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A drop in the bucket: Collective efficacy perceptions affect waste minimising behaviours

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‘A DROP IN THE BUCKET’:
COLLECTIVE EFFICACY PERCEPTIONS AFFECT WASTE
MINIMISING BEHAVIOURS

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2003

Prepared in partial fulfilment for a Master of Business (Marketing)

Faculty of Business and Public Management

Edith Cowan University

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

ABSTRACT

The goal of this thesis was to inform a social marketing effort designed to increase environmentally friendly behaviours in an effort to ensure a more sustainable future. This study attempted to gain a better understanding of the discrepancy that exists between pro-environmental concerns and pro-environmental actions by exploring efficacy perceptions. Efficacy beliefs were compared for three groups of individuals: 1) environmentally active/members of an environmental group; 2) environmentally active/not members of an environmental group; 3) environmentally inactive and not members of an environmental group. Six focus groups were conducted and interviewees were recruited from the Earth Carers' organisation and the suburb of Subiaco in Western Australia. The results indicated that having confidence in one's ability to perform waste minimising activities (self-efficacy) and believing that one's own actions are effective in reducing waste (solution efficacy) were related to being environmentally active and belonging to a defined environmental group. In addition to this, having a strong confidence in the ability of one's group to perform the necessary actions (collective efficacy) was also related to group belonging. However, the clearest relationship was observed when individuals who were not active in waste management believed that collective actions would not be effective in solving the waste problem (collective-outcome efficacy). Collective and collective-outcome efficacy were considered to be particularly relevant to environmental actions because environmental sustainability necessarily involves efforts by all members of society. This research is unique because collective and collective-outcome efficacy have not been previously examined in the environmental literature. This thesis recommends that enhancing collective-outcome efficacy might be necessary as an *a priori* step in convincing people to act in an environmentally friendly manner. Other efficacy perceptions may then need to be enhanced in order to reinforce behaviour. This is because people are unlikely to perform environmental behaviours unless they first believe that collective actions are going to make a difference. Recommendations on how to enhance collective-outcome efficacy are offered through application of the marketing mix. The results of this research could also be used to develop quantitative scales for measuring efficacy in relation to waste management.

DECLARATION

I certify that this does not, to the best of my knowledge and belief:

- i) incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;*
- ii) contain any material previously published or written by another person except where due reference is made in the text; or*
- iii) contain any defamatory material.*

Leesa Bonniface

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Environmental problems are vast and include issues such as the greenhouse effect, rising salinity levels, deforestation, plant and animal extinction, contamination of land, resource depletion, and waste management. This thesis focuses on waste, as one aspect of environmental degradation, in order to illustrate the need for environmentally responsible behaviour. In this first section, three areas have been discussed in order to establish a basic understanding of: 1) the problems associated with waste production, 2) consumerism as a key contributor to the waste problem, and 3) social marketing in the context of environmental behaviour change.

1.1.1 The Waste Problem

Most developing and developed countries experience problems with the safe and sustainable disposal of waste. The majority of Australia-wide generated waste is disposed of by landfill, which consumes urban land and increases the risk of toxic waste leakages, