviour change in terms of intrinsic values. In contrast, the 'hooks' that community-based organisations use in their attempts to facilitate behaviour change are often ones of self-interest (Brook Lyndhurst, 2007a).

In terms of facilitating the establishment of environmental household themes, the research findings point to two strategies. Firstly, where household EA officers were successful in establishing an environmental household theme, they had advocated this stance within the context of close interpersonal relationships. Thus, facilitating advocation of an environmentally-orientated consumption philosophy in households open to change may prove beneficial. Secondly, given that environmentally-orientated consumption philosophies were often established at an early age through transformative experiences, creative communication of the environmental message to young people is also an option. The latter strategy is more of a long-term one. Indeed, creation of the values needed to secure significant behaviour change will take time (Crompton, 2008). Nonetheless, there remains scope to increase the uptake of EAs working within the existing structure of motives (Defra, 2008b), as will be discussed in the following section.

The objective assessment of the routes to EA repertoire practice with respect to environmental savings (or ideally holistic environmental impact) and the pool of potential household EA officers is an important avenue for future research. On the basis that the tentative assessment holds, the reasons underpinning the relationship between route to EA repertoire practice and EA repertoire/environmental savings deserves further attention. In addition to active opposition and presumed opposition in

households where an environmental orientation is not shared, there remains the unexplored possibility that environmental motives may be strengthened in the presence of another household member with the same orientation.

Patterns of gradual environmental action repertoire development and the acquisition of knowledge for action

EA repertoires develop gradually rather than in one step. Within this, EA repertoire development may follow three types of pattern – opportunity dependent, virtuous circle and haphazard. Neither the gradual nature of EA repertoire development nor the constituent patterns have been recognised previously at the household level. Thus, **'Patterns of gradual environmental action repertoire development'** is an addition to the advanced framework. However, the virtuous circle pattern has been discussed at the individual level as a consequence of a general environmental stance guiding behaviour (Thøgersen and Ölander, 2003; Thøgersen, 2004). Thus, the applicability of this pattern to the household level has been confirmed.

The relationships between the extent of EA repertoires, patterns of motives underpinning these repertoires, patterns of EA repertoire development and from where and how knowledge for action is acquired can be used to inform how to accelerate EA repertoire development and ultimately produce more comprehensive EA repertoires. Of the three patterns of EA repertoire development, actively seeking information about EAs in a consistent manner across the EA repertoire was a characteristic of the opportunity dependent and virtuous circle patterns. With respect to the former, the active acquisition of knowledge for action was related to this pattern involving an environmental household theme and as noted earlier, an environmental household theme would appear to be a prerequisite to the most comprehensive EA repertoires. While there is still scope left for such households to expand their EA repertoire further, their information-seeking behaviour means that if the opportunity is there, then household members will find out about it, report back to others and likely act accordingly. Thus, with respect to these households, behaviour change policy makers and practitioners should be concerned with advancing the opportunities to participate in EAs, e.g. reducing the financial barriers surrounding the installation of solar power systems, although of course this strategy applies across all households.

The greatest potential to accelerate EA repertoire development and produce more comprehensive EA repertoires through behaviour change strategies lies with households following the haphazard pattern of EA repertoire development. While conclusions cannot be drawn from this study about the frequency of this pattern, the

dominance of an entirely passive approach to the acquisition of knowledge for action in Steedman's (2005) study suggests that the haphazard pattern may be dominant. The haphazard pattern was associated with a saving money and/or waste aversion household theme but most predominantly no motivational household theme. Such households exhibited EA repertoires in the mid-range of the spectrum leaving them with the potential to do more. Whilst not looking to do more, as these households demonstrated historically, they will expand their EA repertoire if provided with a rationale for doing so with such a rationale relating to any of a number of motives. This highlights the role of individually-marketed advice to such households, i.e. information/advice tailored to the needs of particular households. Indeed, the following chapter discusses the potential for the household focus group method to be developed into a behaviour change intervention (p.255).

Communication within the household about environmental actions

The original framework of the adoption and practice of lone EAs in households identified communication within the household about EAs as an issue warranting further attention (Pennartz and Niehof, 1999) given that this issue has not received attention beyond the work of Grønhøj (2006) and Grønhøj and Ölander (2007). In a parallel manner to the active/passive acquisition of knowledge for action, communication within the household about EAs is most informatively considered within the broader context of how households approach EA adoption and practice across the EA repertoire. As such, only households exhibiting an environmental household theme talked about EA participation as a normal topic of everyday conversation. Similarly, communication about how to go EAs such as recycling and repeated purchases was only particularly prominent in households with EA household themes involving very high relative interest, which in turn tended to be households with an environmental household theme. In other households, communication about particular EAs was initiated by a leader and represented advocation and verbal prompting. Thus, communication depended on the leader's orientation in terms of consensus requirement and behaviour focus.

Communication within the household about EAs was found to have a number of benefits. Firstly, EA practice can be brought into discursive consciousness by verbal prompting. In addition, the household focus group discussion itself also served to bring practices into discursive consciousness. Secondly, the transition from socialisation influence with respect to behaviour only to permanent behaviour change (and therefore the creation of potential leaders) appeared to depend on the leader advocating the EA.

Thirdly, advocation was also important in the spread of an individual's environmentally-orientated consumption philosophy to other household members. Although these points appear to highlight the benefits of advocation it is important to bear in mind an alternative explanation. Grønhøj (2006) found that communication was usually negligible where only one individual had an interest in the EA which she attributed to conflict-minimising behaviour. Thus, rather than advocation facilitating an increase in relative interest, leaders may be more likely to advocate if another household member represents a 'relatively open door'.

Lack of communication within a household about an EA was not necessarily problematic. For example, verbal prompting was characteristically lacking in households in which the household (collective form) was the recycling maintainer, which was a consequence of the recycling process flowing smoothly. Similarly, Grønhøj (2006) noted that EAs which had become habit were not on the communication agenda. However, a lack of communication about recycling was problematic where low self-organisation was evident. There are indications that talking about recycling may assist with establishing high self-organisation. A lack of communication was also problematic in the situations where a household EA officer abandoned EA adoption after inaccurately presuming that other household members would be opposed to the EA. This links to Grønhøj and Ölander's (2007, p.230-1) point that *"established habits and routines are never challenged if couples avoid talking about these issues"*.

Implications for the field: the household as the more appropriate unit of analysis

The vast majority of previous research focusing on participation in EAs has taken the individual to be the unit of analysis. Although a number of authors have argued the case for the household perspective to a greater or lesser extent (Åberg et al., 1996; Pennartz and Niehof, 1999; Hobson, 2001; Judkins, 2004; Grønhøj, 2006), only a limited number of studies have taken this approach (Åberg et al., 1996; Shanahan, 2003; Judkins, 2004; Grønhøj, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007). These studies have shed light on particular issues such as communication within the household about EAs, socialisation influence from one household member to another, and the gendered nature of EA adoption and practice, and have tended to focus on one or a particular selection of EAs in couple/family households. In contrast, the advanced conceptual framework of the adoption and practice of EAs in households represents holistic understanding of how EAs are

adopted and practiced at both the level of lone EAs and EA repertoires. The conceptual framework is also holistic in two further senses, namely that it covers households in their various guises (i.e. not just couples/families) and different levels of engagement in EAs. Given this new conceptual rendering, it is appropriate to use the advanced framework to further the argument that EA adoption and practice is more informatively considered from the household perspective.

The identification of multiple drivers of EA adoption and the EA enactors/maintainers across the variety of EAs, which represents a spectrum of household member involvement in EA adoption and practice, highlights that while households may be homogeneous sites of relative interest and behaviour, they may also be heterogeneous in these respects. Where household members share a similar relative interest in a particular EA, this does not necessarily translate into identical behaviour. Conversely, behaviour may be homogeneous across household members despite some household members exhibiting low relative interest. Furthermore, while similar relative interest may share a common make-up, each individual's position may also be the product of a unique combination of factors pertaining to their motivation, opportunity and ability to participate in the EA and underlying circumstances. Thus, it is problematic to assume that one individual's perspectives and behaviour are representative of the household, an approach implicitly evident across the individual literature. Within discussion of their proposition that there is one recycler per household and this individual is likely to be female, Oates and McDonald (2006) noted that this issue may explain why studies attempting to identify the demographics of the recycler have produced conflicting results: *"when these studies ask individuals, male or female, whether they recycle, it may be some are answering not on their own behalf, but on behalf of their household"* (p.424).

Oates and McDonald's (2006) point can also be broadened to offer an explanation as to why quantitative studies have frequently produced conflicting results with regard to the extent to which particular factors determine behaviour. Thus, in the case of an entirely unequal or highly unequal involvement distribution, a less involved individual may respond to a survey in terms of their personal attitudes, experience, etc. but the behaviour evident at the household level. This is not to suggest that surveying the 'wrong' individual fully accounts for the discrepancy in quantitative research findings as this would be to dispute that behaviour is shaped by a broad range of internal and external factors which may vary across EAs and individuals (Stern, 2000; Barr, 2002; Kollmuss and Agyeman, 2002; Jackson, 2005; Darnton et al., 2006). Nonetheless, the

potentially compounding influence of attempts to link the perspectives of one household member to overall household member should not be dismissed.

The individual literature has identified a range of factors which influence participation in EAs. Such factors are evident in the advanced framework of the adoption and practice of lone EAs in households as part of the **'Shaping relative interest'** component (Figure 25). However, the advanced framework also demonstrates that a wider still set of factors shapes household member involvement in EA adoption and practice and the maintenance of repetitive EAs. These factors vary across EAs and households and within households. This illustrates that using the household as the unit of analysis provides a more complete picture of the factors shaping EA adoption and practice (Judkins, 2004). However, it should be noted that the advanced framework incorporates a greater array of factors than Judkins' (2004) work, largely as a result of the latter focusing on households explicitly working towards sustainability. In the first instance, the factors shaping household member involvement in EA adoption and practice represent **'Situational characteristics'**, **'Household characteristics'** and **'Individual characteristics'**. Although grouped in this manner, the majority of these factors exhibit a common characteristic, namely a fundamentally social element. For example, verbal prompting and advocation represent direct interactions, while physical prompting represents an indirect interaction between a leader and another household member. Sex role orientation and the domestic division of labour represent the roles that individuals take on in the household. Consensus requirement and empathy represent the consideration of possible courses of action with respect to other household members. Relationship quality relates to the nature of inter-personal relationships. Going a step back to consider **'Shaping relative interest'**, while external circumstances such as the public debate on environmental issues and contextual conditions are undoubtedly important in shaping relative interest, relative interest and behaviour are also shaped within the household itself whether this involves the establishment of behaviour from a young age in the family home or socialisation influence in the current household. Furthermore, additional factors also influence the **'Maintenance of repetitive environmental actions'**, which demonstrate that EA practice can be inextricably part of the normal, everyday life of the household. Thus, household members cannot be reduced to individual actors devoid of the social context of the household (Grønhøj, 2006). Rather, the social setting of the household should be the platform from which research into EA participation proceeds from.

Taking the household as the more appropriate unit of analysis with respect to the study of EA adoption and practice *"requires the recognition of the complexity of the*

household system as an agent in modern society" (Åberg et al., 1996, p.64). Indeed, this complexity is inherently evident in the research findings and the advanced framework. Although this research has sought a holistic understanding of the adoption and practice of EAs in households, one way in which the research agenda should now move forward is the more detailed investigation of particular aspects of the advanced framework such as the issue of overt conflict and decision making strategies, the role of empathy, communication within the household about EAs particularly as an aspect of socialisation influence from a leader to other household members, and the way in which household EA officers interact with individuals with low relative interest across the EA repertoire. The traditional method of the EA participation literature, namely surveys, cannot maintain a holistic view of these phenomena, nor are sensitive enough to capture the intricate detail of the processes involved (Cassell and Symon, 1994; Patton, 2002; Bryman and Bell, 2003; Creswell, 2007). Thus, a shift to using the household as the more appropriate unit of analysis also requires a shift to the greater utilisation of qualitative research approaches.

Chapter 8

Conclusions

This chapter sets out the conclusions of the thesis, beginning with the contributions of the thesis. Chapter 3 highlighted that the research process and outcomes should be evaluated using criteria that are consistent with the internal meaning structure of constructivist grounded theory methodology (Sparkes, 2001), which as suggested by Charmaz (2006) include credibility, originality and usefulness (p.61). Thus, discussion of the thesis' contributions includes evaluation of the research outcomes, namely the advanced conceptual framework of the adoption and practice of EAs in households and some particular findings of interest, against Charmaz's (2006) criteria of originality and usefulness. This is followed by presentation of the practical implications of the research findings for behaviour change policy makers and practitioners. The limitations of the study are then considered which allows for evaluation of the advanced framework against Charmaz's (2006) criterion of credibility. Finally, the thesis concludes with suggestions for future research.

Contributions of the thesis

In response to stark warnings about the state of the natural world, UK environmental policy circles have become increasingly focused on how to increase public participation in EAs as a means of making progress towards sustainable consumption (Jackson, 2006). The field of research into EA participation has produced a voluminous literature with a corresponding understanding of the factors/relationships between factors which influence behaviour and also an understanding of how to most effectively bring about voluntary behaviour change. However, such research has generally taken the individual as the unit of analysis, thereby ignoring that EA adoption and practice takes place in the social context of the household. Therefore, this thesis aimed to advance understanding of EA adoption and practice from the household perspective. This aim has been achieved via empirical investigation of the adoption and practice of EAs in households through a qualitative approach utilising household focus groups within a constructivist grounded theory methodology. This work remains one of only a handful of studies which has examined EA participation squarely from the household

perspective (Åberg et al., 1996; Shanahan, 2003; Judkins, 2004; Grønhøj, 2006; Carlsson-Kanyama and Lindén, 2007; Grønhøj and Ölander, 2007).

In terms of theoretical contributions, the limited and fragmented work which has examined EA participation from the household perspective has been brought together and integrated with the household decision making literature and the literature which has examined EA participation from the individual perspective. This integration took place in light of the research findings, resulting in a conceptual framework of the adoption and practice of EAs in households (covering both lone EAs and EA repertoires) which is grounded in the data. The conceptual framework is applicable to the spectrum of commonly-promoted EAs, the variety of forms that households take in modern society, and different levels of engagement in EAs. Thus, this conceptual rendering represents holistic understanding of the adoption and practice of EAs in households, which was previously missing from the EA participation literature.

Within this holistic advancement of understanding of the adoption and practice of EAs in households, there are a number of elements which represent important empirical contributions in their own right. Firstly, the general position of the determinants of behaviour body of knowledge is that there is concordance between attitudes towards, and participation in, a particular EA, unless favourable attitudes cannot be translated into action due to a lack of opportunity or ability. However, this position is challenged by the different relationships between relative interest and behaviour within the different EA enactors/maintainers. For example, individuals with favourable attitudes towards an EA may not necessarily be involved in its practice, depending on the domestic division of labour. Of greater significance, individuals with unfavourable attitudes towards a particular EA can nonetheless practice the EA due physical prompting, verbal prompting, and empathy. This decoupling of attitudes and behaviour due to factors pertaining to the social context of the household has not been recognised previously by the EA participation literature.

Secondly, the concept of the presence or absence of an EA household theme, along with an understanding of how such household themes develop, is central to the variety of drivers of EA adoption, EA enactors/maintainers and routes to EA practice. Furthermore, the presence or absence of a motivational household theme, along with an understanding of how household themes develop, lies at the heart of explaining the nature of household EA repertoires. The make-up of these household themes (i.e. similar relative interest in the EA/motive *and* collective recognition that EA participation/motive is a shared goal) and insights into how household themes develop,

particularly how the high relative interest of a leader is established in the first instance and then transferred to other household members through the leader's physical and verbal actions, has advanced current conceptualisation of motivation to engage in EAs.

Thirdly, while the concept of individuals taking on roles within the household occupies a central position in the HDM literature, this concept had thus far only began to be fully recognised by the EA participation literature, e.g. Díaz Meneses and Beerli Palacio (2005), Oates and McDonald (2006). Indeed, this study has found that household members may take on a variety of specialised roles from responsibility for particular recycling tasks to the role of leader with respect to EA adoption and practice, to the broader role of household EA officer with respect to EA repertoire practice and/or development. Furthermore, the finding that the assignment of specialised roles to individuals, particularly the role of household EA officer, may be the result of a gradual process over a period of time is a new insight.

Returning to the evaluation of the conceptual framework of the adoption and practice of EAs in households, the reasons which maximise the originality of the conceptual framework (i.e. holistic understanding of the adoption and practice of EAs in households which is applicable to the spectrum of commonly-promoted EAs, the variety of forms that households take in modern society, and different levels of engagement in EAs), also mark its usefulness to behaviour change policy makers and practitioners. Furthermore, in terms of usefulness, by beginning to consider the different ways in which EAs are adopted and practiced from a policy perspective, the conceptual framework responds to Defra's (2006c) urge that new research should be policy-focussed.

This thesis also makes a number of inter-related methodological contributions. Firstly, household focus groups have been established as a method of data collection. In coining this term, the focus group literature has been integrated with the qualitative family research literature, thus adding to the diversity of ways in which focus groups can be used in the social sciences. Secondly, further weight has been added to the position that tapping into the detail of EA adoption and practice is facilitated by the employment of activities within interviews (Oates and McDonald, 2002; Grønhøj, 2006). The technique of asking interviewees to diagrammatically represent EA adoption and practice represents an original tool which is now at the disposal of qualitative researchers. Thirdly, the extension of this interview technique into the data analysis process represents an original, visual way of organising, presenting and ultimately making sense of qualitative data about the processes by which EAs are adopted and

practiced. Indeed, this approach to data analysis could be usefully applied to qualitative research examining other types of processes within households (both consumption-based processes and beyond).

Practical recommendations for policy makers and practitioners

The aim of this thesis has been underpinned by the point that an understanding of the adoption and practice of EAs in households can be used to inform behaviour change strategies. The research findings lead to a set of key practical recommendations for behaviour change policy makers and practitioners, which will now be discussed. Where appropriate, these approaches will be categorised according to the 'enable, encourage, engage, exemplify' ('4 Es' framework presented in the UK government's sustainable development strategy (HM Government, 2005), as advocated by Defra (2006c). It should be noted that the need of policy makers to provide an infrastructure which facilitates EA participation such as access to good quality recycling services and public transport (enabling approaches) is taken as given (Sustainable Consumption Roundtable, 2006). As such, complementary strategies are considered.

The discussion will firstly focus on practical recommendations of specific relevance to recycling/composting. One of the key findings is the recognition of high self-organisation as facilitating long-term participation in recycling, a comprehensive recycling repertoire (regardless of the route to recycling practice), and enhancing the capture of items within material types. Furthermore, given that individuals may not necessarily appreciate how to create a recycling system, assisting households in this area is likely to be beneficial. Such assistance can be regarded as enabling in terms of the 4 Es framework.

Focusing firstly on the formal storage points aspect of high self-organisation, it is evident that planning regulations should support the integration of such points into the design of new-build homes. Two further strategies are evident, both of which are recognised to a greater or lesser extent by Brook Lyndhurst (2004b) and Hansmann et al. (2006). Firstly, public campaigns should encourage the use of formal storage points. For example, the *Recycle Now* campaign website advocates placing a recycling container next to the bin (WRAP, 2008a). However, there is scope to go further than this, such as providing more elaborate advice and showing examples of formal storage points, particularly in clearly small areas to help overcome perceptions of storage space required for comprehensive recycling. Secondly, local authorities

could provide logistical assistance to households by providing an internal receptacle for the storage of recyclables. Such receptacles could either be provided free of charge or subsidised in a similar manner to compost bins (WRAP, 2008a). Whilst acknowledging the cost implications for local authorities, costs may be recouped to a greater or lesser extent through reduced landfill/increase recycling tonnages. The further consideration of this issue would clearly benefit from research into the quantified impact of high self-organisation on the capture of recyclables.

Focusing on the second element of high self-organisation, namely the incorporation of recycling tasks into domestic routines, I support Oates and McDonald's (2002, p.13) contention that recycling *"could be positioned as an ordinary domestic task that requires little extra effort or thought, but which is integral to modern consumer lifestyles"*. Indeed, given the incorporation of further repetitive EAs into domestic routines, I would also extend this positioning accordingly. However, as highlighted in the previous chapter, such positioning should be along gender-neutral lines (p.241). This message can be conveyed in communication materials both explicitly and implicitly. For example, recommending the incorporation of specific recycling tasks into specific domestic routines and providing related quotes from recyclers, and using visuals demonstrating the domestic nature of recycling tasks. These points are already evident to some extent in the current *Recycle Now* campaign website (WRAP, 2008a), and should also be utilised in local authority communication materials.

Lastly in terms of specific relevance to recycling/composting, the gradual development of the recycling repertoire in the multi-factor dependent pattern demonstrates that recycling repertoire can become more comprehensive as experience of recycling leads to higher relative interest and a rethinking of logistical barriers. Thus, public campaigns aimed at non-recyclers *may* be advised to encourage the recycling of a limited repertoire of materials in the first instance. However, as this message may also promote complacency among recyclers, this strategy should be investigated before implementation.

Although intentionally setting out to influence the relative interest and behaviour of other household members is not a prerequisite to an individual acting as a leader or a household EA officer, some leaders are this way inclined. Indeed, the *Survey of Public Attitudes and Behaviours towards the Environment 2007* carried out by Defra reported that 20 per cent of respondents claimed that they tried to persuade people they knew to become more environmentally friendly (Hayward et al., 2007). Thus, there is clearly scope to provide the public with advice about how to most effectively promote

participation in EAs in their household (and indeed in other households). The 4 Es framework recognises the use of personal contacts as a means of engaging with the public. Thus, equipping interested individuals with appropriate knowledge can be regarded as a strategy to enhance engagement. Such advice should cover issues such as the benefits of putting in place a recycling system and encouraging communication within the household about EAs (the benefits of facilitating communication were discussed in the previous chapter). Such advice should be included in guides to 'greener living', e.g. Directgov (2008), and incorporated into the format of behaviour change interventions such as doorstepping campaigns (face-to-face communication with householders often in relation to recycling) and programs such as Global Action Plan's *EcoTeams*.

The final issue to discuss is the potential for the household focus group method itself to be developed into a behaviour change intervention. This proposal is based on the research findings and reviews of the success factors of other community-based behaviour change interventions (Brook Lyndhurst, 2007a; Middlemiss, 2008). Indeed, Fahy and Davies (2007) noted that their waste minimisation exercise with Irish households, which operated along broadly similar lines to the household focus group as a behaviour change intervention, produced positive results in terms of behaviour. The moderator would become charged with enabling and engaging the household to broaden their EA repertoire. As such, they would provide tailored information and advice to the household to override the passive acquisition of knowledge for action. The moderator would 'start from where the household is at' both in terms of EA repertoire and the 'hook' by which EAs are promoted (Brook Lyndhurst, 2007a). Recognising that information alone is not necessarily enough to change behaviour, the moderator would also propose practical strategies to assist EA practice (e.g. high self-organisation) and generally encourage deliberation and communication between household members (Middlemiss, 2008). This format could be coupled with further activities under the encourage heading such as 'freebies' (e.g. energy saving light bulbs) (Brook Lyndhurst, 2007a) and waste and energy audits (Brook Lyndhurst, 2007b). Households could be targeted at key change points, e.g. moving into a new home (Brook Lyndhurst, 2007a). Targeting shared households of students/young adults has, in theory, the potential to produce potential leaders for multiple subsequent households, thus multiplying the impact of the intervention.

Limitations

Both the research process and outcomes can be evaluated against the criterion of credibility (Charmaz, 2006). As discussed in chapter 3, demonstrating credibility with

respect to the research process lies in clear articulation of how sampling and data analysis proceeded (p.61). These issues were documented on p.74-5 and from p.80 onwards respectively. Thus, the credibility of the advanced framework of the adoption and practice of EAs in households will be considered here in terms of the study's limitations.

Tapping into the detail of EA adoption and communication within the household about EAs proved challenging, as similarly noted by Grønhøj (2006) and Oates et al. (2008). This was particularly the case with respect to events long in the past. Indeed, in extreme cases household members appeared to articulate what they thought was *likely* to have happened. With respect to EA adoption, interview techniques such as critical incident techniques and laddering may help to facilitate the recall of long-standing participants in EAs. However, there is a strong case that focusing attention on such households may not be the most fruitful research approach, which is also articulated by Tucker et al. (2003). For example, as seen in this study, repetitive EA practice can be particularly stable and prolonged participation in a repetitive EA can serve to increase relative interest. Therefore, it is reasonable to assume that long-standing participants in EAs are likely to continue to behave in this manner. Consequently, it is of more use to focus on 'new recruit' households to allow the exploration of EA adoption in a greater level of detail, thereby increasing understanding of behaviour change in contemporary contexts. Grønhøj (2006) noted that the use of vignettes proved useful for studying communication, but in order to improve the chance of registering all relevant communication, diary methods are required. Diary methods also represent a tool for the further study of EA adoption.

Theoretical saturation was not achieved in this study; rather data collection ceased once enough data was gathered to adequately address the research questions and time constraints meant that further data collection was not practical. As a result, some concepts, concept relationships and patterns were only supported by a limited number of instances and therefore can be regarded as partially saturated, while others were more strongly saturated in relative terms. With respect to the advanced framework of the adoption and practice of lone EAs in households, partially saturated elements include consensus requirement with respect to EA adoption *and* practice, decision script availability and its relationship with consensus requirement, relationship quality, and empathy. The variant of a non-influential leader as the driver of EA adoption involving unsuccessful attempts to influence other household members can also be regarded as partially saturated. The apparent lack of relevance of particular drivers of EA adoption and EA enactors/maintainers to particular activity types should not be

regarded as definitive without further investigation. Similarly, it is unlikely that this study has identified all possible routes to EA practice and therefore the corresponding route map should not be regarded as definitive. With respect to socialisation influence, the mechanisms by which the different means create the different types of socialisation influence remains tentative, in particular the apparent importance of both physical *and* verbal actions (particularly advocation) of a leader in turning socialisation influence with respect to behaviour only into permanent behaviour change. The remainder of the concepts inherent in this conceptual framework were more strongly saturated, particularly the driver of EA adoption, the EA enactor/maintainer, types and means of socialisation influence, factors relating to the maintenance of repetitive EAs, and the remaining situational, household and individual characteristics particularly relative interest and its relationship with behaviour focus, the presence or absence of an EA household theme, and the domestic division of labour.

With respect to the conceptual framework of patterns of adoption and practice across EA repertoires, partially saturated concepts are restricted to the virtuous circle pattern of EA repertoire development. While other concepts are more strongly saturated, the more intricate relationships between different elements of the framework remain partially saturated, such as the apparent mediating role that route to EA repertoire practice plays in translating environmental orientation into the EA repertoire. As with all partially saturated elements of the advanced framework, further data collection would be desirable to increase saturation and strengthen the framework.

While one of the advanced framework's strengths lies in its applicability to households in their variety of forms and different levels of engagement in EAs, there also remains room for the framework to be strengthened through the incorporation of further variation in terms of household type, with the inclusion of homosexual couples and multi-generational family households for example (Oates and McDonald, 2006). While the study sought maximum variation in terms of socio-economic characteristics, this proved difficult to achieve. There is evidence to suggest that ethnicity has a bearing on participation in EAs, with black and minority ethnic households less likely to recycle, although this may a function of other socio-economic characteristics such as affluence and tenure rather than ethnicity itself (MORI Social Research Institute, 2002; Martin et al., 2006). Therefore, the incorporation of greater variation in terms of these types of socio-economic characteristics would also strengthen the framework. Lastly, while focusing on Sheffield households proved advantageous in terms of being able to utilise my local knowledge to contextualise focus group discussions, the framework would also be strengthened by the incorporation of greater variation in terms of recycling

infrastructure. Limitations relating to sample size and theoretical saturation should be considered in the context of the complexity associated with the adoption and practice of EAs in households, and indeed with respect to individuals. For example, McDonald et al. (2006) reached theoretical saturation in their study of green consumers with 81 participants. The heightened level of complexity at the household level suggests that qualitative studies of households may require larger samples still.

Suggestions for future research

Three main avenues for further research are suggested. Firstly, due to the limitations relating to theoretical saturation, continuation of the research programme in its current form would be worthwhile. Such a programme of research could begin to address issues of interest which have come out of the advanced framework, such as a more detailed examination of the management of overt conflict, the role of empathy in EA adoption and non-adoption, the interplay between physical and verbal aspects in socialisation influence from a leader to other household members, and how household EA officers and individuals with low relative interest across the EA repertoire interact.

Secondly, the tentative assessment of the routes to EA practice and the routes to EA repertoire practice in terms of their desirability from a policy perspective requires objective assessment. Environmental savings can be objectively measured in terms of residual waste weight and gas, electricity and water consumption (Staats et al., 2004). Assessing the desirability of the different routes in terms of the pool of potential leaders would be best approached as a longitudinal study, although the time scales involved may not be entirely practical. However, due to their often short-lived nature, shared households of young adults may offer a suitable type of household to focus on.

Thirdly, the potential for the household focus group method to be developed into a behaviour change intervention requires investigation. Such a project would provide a learning opportunity for both researchers and participating households alike, and therefore bears the hallmarks of action research (Fahy and Davies, 2007). In keeping with the need to build an evidence base surrounding the impact of community-based behaviour change programs, the objective measurement of environmental savings should be part of such a research program from the outset (Brook Lyndhurst 2007) and evaluation of the program used as a learning exercise for policy development regardless of the behaviour change outcomes (Defra, 2006c) in order to facilitate progress towards sustainable consumption.

References

Åberg, H., Dahlman, S., Shanahan, H. and Säljö, R. (1996) Towards sound environmental behaviour: exploring household participation in waste management. *Journal of Consumer Policy*, 19(1), 45-67.

Ajzen, I. (1991) The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Allan, G. (1980) A note on interviewing spouses together. *Journal of Marriage and the Family*, 42(1), 205-10.

Annells, M. (1996) Grounded theory method: philosophical perspectives, paradigm of inquiry, and postmodernism. *Qualitative Health Research*, 6(3), 379-93.

Åstedt-Kurki, P. and Hopia, H. (1996) The family interview: exploring experiences of family health and well-being. *Journal of Advanced Nursing*, 24(3), 506-11.

Åstedt-Kurki, P., Hopia, H. and Vuori, A. (1999) Family health in everyday life: a qualitative study on well-being in families with children. *Journal of Advanced Nursing*, 29(3), 704-11.

Åstedt-Kurki, P., Paavilainen, E. and Lehti, K. (2001) Methodological issues in interviewing families in family nursing research. *Journal of Advanced Nursing*, 35(2), 288-93.

Avis, M. (2003) Do we need methodological theory to do qualitative research? *Qualitative Health Research*, 13(7), 995-1004.

Bagozzi, R. P. and Dabholkar, P. A. (1994) Consumer recycling goals and their effect on decisions to recycle: a means-end chain analysis. *Psychology and Marketing*, 11(4), 313-40.

Ball, R. and Lawson, S. M. (1990) Public attitudes towards glass recycling in Scotland. *Waste Management and Research*, 8(3), 177-92.

Bamberg, S. and Schmidt, P. (2003) Incentives, morality, or habit? Predicting students' car use for university routes with the models of Ajzen, Schwartz, and Triandis. *Environment and Behavior*, 35(2), 264-85.

Barker, K., Fong, L., Grossman, S., Quin, C. and Reid, R. (1994) Comparison of self-reported recycling attitudes and behaviours with actual behaviour. *Psychological Reports*, 75, 571-77.

Barr, S. (2002) *Household Waste in Social Perspective: Values, Attitudes, Situation and Behaviour*. Aldershot, Ashgate.

Barr, S. (2003) Sustainable lifestyles: environmental action in and around the home. *Proceedings of the 2003 International Sustainable Development Research Conference held at the University of Nottingham*. Shipley, ERP Environment. p.45-54.

Barr, S. (2007) Factors influencing environmental attitudes and behaviors: a U.K. case study of household waste management. *Environment and Behavior*, 39(4), 435-73.

Barr, S. and Gilg, A. (2003) Environmentalism in Rural Devon. In: Lobley, M. (ed) *Annual Review of the Centre for Rural Research*. Centre for Rural Research, University of Exeter.

Barrett, J., Birch, R., Cherrett, N. and Wiedmann, T. (2005) Exploring the application of the Ecological Footprint to sustainable consumption policy. *Journal of Environmental Policy and Planning*, 7(4), 303-16.

Bazeley, P. and Richards, L. (2000) *The NVivo Qualitative Project Book*. London, Sage.
Beatty, S. E. and Talpade, S. (1994) Adolescent influence in family decision making: a replication with extension. *Journal of Consumer Research*, 21(2), 332-41.
Belch, G. E., Belch, M. A. and Ceresino, G. (1985) Parental and teenage child influences in family decision making. *Journal of Business Research*, 13(2), 163-76.
Belch, M. A., Belch, G. E. and Sciglimpaglia, D. (1980) Conflict in family decision making: an exploratory investigation. In: Olson, J. C. (ed) *Advances in Consumer Research Volume 7*. Ann Abor, Association for Consumer Research. p.475-79.
Belch, M. A. and Willis, L. A. (2002) Family decision at the turn of the century: has the changing structure of households impacted the family decision-making process? *Journal of Consumer Behaviour*, 2(2), 111-24.
Belton, V., Crowe, D. V., Matthews, R. and Scott, S. (1994) A survey of public attitudes to recycling in Glasgow (U.K.). *Waste Management and Research*, 12(4), 351-67.
Berger, I. E. (1997) The demographics of recycling and the structure of environmental behavior. *Environment and Behavior*, 29(4), 515-31.
Berger, I. E. and Corbin, R. M. (1992) Perceived consumer effectiveness and faith in others as moderators of environmentally responsible behaviors. *Journal of Public Policy and Marketing*, 11(2), 79-89.
Bird, C. M. (2005) How I stopped dreading and learned to love transcription. *Qualitative Inquiry*, 11(2), 226-48.
Black, J. S., Stern, P. C. and Elworth, J. T. (1985) Personal and contextual influences on household energy adaptations. *Journal of Applied Psychology*, 70(1), 3-21.
Blackwell, R. D., Miniard, P. W. and Engel, J. F. (2001) *Consumer Behavior*. 9th edition. Fort Worth, Harcourt College Publishers.
Boychuk Duchscher, J. E. and Morgan, D. (2004) Grounded theory: reflections on the emergence vs. forcing debate. *Journal of Advanced Nursing*, 48(6), 605-12.
Brandon, G. and Lewis, A. (1999) Reducing household energy consumption: a qualitative and quantitative field study. *Journal of Environmental Psychology*, 19(1), 75-85.
Bratt, C. (1999) Consumers' environmental behavior: generalized, sector-based, or compensatory? *Environment and Behavior*, 31(1), 28-44.
Bringer, J. D. (2002) *Sexual Exploitation: Swimming Coaches' Perceptions and the Development of Role Conflict and Role Ambiguity*. Unpublished PhD thesis, University of Gloucestershire.
Bringer, J. D., Johnston, L. H. and Brackenridge, C. H. (2004) Maximizing transparency in a doctoral thesis: the complexities of writing about the use of QSR*NVIVO within a grounded theory study. *Qualitative Research*, 4(2), 247-65.
Brook Lyndhurst (2001) *Household Waste Behaviour in London*. Skipton, Resource Recovery Forum.
Brook Lyndhurst (2004a) *Bad Habits and Hard Choices: In Search of Sustainable Lifestyles*. London, Brook Lyndhurst.
Brook Lyndhurst (2004b) *Household Waste Behaviour in London Phase 2: High, Medium and Low Recyclers: Attitudes, Behaviour and Needs*. Skipton, Resource Recovery Forum.
Brook Lyndhurst (2007a) *Environmental Action Fund: A Review of Sustainable Consumption and Production Projects: Year 2 Interim Report (2007)*. London, Department for Environment, Food and Rural Affairs.
Brook Lyndhurst (2007b) *Public Understanding of Sustainable Energy Consumption in the Home: A Research Report completed for the Department for Environment, Food and Rural Affairs by Brook Lyndhurst*. London, Department for Environment, Food and Rural Affairs.
Bryman, A. (1988) *Quantity and Quality in Social Research*. London, Unwin Hyman.

Bryman, A. and Bell, E. (2003) *Business Research Methods*. Oxford, Oxford University Press.
Burgess, J. (2003) Sustainable consumption: is it really achievable? *Consumer Policy Review*, 13(3), 78-84.
Burgess, J., Bedford, T., Hobson, K., Davies, G. and Harrison, C. (2003) (Un)sustainable consumption. In: Berkhout, F., Leach, M. and Scoones, I. (eds) *Negotiating Environmental Change: New Perspectives from Social Science*. Cheltenham, Edward Elgar.
Burgess, J., Harrison, C. and Maiteny, P. (1991) Contested meanings: the consumption of news about nature conservation. *Media, Culture and Society*, 13(4), 499-519.
Burgess, J., Harrison, C. M. and Filius, P. (1998) Environmental communication and the cultural politics of environmental citizenship. *Environment and Planning A*, 30, 1445-60.
Burningham, K. and Cooper, G. (1999) Being constructive: social constructionism and the environment. *Sociology*, 33(2), 297-316.
Burns, A. C. (1976) Spousal involvement and empathy in jointly-resolved and authoritatively-resolved purchase subdecisions. In: Anderson, B. B. (ed) *Advances in Consumer Research Volume 3*. Cincinnati, Association for Consumer Research. p.199-207.
Burns, A. C. and Granbois, D. H. (1977) Factors moderating the resolution of preference conflict in family automobile purchasing. *Journal of Marketing Research*, 14(1), 77-86.
Burns, A. C. and Granbois, D. H. (1980) Advancing the study of family purchase decision making. In: Olson, J. C. (ed) *Advances in Consumer Research Volume 7*. Ann Abor, Association for Consumer Research. p.221-26.
Carey, M. A. (1994) The group effect in focus groups: planning, implementing, and interpreting focus group research. In: Morse, J. M. (ed) *Critical Issues in Qualitative Research Methods*. Thousand Oaks, Sage. p.225-41.
Carey, M. A. (1995) Comment: concerns in the analysis of focus group data. *Qualitative Health Research*, 5(4), 487-95.
Carey, M. A. and Smith, M. W. (1994) Capturing the group effect in focus groups: a special concern in analysis. *Qualitative Health Research*, 4(1), 123-27.
Carlsson-Kanyama, A. and Lindén, A.-L. (2007) Energy efficiency in residences - challenges for women and men in the North. *Energy Policy*, 35(4), 2163-72.
Carlsson-Kanyama, A., Lindén, A.-L. and Eriksson, B. (2005) Residential energy behaviour: does generation matter? *International Journal of Consumer Studies*, 29(3), 239-53.
Cassell, C. and Symon, G. (1994) Qualitative research in work contexts. In: Cassell, C. and Symon, G. (eds) *Qualitative Methods in Organizational Research: A Practical Guide*. London, Sage. p.1-13.
Catterall, M. and Maclaran, P. (1997) Focus group data and qualitative analysis programs: coding the moving picture as well as the snapshots. *Sociological Research Online*, 2(1). Available from: http://www.socresonline.org.uk/2/1/6.html [Accessed 12 October 2005].
Chambers, N., Simmons, C. and Wackernagel, M. (2000) *Sharing Nature's Interest: Ecological Footprints as an Indicator of Sustainability*. London, Earthscan.
Charmaz, K. (2000) Grounded theory: objectivist and constructivist methods. In: Denzin, N. K. and Lincoln, Y. S. (eds) *Handbook of Qualitative Research*. 2nd edition. Thousand Oaks, Sage. p.509-35.
Charmaz, K. (2006) *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London, Sage.
Chell, E. (2004) Critical incident technique. In: Cassell, C. and Symon, G. (eds) *Essential Guide to Qualitative Methods in Organizational Research*. London, Sage. p.45-60.
Cialdini, R. B., Reno, R. R. and Kallgren, C. A. (1990) A focus theory of normative conduct: recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, 58(6), 1015-26.

Clancy, J. and Roehr, U. (2003) Gender and energy: is there a northern perspective? *Energy for Sustainable Development*, 7(3), 44-49.

Cohen, M. J. (2007) Consumer credit, household financial management, and sustainable consumption. *International Journal of Consumer Studies*, 31(1), 57-65.

Communities and Local Government (2008) Survey of English Housing Live Tables: Definitions and terms: Arrears - Tenancy [online]. London, Communities and Local Government. Available from: http://www.communities.gov.uk/housing/housingresearch/housingsurveys/surveyofenglishhousing/sehlivetables/surveyenglish/224421/ [Accessed 15 December 2008].

Commuri, S. and Gentry, J. W. (2000) Opportunities for family research in marketing. *Academy of Marketing Science Review*, 4, Article 8. Available from: http://www.amsreview.org/articles/commuri08-2000.pdf [Accessed 25 June 2008].

Cooper, C. (1998) *Demographic Influences on Purchase Decision-Making within UK Households. Wolverhampton Business School Management Research Centre Working Paper WP008/98*. Telford, University of Wolverhampton.

Corden, A. and Sainsbury, R. (2004) Verbatim quotations in applied social research: theory, practice and impact - researchers' perspectives on participation and consent. *Paper presented at the ESRC Research Methods Festival at the University of Oxford*.

Corfman, K. P. and Lehmann, D. R. (1987) Models of cooperative group decision-making and relative influence: an experimental investigation of family purchase decisions. *Journal of Consumer Research*, 14(1), 1-13.

Corral-Verdugo, V. (1997) Dual 'realities' of conservation behavior: self-reports vs observations of re-use and recycling behavior. *Journal of Environmental Psychology*, 17(2), 135-45.

Coyne, I. T. (1997) Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? *Journal of Advanced Nursing*, 26(3), 623-30.

Creswell, J. W. (2003) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 2nd edition. Thousand Oaks, Sage.

Creswell, J. W. (2007) *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. 2nd edition. Thousand Oaks, Sage.

Crompton, T. (2008) *Weathercocks and Signposts: The Environment Movement at a Crossroads*. Godalming, WWF-UK.

Cutcliffe, J. R. (2000) Methodological issues in grounded theory. *Journal of Advanced Nursing*, 31(6), 1476-84.

Dahlstrand, U. and Biel, A. (1997) Pro-environmental habits: propensity levels in behavioral change. *Journal of Applied Social Psychology*, 27(7), 588-601.

Daly, K. (1992a) The fit between qualitative research and characteristics of families. In: Gilgun, J. F., Daly, K. and Handel, G. (eds) *Qualitative Methods in Family Research*. Newbury Park, Sage. p.3-11.

Daly, K. (1992b) Parenthood as problematic: insider interviews with couples seeking to adopt. In: Gilgun, J. F., Daly, K. and Handel, G. (eds) *Qualitative Methods in Family Research*. Newbury Park, Sage. p.103-25.

Daly, K. J. (2007) *Qualitative Methods for Family Studies and Human Development*. Los Angeles, Sage.

Darnton, A. (2004a) *Driving Public Behaviours for Sustainable Lifestyles: Report 2 of Desk Research commissioned by COI on behalf of Defra*.

Darnton, A. (2004b) *The Impact of Sustainable Development on Public Behaviour: Report 1 of Desk Research commissioned by COI on behalf of Defra*.

Darnton, A. (2008) *GSR Behaviour Change Knowledge Review: Reference Report: An Overview of Behaviour Change Models and their Uses*. London, Government Social Research.

Darnton, A., Elster-Jones, J., Lucas, K. and Brooks, M. (2006) *Promoting Pro-Environmental Behaviour: Existing Evidence to Inform Better Policy Making: Summary Report*. London, Centre for Sustainable Development, University of Westminster.

Davies, J., Foxall, G. R. and Pallister, J. (2002) Beyond the intention-behaviour mythology: an integrated model of recycling. *Marketing Theory*, 2(1), 29-113.

Davis, H. L. (1976) Decision making within the household. *Journal of Consumer Research*, 2(4), 241-60.

Davis, H. L. and Rigaux, B. P. (1974) Perception of marital roles in decision processes. *Journal of Consumer Research*, 1(1), 51-62.

De Young, R. (2000) New ways to promote proenvironmental behavior: expanding and evaluating motives for environmentally responsible behavior. *Journal of Social Issues*, 56(3), 509-26.

Defra (2002) *Survey of Public Attitudes to Quality of Life and to the Environment - 2001*. London, Department for Environment, Food and Rural Affairs.

Defra (2005) *Municipal Waste Management Survey 2003/04*. London, Department for Environment, Food and Rural Affairs.

Defra (2006a) Local Authority recycling and composting performance for 2004/05 [online]. London, Department for Environment, Food and Rural Affairs. Available from: http://www.defra.gov.uk/environment/waste/localauth/pdf/lacompostrecycle-rates0405.pdf [Accessed 15 November 2008].

Defra (2006b) Municipal Waste Statistics 2005/06 [online]. London, Department for Environment, Food and Rural Affairs. Available from: http://www.defra.gov.uk/environment/statistics/wastats/bulletin06.htm [Accessed 15 November 2008].

Defra (2006c) Promoting Pro-Environmental Behaviour Research Programme: Key Kindings and Policy Implications - Diagrammatic Overview [online]. London, Department for Environment, Food and Rural Affairs. Available from: http://www.defra.gov.uk/sustainable/government/gov/task-forces/documents/key-findings.pdf [Accessed 26 January 2007].

Defra (2007a) Municipal Waste Statistics 2006/07 [online]. London, Department for Environment, Food and Rural Affairs. Available from: http://www.defra.gov.uk/environment/statistics/wastats/bulletin07.htm [Accessed 15 November 2008].

Defra (2007b) *Waste Strategy for England 2007*. London, Department for Environment, Food and Rural Affairs.

Defra (2008a) Environmental Action Fund [online]. London, Department for Environment, Food and Rural Affairs. Available from: http://www.defra.gov.uk/environment/eaf/index.htm [Accessed 15 November 2008].

Defra (2008b) *A Framework for Pro-Environmental Behaviours*. London, Department for Environment, Food and Rural Affairs.

Defra (2008c) Municipal Waste Statistics 2007/08 [online]. London, Department for Environment, Food and Rural Affairs. Available from: http://www.defra.gov.uk/environment/statistics/wastats/bulletin08.htm [Accessed 15 November 2008].

DeLeon, I. G. and Fuqua, R. W. (1995) The effects of public commitment and group feedback on curbside recycling. *Environment and Behavior*, 27(2), 233-50.

Derkson, L. and Gartrell, J. (1993) The social context of recycling. *American Sociological Review*, 58(3), 434-42.

DETR (1998) *Home Composting in England and Wales*. London, Department of the Environment, Transport and the Regions.

DETR (1999) *Are You Doing Your Bit?: Every Little Bit Helps*. London, Department of the Environment, Transport and the Regions.

DETR (2000) *Are You Doing Your Bit? Development of the UK's Campaign to Stimulate Public Action to Protect the Environment (March 1998 - October 2000)*. London, Department of the Environment, Transport and the Regions.
Díaz Meneses, G. and Beerli Palacio, A. (2005) Recycling behavior: a multidimensional approach. *Environment and Behavior*, 37(6), 837-60.
Dickinson, W. H. (1994) Gender, household responsibility, and environmental behaviour. *Paper presented at the Association of American Geographers 90th Annual Meeting*.
Diekmann, A. and Preisendörfer, P. (2003) Green and greenback: the behavioral effects of environmental attitudes in low-cost and high-cost situations. *Rationality and Society*, 15(4), 441-72.
Directgov (2008) Greener living: a quick guide to what you can do [online]. London, Central Office of Information. Available from: http://www.direct.gov.uk/en/Environmentandgreenerliving/Greenerlivingaquickguide/DG_064391 [Accessed 15 November 2008].
Dresner, S., McGeevor, K. and Tomei, J. (2007) *A Synthesis Review of the Public Understanding Research Projects: A research report completed for the Department for Environment, Food and Rural Affairs by the Policy Studies Institute*. London, Department for Environment, Food and Rural Affairs.
Duggleby, W. (2005) What about focus group interaction data? *Qualitative Health Research*, 15(6), 832-40.
Easterling, D., Miller, S. and Weinberger, N. (1995) Environmental consumerism: a process of children's socialization and families' resocialization. *Psychology and Marketing*, 12(6), 531-50.
Ekström, K. M. (2007) Parental consumer learning or 'keeping up with the children'. *Journal of Consumer Behaviour*, 6(4), 203-17.
Ellen, P. S. (1994) Do we know what we need to know? Objective and subjective knowledge effects on pro-ecological behaviors. *Journal of Business Research*, 30(1), 43-52.
ENCAMS (2002) *Waste Segmentation Research 2002*. Wigan, ENCAMS.
Energy Saving Trust (2002) *Is Your Home Behaving Badly?* London, Energy Saving Trust.
Energy Saving Trust (2008) Energy saving light bulbs [online]. London, Energy Saving Trust. Available from: http://www.energysavingtrust.org.uk/Energy-saving-products/Energy-saving-lightbulbs-and-fittings [Accessed 15 November 2008].
Ewing, G. (2001) Altruistic, egoistic, and normative effects on curbside recycling. *Environment and Behavior*, 33(6), 733-64.
Fahy, F. and Davies, A. (2007) Home improvements: household waste minimisation and action research. *Resources, Conservation and Recycling*, 52(1), 13-27.
Faiers, A. and Neame, C. (2006) Consumer attitudes towards domestic solar power systems. *Energy Policy*, 34(14), 1797-806.
Ferber, R. and Lee, C. L. (1974) Husband-wife influence in family purchasing behavior. *Journal of Consumer Research*, 1(1), 43-50.
Festinger, L. (1957) *A Theory of Cognitive Dissonance*. Evanston, Row Peterson.
Fishbein, M. and Ajzen, I. (1975) *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, Addison-Wesley.
Fitzmaurice, J. (2005) Incorporating consumers' motivations into the theory of reasoned action. *Psychology and Marketing*, 22(11), 911-29.
Francis, A. and Wheeler, J. (2006) *One Planet Living in the Suburbs*. Godalming, WWF-UK.
Frick, J., Kaiser, F. G. and Wilson, M. (2004) Environmental knowledge and conservation behavior: exploring prevalence and structure in a representative sample. *Personality and Individual Differences*, 37(8), 1597-613.
Friends of the Earth (2003) *Waste and Recycling*. London, Friends of the Earth (England, Wales and Northern Ireland).

Gamba, R. J. and Oskamp, S. (1994) Factors influencing community residents' participation in commingled curbside recycling programs. *Environment and Behavior*, 26(5), 587-612.
Ganesh, G. (1997) Spousal influence in consumer decisions: a study of cultural assimilation. *Journal of Consumer Marketing*, 14(2), 132-55.
Gatersleben, B. (2001) *Stakeholders and Consumption in the Five Cities: UK National Report - Guildford*. Guildford, Department of Psychology, University of Surrey.
Gibbs, G. R. (2002) *Qualitative Data Analysis: Explorations with NVivo*. Buckingham, Open University Press.
Giddens, A. (1984) *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge, Polity Press.
Gilg, A. and Barr, S. (2005) Encouraging 'Environmental Action' by exhortation: evidence from a study in Devon. *Journal of Environmental Planning and Management*, 48(4), 593-618.
Glaser, B. G. (1978) *Theoretical Sensitivity: Advances in the Methodology of Grounded Theory*. Mill Valley, Sociology Press.
Glaser, B. G. (1992) *Basics of Grounded Theory Analysis: Emergence Vs. Forcing*. Mill Valley, Sociology Press.
Glaser, B. G. (1998) *Doing Grounded Theory: Issues and Discussions*. Mill Valley, Sociology Press.
Glaser, B. G. and Strauss, A. L. (1967) *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York, Aldine De Gruyter.
Global Action Plan (2006) *Changing Environmental Behaviour: A Review of Evidence from Global Action Plan*. London, Global Action Plan.
Global Action Plan (2008) *An Introduction to EcoTeams*. London, Global Action Plan.
Goulding, C. (1999) Consumer research, interpretive paradigms and methodological ambiguities. *European Journal of Marketing*, 33(9/10), 859-73.
Goulding, C. (2002) *Grounded Theory: A Practical Guide for Management, Business and Market Researchers*. London, Sage.
Gray, A. (1992) *Video Playtime: The Gendering of a Leisure Technology*. London, Routledge.
Gregory, G. D. and Di Leo, M. (2003) Repeated behavior and environmental psychology: the role of personal involvement and habit formation in explaining water consumption. *Journal of Applied Social Psychology*, 33(6), 1261-96.
Grønhøj, A. (2006) Communication about consumption: a family process perspective on 'green' consumer practices. *Journal of Consumer Behaviour*, 5(6), 491-203.
Grønhøj, A. and Ölander, F. (2007) A gender perspective on environmentally related family consumption. *Journal of Consumer Behaviour*, 6(4), 218-35.
Grønhøj, A. and Thøgersen, J. (2007) When action speaks louder than words: the effect of parenting on young consumers' pro-environmental behaviour. *Paper presented at the Nordic Consumer Policy Research Conference held in Helsinki.*
Guagnano, G. A., Stern, P. C. and Dietz, T. (1995) Influences on attitude-behavior relationships: a natural experiment with curbside recycling. *Environment and Behavior*, 27(5), 699-718.
Guba, E. G. and Lincoln, Y. S. (1994) Competing paradigms in qualitative research. In: Denzin, N. K. and Lincoln, Y. S. (eds) *Handbook of Qualitative Research*. Thousand Oaks, Sage. p.105-17.
Guba, E. G. and Lincoln, Y. S. (2005) Paradigmatic controversies, contradictions, and emerging confluences. In: Denzin, N. K. and Lincoln, Y. S. (eds) *Handbook of Qualitative Research*. 3rd edition. Thousand Oaks, Sage. p.191-215.
Gupta, S., Hagerty, M. R. and Myers, J. G. (1983) New directions in family decision making research. In: Bagozzi, R. P. and Tybout, A. M. (eds) *Advances in Consumer Research Volume 10*. Ann Abor, Association for Consumer Research. p.445-50.
Hallin, P. O. (1995) Environmental concern and environmental behavior in Foley, a small town in Minnesota. *Environment and Behavior*, 27(4), 558-78.

Hansmann, R., Bernasconi, P., Smieszek, T., Loukopoulos, P. and Scholz, R. W. (2006) Justifications and self-organization as determinants of recycling behavior: the case of used batteries. *Resources, Conservation and Recycling*, 47(2), 133-59.

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(3), 215-34.

Hayward, B., Turtle, J., Carpenter, H. and Hanson, T. (2007) *Attitudes and Behaviour in relation to the Environment*. London, Department for Environment, Food and Rural Affairs.

Heath, H. and Cowley, S. (2004) Developing a grounded theory approach: a comparison of Glaser and Strauss. *International Journal of Nursing Studies*, 41(2), 141-50.

Heath, S. and Kenyon, L. (2001) Single young professionals and shared household living. *Journal of Youth Studies*, 4(1), 83-100.

Hinchliffe, S. (1996) Helping the earth begins at home: the social construction of socio-environmental responsibilities. *Global Environmental Change*, 6(1), 53-62.

Hines, J. M., Hungerford, H. R. and Tomera, A. N. (1987) Analysis and synthesis of research on responsible environmental behavior: a meta analysis. *Journal of Environmental Education*, 18(2), 1-8.

HM Government (2005) *Securing the Future: UK Government Sustainable Development Strategy*. London, TSO.

Hobson, K. (2001) *Talking Habits into Action: An Investigation into Global Action Plan's 'Action at Home' Programme*. Unpublished PhD thesis, University College London.

Hobson, K. (2002) Competing discourses of sustainable consumption: does the 'rationalisation of lifestyles' make sense? *Environmental Politics*, 11(2), 95-120.

Hobson, K. (2003) Thinking habits into action: the role of knowledge and process in questioning household consumption practices. *Local Environment*, 8(1), 95-112.

Hobson, K. (2006) Bins, bulbs, and shower timers: on the 'techno-ethics' of sustainable living. *Ethics, Place and Environment*, 9(3), 317-36.

Holdsworth, M. (2003) *Green Choice: What Choice? Summary of NCC Research into Consumer Attitudes to Sustainable Consumption*. London, National Consumer Council.

Hormuth, S. E., Katzenstein, H., Bruch, B. and Ringenberger, B. (1991) Psychological studies on garbage avoidance and recycling. *Proceedings of Healthy Environments: the 22nd Environmental Design Research Association Conference*. Oklahoma City, Environmental Design Research Association. p.321-25.

Hughner, R. S., McDonagh, P., Prothero, A., Shultz, C. J. and Stanton, J. (2007) Who are organic food consumers? A compilation and review of why people purchase organic food. *Journal of Consumer Behaviour*, 6(2/3), 94-110.

Hunecke, M., Blöbaum, A., Matthies, E. and Höger, R. (2001) Responsibility and environment: ecological norm orientation and external factors in the domain of travel mode choice behavior. *Environment and Behavior*, 33(6), 830-52.

Hunter, C., Carmichael, K. and Pangbourne, K. (2006) Household ecological footprinting using a new diary-based data-gathering approach. *Local Environment*, 11(3), 307-27.

Jackson, T. (2005) *Motivating Sustainable Consumption: A Review of Evidence on Consumer Behaviour and Behavioural Change*. Guildford, University of Surrey.

Jackson, T. (2006) Readings in sustainable consumption. In: Jackson, T. (ed) *The Earthscan Reader in Sustainable Consumption*. London, Earthscan. p.1-23.

Jackson, T. and Michaelis, L. (2003) *Policies for Sustainable Consumption: A Report to the Sustainable Development Commission*. London, Sustainable Development Commission.

James, N. and Desai, P. (2003) *One Planet Living in the Thames Gateway: A WWF-UK One Million Sustainable Homes Campaign Report*. Godalming, WWF-UK.

Johnson, P., Buehring, A., Cassell, C. and Symon, G. (2006) Evaluating qualitative management research: towards a contingent criteriology. *International Journal of Management Reviews*, 8(3), 131–56.
Jordan, A. B. (2006) Make yourself at home: the social construction of research roles in family studies. *Qualitative Research*, 6(2), 169-85.
Judkins, B. B. (2004) *Families Practicing Sustainability: The Adoption and Maintenance of Environmentally Responsible Behaviors in the Context of Family Life.* Unpublished PhD thesis, University of Tennessee.
Kaiser, F. G., Hübner, G. and Bogner, F. X. (2005) Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behavior. *Journal of Applied Social Psychology*, 35(10), 2150-70.
Kidd, P. S. and Parshall, M. B. (2000) Getting the focus and the group: enhancing analytical rigor in focus group research. *Qualitative Health Research*, 10(3), 293-308.
Kirchler, E., Rodler, C., Hölzl, E. and Meier, K. (2001) *Conflict and Decision-Making in Close Relationships: Love, Money and Daily Routines*. Hove, Psychology Press.
Kitzinger, J. (1994) The methodology of focus groups: the importance of interaction between research participants. *Sociology of Health and Illness*, 16(1), 103-21.
Knudsen, K. and Wærness, K. (2008) National context and spouses' housework in 34 countries. *European Sociological Review*, 24(1), 97-113.
Kok, G. and Siero, S. (1985) Tin recycling: awareness, comprehension, attitude, intention and behavior. *Journal of Economic Psychology*, 6(2), 157-73.
Kollmuss, A. and Agyeman, J. (2002) Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239-60.
Krueger, R. A. (1998a) *Focus Group Kit 3: Developing Questions for Focus Groups.* Thousand Oaks, Sage.
Krueger, R. A. (1998b) *Focus Group Kit 4: Moderating Focus Groups.* Thousand Oaks, Sage.
Lackman, C. and Lanasa, J. M. (1993) Family decision-making: an overview and assessment. *Psychology and Marketing*, 10(2), 81-93.
Lam, S.-P. and Cheng, S.-I. (2002) Cross-informant agreement in reports of environmental behavior and the effect of cross-questioning on report accuracy. *Environment and Behavior*, 34(4), 508-20.
Lapadat, J. C. and Lindsay, A. C. (1999) Transcription in research and practice: from standardization of technique to interpretive positionings. *Qualitative Inquiry*, 5(1), 64-86.
Lee, C. K.-C. (1992) A model of family buyer behaviour. *New Zealand Journal of Business*, 14, 50-60.
Lee, C. K.-C. and Collins, B. A. (2000) Family decision making and coalition patterns. *European Journal of Marketing*, 34(9-10), 1181-98.
Lee, C. K. C. and Beatty, S. E. (2002) Family structure and influence in family decision making. *Journal of Consumer Marketing*, 19(1), 24-41.
Lee, J. A. and Holden, S. J. S. (1999) Understanding the determinants of environmentally conscious behavior. *Psychology and Marketing*, 16(5), 373-92.
Levy, D. S. and Lee, C. K.-C. (2004) The influence of family members on housing purchase decisions. *Journal of Property Investment and Finance*, 22(4), 320-38.
Lewin, K. (1958) Group decision and social change. In: Maccoby, E. E., Newcomb, T. M. and Hartley, E. L. (eds) *Readings in Social Psychology*. New York, Holt, Rinehart and Winston.
Lincoln, Y. S. and Guba, E. G. (2000) Paradigmatic controversies, contradictions, and emerging confluences. In: Denzin, N. K. and Lincoln, Y. S. (eds) *Handbook of Qualitative Research*. 2nd edition. Thousand Oaks, Sage. p.163-88.
Lovatt, R. (2007) *Developments in the Sheffield Population: A Consideration of the Changing Nature of Sheffield's Demographics, Methods of Measurement and Data Sources*. Sheffield, Sheffield City Council.

Lunt, P. and Livingstone, S. (1996) Rethinking the focus group in media and communications research. *Journal of Communication*, 46(2), 79-98.
MacDonald, M. and Schreiber, R. (2001) Constructing and deconstructing: grounded theory in a postmodern world. In: Schreiber, R. and Stern, P. N. (eds) *Using Grounded Theory in Nursing*. New York, Springer. p.35-54.
Maiteny, P. T. (2002) Mind in the gap: summary of research exploring 'inner' influences on pro-sustainability learning and behaviour. *Environmental Education Research*, 8(3), 299-306.
Mårtensson, M. and Pettersson, R. (2003) Everyday life contexts and the environment. In: Biel, A., Hansson, B. and Mårtensson, M. (eds) *Individual and Structural Determinants of Environmental Practice*. Aldershot, Ashgate. p.26-65.
Martin, M., Williams, I. D. and Clark, M. (2006) Social, cultural and structural influences on household waste recycling: a case study. *Resources, Conservation and Recycling*, 48(4), 357-95.
Martínez, E. and Polo, Y. (1999) Determining factors in family purchasing behaviour: an empirical investigation. *Journal of Consumer Marketing*, 16(5), 461-81.
McCann, T. V. and Clark, E. (2003) Grounded theory in nursing research: part 2 - critique. *Nurse Researcher*, 11(2), 19-28.
McDonald, S. and Ball, R. (1998) Public participation in plastics recycling schemes. *Resources, Conservation and Recycling*, 22(3-4), 123-41.
McDonald, S. and Oates, C. (2003) Reasons for non-participation in a kerbside recycling scheme. *Resources, Conservation and Recycling*, 39(4), 369-85.
McDonald, S. and Oates, C. J. (2006) Sustainability: consumer perceptions and marketing strategies. *Business Strategy and the Environment*, 15(3), 157-70.
McDonald, S., Oates, C. J., Alevizou, P. J., Young, C. W. and Hwang, K. (2006) Communication strategies for sustainable technologies: identifying patterns in consumer behaviour. *Paper presented at Integration and Communication: A Clear Route to Sustainability? The 13th International Conference of the Greening of Industry Network held in Cardiff.*
McEachern, M. G. and McClean, P. (2002) Organic purchasing motivations and attitudes: are they ethical? *International Journal of Consumer Studies*, 26(2), 85-92.
McKenzie-Mohr, D. and Smith, W. (1999) *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*. Gabriola Island, New Society Publishers.
McLellan, E., MacQueen, K. M. and Neidig, J. L. (2003) Beyond the qualitative interview: data preparation and transcription. *Field Methods*, 15(1), 63-84.
Melia, K. M. (1996) Rediscovering Glaser. *Qualitative Health Research*, 6(3), 368-78.
Meyrick, J. (2006) What is good qualitative research? A first step towards a comprehensive approach to judging rigour/quality. *Journal of Health Psychology*, 11(5), 799-808.
Middlemiss, L. (2008) Influencing individual sustainability: a review of the evidence on the role of community-based organisations. *International Journal of Environment and Sustainable Development*, 7(1), 78-93.
Mills, J., Bonner, A. and Francis, K. (2006) The development of constructivist grounded theory. *International Journal of Qualitative Methods*, 5(1), Article 3. Available from: http://www.ualberta.ca/~iiqm/backissues/5_1/pdf/mills.pdf [Accessed 15 August 2007].
Moll, H. and Groot-Marcus, A. (2002) Households past and present, and opportunities for change. In: Kok, M., Vermeulen, W., Faaij, A. and de Jager, D. (eds) *Global Warming and Social Innovation: The Challenge of a Climate Neutral Society*. London, Earthscan. p.83-106.
Morgan, D. L. (1997) *Focus Groups as Qualitative Research*. 2nd edition. Thousand Oaks, Sage.
Morgan, D. L. (1998) *Focus Group Kit 2: Planning Focus Groups*. Thousand Oaks, Sage.

Morgan, D. L. and Krueger, R. A. (1993) When to use focus groups and why. In: Morgan, D. L. (ed) *Successful Focus Groups: Advancing the State of the Art.* Newbury Park, Sage. p.3-19.
Morgan, J. N. (1961) Household decision-making. In: Foote, N. N. (ed) *Household Decision-Making.* New York, New York University Press. p.81-102.
MORI Social Research Institute (2002) *Public Attitudes Towards Recycling and Waste Management: Quantitative and Qualitative Review.* London, Prime Minister's Strategy Unit.
Morrison-Beedy, D., Côté-Arsenault, D. and Feinstein, N. F. (2001) Maximizing results with focus groups: moderator and analysis issues. *Applied Nursing Research*, 14(1), 48-53.
Munday, J. (2006) Identity in focus: the use of focus groups to study the construction of collective identity. *Sociology*, 40(1), 89-105.
Nelson, M. C. (1988) The resolution of conflict in joint purchase decisions by husbands and wives: a review and empirical test. In: Houston, M. J. (ed) *Advances in Consumer Research Volume 15.* Provo, Association for Consumer Research. p.436-41.
Nordenmark, M. and Nyman, C. (2003) Fair or unfair? Perceived fairness of household division of labour and gender equality among women and men: the Swedish case. *European Journal of Women's Studies*, 10(2), 181-209.
Oates, C., McDonald, S., Alevizou, P., Hwang, K., Young, W. and McMorland, L.-A. (2008) Marketing sustainability: use of information sources and degrees of voluntary simplicity. *Journal of Marketing Communications*, 14(5), 351-65.
Oates, C. J. and McDonald, S. (2002) What can marketing do for recycling? *Paper presented at the Academy of Marketing Conference held in Nottingham.*
Oates, C. J. and McDonald, S. (2006) Recycling and the domestic division of labour: is green pink or blue? *Sociology*, 40(3), 417-33.
Ölander, F. and Thørgersen, J. (1995) Understanding of consumer behaviour as a prerequisite for environmental protection. *Journal of Consumer Policy*, 18(4), 345-85.
Olshavsky, R. W. and Granbois, D. H. (1979) Consumer decision making - fact or fiction? *Journal of Consumer Research*, 6(2), 93-100.
Oskamp, S., Harrington, M. J., Edwards, T. C., Sherwood, D. L., Okuda, S. M. and Swanson, D. C. (1991) Factors influencing household recycling behaviour. *Environment and Behavior*, 23(4), 494-519.
Patton, M. Q. (2002) *Qualitative Research and Evaluation Methods.* 3rd edition. Thousand Oaks, Sage.
Peattie, K. (1999) Trappings versus substance in the greening of marketing planning. *Journal of Strategic Marketing*, 7(2), 131-48.
Peattie, K. (2001) Golden goose or wild goose? The hunt for the green consumer. *Business Strategy and the Environment*, 10(4), 187-99.
Pennartz, P. and Niehof, A. (1999) *The Domestic Domain: Chances, Choices and Strategies of Family Households.* Aldershot, Ashgate.
Perrin, D. and Barton, J. (2001) Issues associated with transforming household attitudes and opinions into materials recovery: a review of two kerbside recycling schemes. *Resources, Conservation and Recycling*, 33(1), 61-74.
Perrin, D. and Barton, J. R. (2000) If only households recycled what and when they said they would! *Proceedings of the International Solid Waste Association World Congress.* p.255-63.
Pieters, R. G. M. (1991) Changing garbage disposal patterns of consumers: motivation, ability, and performance. *Journal of Public Policy and Marketing*, 10(2), 59-76.
Pocock, R., Stone, I., Clive, H., Smith, R., Jesson, J. and Wilczak, S. (2008) *Barriers to Recycling at Home.* Banbury, Waste and Resources Action Programme.
Porter, B. E., Leeming, F. C. and Dwyer, W. O. (1995) Solid waste recovery: a review of behavioral programs to increase recycling. *Environment and Behavior*, 27(2), 122-52.

Putnam, M. and Davidson, W. R. (1987) *Family Purchasing Behavior: II Family Roles by Product Category*. Columbus, Management Horizons Inc.
Qualls, W. J. (1987) Household decision behavior: the impact of husbands' and wives' sex role orientation. *Journal of Consumer Research*, 14(2), 264-79.
Qualls, W. J. and Jaffe, F. (1992) Measuring conflict in household decision behavior: read my lips and read my mind. In: Sherry, J. F. and Sternthal, B. (eds) *Advances in Consumer Research Volume 19*. Provo, Association for Consumer Research. p.522-31.
Reynolds, T. J. and Gutman, J. (1988) Laddering theory, method, analysis and interpretation. *Journal of Advertising Research*, 28(1), 11-31.
Roberts, J. A. (1996) Green consumers in the 1990s: profile and implications for advertising. *Journal of Business Research*, 36(3), 217-31.
Robinson, G. M. and Read, A. D. (2005) Recycling behaviour in a London Borough: results from large-scale household surveys. *Resources, Conservation and Recycling*, 45(1), 70-83.
Roehr, U. (2001) *Gender and Energy in the North. Background Paper for the Expert Workshop "Gender Perspectives for Earth Summit 2002: Energy, Transport, Information for Decision-Making"*.
Rossiter, J. R. (1979) Children's consumer research: a call for rigor. In: Wilkie, W. L. (ed) *Advances in Consumer Research Volume 6*. Ann Abor, Association for Consumer Research. p.424-26.
Sadalla, E. K. and Krull, J. L. (1995) Self-presentational barriers to resource conservation. *Environment and Behavior*, 27(3), 328-53.
Sanne, C. (2002) Willing consumers - or locked-in? Policies for a sustainable consumption. *Ecological Economics*, 42(1-2), 273-87.
Saunders, M., Lewis, P. and Thornhill, A. (2003) *Research Methods for Business Students*. 3rd edition. Harlow, Financial Times Prentice Hall.
Schahn, J. and Holzer, E. (1990) Studies of individual environmental concern: the role of knowledge, gender and background variables. *Environment and Behavior*, 22(6), 767-86.
Schultz, P. W., Oskamp, S. and Mainieri, T. (1995) Who recycles and when? A review of personal and situational factors. *Journal of Environmental Psychology*, 15(2), 105-21.
Schwandt, T. A. (1994) Constructivist, interpretivist approaches to human inquiry. In: Denzin, N. K. and Lincoln, Y. S. (eds) *Handbook of Qualitative Research*. Thousand Oaks, Sage. p.118-37.
Schwartz, S. H. (1977) Normative influences on altruism. *Advances in Experimental Social Psychology*, 10, 221-79.
Seyfang, G. (2005) Shopping for sustainability: can sustainable consumption promote ecological citizenship? *Environmental Politics*, 14(2), 290-306.
Seyfang, G. (2006) Ecological citizenship and sustainable consumption: examining local organic food networks. *Journal of Rural Studies*, 22(4), 383-95.
Shanahan, H. (2003) Exploring everyday life in households for a sustainable society. *Paper presented at the 6th Nordic Conference on Environmental Social Sciences held in Turku/Åbo, Finland*.
Sheffield City Council (2007) 2001 Census - Housing Tenure [online]. Sheffield, Sheffield City Council. Available from: http://www.sheffield.gov.uk/your-city-council/sheffield-facts-figures/housing-facts-and-figures/housing-tenure [Accessed 15 December 2008].
Sheffield City Council (2008a) Corporate Plan 2008-11: A City of Opportunity - Three Year Targets [online]. Sheffield, Sheffield City Council. Available from: http://www.sheffield.gov.uk/your-city-council/policy--performance/corporate-plan-2008-11/three-year-targets [Accessed 15 December 2008].
Sheffield City Council (2008b) Indices of Deprivation 2007 [online]. Sheffield, Sheffield City Council,. Available from: http://www.sheffield.gov.uk/your-city-council/sheffield-facts-figures/indices-of-deprivation/id-2007 [Accessed 15 December 2008].

Sheffield City Council (2008c) Population Information [online]. Sheffield, Sheffield City Council. Available from: http://www.sheffield.gov.uk/your-city-council/sheffield-facts-figures/population-information [Accessed 15 December 2008].

Sheth, J. N. (1974) A theory of family buying decisions. In: Sheth, J. N. (ed) *Models of Buyer Behavior: Conceptual, Quantitative, and Empirical*. New York, Harper and Row. p.17-33.

Shove, E. (2003a) *Comfort, Cleanliness and Convenience: The Social Organization of Normality*. Oxford, Berg.

Shove, E. (2003b) Converging conventions of comfort, cleanliness and convenience. *Journal of Consumer Policy*, 26(4), 395-418.

Shove, E. (2006) Efficiency and consumption: technology and practice. In: Jackson, T. (ed) *The Earthscan Reader in Sustainable Consumption*. London, Earthscan. p.293-304.

Spangenberg, J. H. and Lorek, S. (2002) Environmentally sustainable household consumption: from aggregate environmental pressures to priority fields of action. *Ecological Economics*, 43(2-3), 127-40.

Sparkes, A. C. (2001) Myth 94: qualitative health researchers will agree about validity. *Qualitative Health Research*, 11(4), 538-52.

Spencer, L., Ritchie, J., Lewis, J. and Dillon, L. (2003) *Quality in Qualitative Evaluation: A Framework for Assessing Research Evidence: A Quality Framework.*

Spiro, R. L. (1983) Persuasion in family decision-making. *Journal of Consumer Research*, 9(4), 393-402.

Staats, H., Harland, P. and Wilke, H. A. M. (2004) Effecting durable change: a team approach to improve environmental behavior in the household. *Environment and Behavior*, 36(3), 341-67.

Steedman, P. (2005) *Desperately Seeking Sustainability? Summary of NCC Research into Information and Advice on Sustainable Lifestyles*. London, National Consumer Council.

Stern, P. C. (2000) Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407-24.

Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A. and Kalof, L. (1999) A value-belief-norm theory of support for social movements: the case of environmentalism. *Human Ecology Review*, 6(2), 81-97.

Stern, P. C., Dietz, T. and Kalof, L. (1993) Value orientations, gender, and environmental concern. *Environment and Behavior*, 25(3), 322-48.

Straughan, R. D. and Roberts, J. A. (1999) Environmental segmentation alternatives: a look at green consumer behavior in the new millennium. *Journal of Consumer Marketing*, 16(6), 558-75.

Strauss, A. and Corbin, J. (1990) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, Sage.

Strauss, A. and Corbin, J. (1994) Grounded theory methodology: an overview. In: Denzin, N. K. and Lincoln, Y. S. (eds) *Handbook of Qualitative Research*. Thousand Oaks, Sage. p.273-85.

Strauss, A. and Corbin, J. (1998) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. 2nd edition. Thousand Oaks, Sage.

Sullivan, O. (1997) Time waits for no (wo)man: an investigation of the gendered experience of domestic time. *Sociology*, 31(2), 221-39.

Sustainable Consumption Roundtable (2006) *I Will If You Will: Towards Sustainable Consumption*. London, Sustainable Consumption Roundtable.

Symon, G. and Cassell, C. (2004) Promoting new research practices in organizational research. In: Cassell, C. and Symon, G. (eds) *Essential Guide to Qualitative Methods in Organizational Research*. London, Sage. p.1-10.

Thøgersen, J. (2004) A cognitive dissonance interpretation of consistencies and inconsistencies in environmentally responsible behavior. *Journal of Environmental Psychology*, 24(1), 93-103.

Thøgersen, J. and Ölander, F. (2003) Spillover of environment-friendly consumer behaviour. *Journal of Environmental Psychology*, 23(3), 225-36.
Thøgersen, J. and Ölander, F. (2006) To what degree are environmentally beneficial choices reflective of a general conservation stance? *Environment and Behavior*, 38(4), 550-69.
Tracy, A. P. and Oskamp, S. (1983-1984) Relationships among ecologically responsible behaviors. *Journal of Environmental Systems*, 13(2), 115-26.
Tucker, P. (1999) A survey of attitudes and barriers to kerbside recycling. *Environmental and Waste Management*, 2(1), 55-62.
Tucker, P. (2003) Understanding recycling surveys. *Warmer Bulletin*, 88, 18-19.
Tucker, P. and Speirs, D. (2001) *Understanding Home Composting Behaviour: A Technical Monograph*. Paisley, University of Paisley.
Tucker, P. and Speirs, D. (2003) Attitudes and behavioural change in household waste management behaviours. *Journal of Environmental Planning and Management*, 46(2), 289-307.
Tucker, P., Speirs, D., Fletcher, S. I., Edgerton, E. and McKechnie, J. (2003) Factors affecting take-up of and drop-out from home composting schemes. *Local Environment*, 8(3), 245-59.
Uphold, C. R. and Strickland, O. L. (1989) Issues related to the unit of analysis in family nursing research. *Western Journal of Nursing Research*, 11(4), 405-17.
Uzzell, D., Muckle, R., Jackson, T., Ogden, J., Barnett, J., Gatersleben, B., Hegarty, P. and Papathanasopoulou, E. (2006) *Choice Matters: Alternative Approaches to Encourage Sustainable Consumption and Production*. Guildford, Environmental Psychology Research Group, University of Surrey.
van der Wal, J. and Noorman, K. J. (1998) Analysis of household metabolic flows. In: Noorman, K. J. and Schoot Uiterkamp, T. (eds) *Green Households? Domestic Consumers, Environment and Sustainability*. London, Earthscan. p.35-63.
Vining, J. and Ebreo, A. (1990) What makes a recycler? A comparison of recyclers and nonrecyclers. *Environment and Behavior*, 22(1), 55-73.
Ward, S. (1974) Consumer socialization. *Journal of Consumer Research*, 1(2), 1-14.
Warr, D. J. (2005) "It was fun...but we don't usually talk about these things": analyzing sociable interaction in focus groups. *Qualitative Inquiry*, 11(2), 200-25.
Warren, T. (2003) Class- and gender-based working time? Time poverty and the division of domestic labour. *Sociology*, 37(4), 733-52.
Watts, B. M. and Probert, E. J. (1999) Variation in public participation in recycling: a case study in Swansea. *Environmental and Waste Management*, 2(2), 99-106.
Weatherell, C., Tregear, A. and Allinson, J. (2003) In search of the concerned consumer: UK public perceptions of food, farming and buying local. *Journal of Rural Studies*, 19(2), 233-44
Webster, C. (1994) Effects of hispanic ethnic identification on marital roles in the purchase decision process. *Journal of Consumer Research*, 21(2), 319-31.
Werner, C. M. and Makela, E. (1998) Motivations and behaviors that support recycling. *Journal of Environmental Psychology*, 18(4), 373-86.
Werner, C. M., Turner, J., Shipman, K., Twitchell, F. S., Dickson, B. R., Bruschke, G. V. and von Bismarck, W. B. (1995) Commitment, behavior, and attitude change: an analysis of voluntary recycling. *Journal of Environmental Psychology*, 15(3), 197-208.
Wilkie, W. L., Moore-Shay, E. S. and Assar, A. (1992) *Family Decision-Making for Household Durable Goods. Marketing Science Institute Working Paper Report Number 92-108*. Cambridge, Massachusetts, Marketing Science Institute.
Wilkinson, S. (2006) Analyzing interaction in focus groups. In: Drew, P., Raymond, G. and Weinberg, D. (eds) *Talk and Interaction in Social Research Methods*. London, Sage. p.50-62.
Woollam, T., Griffiths, A. and Williams, K. (2006) Do children take the recycling message home from school? *Paper presented at the 21st Solid Waste Technology and Management Conference held in Philadelphia, USA.*

WRAP (2008a) Recycle Now [online]. Banbury, Waste and Resources Action Programme. Available from: http://www.recyclenow.com [Accessed 31 December 2008].

WRAP (2008b) Recycle Now Partners: For all your Recycle Now communication resources [online]. Banbury, Waste and Resources Action Programme. Available from: http://www.recyclenowpartners.org.uk [Accessed 15 November 2008].

WWF-UK, Stockholm Environment Institute and Centre for Urban and Regional Ecology (2006) *Counting Consumption: CO2 Emissions, Material Flows and Ecological Footprint of the UK by Region and Devolved Country*. Godalming, WWF-UK.

WWF and BioRegional (2008) One Planet Living [online]. London, BioRegional. Available from: http://www.oneplanetliving.org [Accessed 15 November 2008].

WWF, Zoological Society of London and Global Footprint Network (2006) *Living Planet Report 2006*. Gland, WWF.

WWF, Zoological Society of London and Global Footprint Network (2008) *Living Planet Report 2008*. Gland, WWF.

Yarrow, J. (2007) *1001 Ways You Can Save the Planet: Practical Ideas to Heal and Change the World*. London, Duncan Baird Publishers.

Yorkshire Water (2008) Be Cool, Save Water [online]. Bradford, Yorkshire Water. Available from: http://www.yorkshirewater.com/becool/ [Accessed 15 November 2008].

Young, W., Hwang, K., McDonald, S. and Oates, C. J. (forthcoming) Sustainable consumption: green consumer behaviour when purchasing products. *Sustainable Development*.

Appendix I

Informed consent script

My name is Anna Scott, and I am a PhD student at the Management School, University of Sheffield. The working title of my research project is 'Understanding sustainable development in households'. The project is concerned with environmental actions – actions in and around the home that benefit the environment – like recycling, buying energy saving light bulbs, walking, cycling or using public transport instead of the car, buying organic food, etc. I am carrying out group interviews with Sheffield households in order to learn more about how households come to be involved in environmental actions and how these actions are actually carried out. I am the only person working on the project and it is not sponsored or funded by any governmental or commercial organisation. However, it is hoped that the results will inform strategies to increase involvement in environmental actions.

Your participation in the project is voluntary. The group interview is a one-off event which will last no longer than two hours and consists of four sections. The first section is about which environmental actions you undertake. The second section is about how you go about recycling on a day to day basis. The third section is about how you came to be involved in recycling. The fourth section is about how you go about the other environmental actions and how you came to be involved in them. During the last three sections I will ask you to produce diagrams to show what's going on. Even if you consent to participate in the group interview you may withdraw at any time with no penalties of any kind.

With your permission I would like to tape record the group interview in order to obtain an accurate record of all that is said. I will transcribe the interview and will be the only person to listen to the tape. I can send you a copy of the transcript if you so wish. I may quote from the transcript in my PhD thesis, publications, and presentations but your real names will not be attached to your quotes – pseudonyms will be used. I may use the diagrams your produce in my PhD thesis, publications, and presentations but again your real names will not be attached to your work – pseudonyms will be used. I can send you copies of your diagrams if you so wish.

After the group interview I would like to collect some background information about you and your household such as ages, occupations, and household income. All such data along with your contact details will be kept in accordance with the Data Protection Act 1998. This information will not be passed on to any third party and will be securely destroyed upon completion of my PhD. After the group interview I will provide you with my contact details and the contact details of my supervisor in case you have any questions in the future.

Do you have any questions or concerns about any aspects of the group interview or research project?

Are you willing to participate in the group interview? (If children are under the age of 12 ask the parents: are you willing for your children to participate in the group interview?) I remind you that you that you may withdraw at any time.

May I tape record the interview?

Appendix II

Recruitment poster

Recycling

Using **energy saving light bulbs**
Buying things like **recycled paper** or **organic food**
Installing **loft insulation**
Taking a **shower** instead of a bath
Switching to **green energy**
Walking, cycling or using public transport
instead of a car

If you or anyone you live with ever do one or more of these things or anything similar then I'd like to hear from you. I am a researcher at Sheffield University looking for Sheffield households to participate in an exciting study.

Taking part in the study will involve a group interview with all members of your household together. **There will be a reward for your time.**

If you are interested in taking part or would like to find out more please contact me, **Anna Scott**:

Telephone: **0114 222 3386** (please leave a message if I am not there)
Email: **anna.scott@sheffield.ac.uk**

Please leave up until end of January 2005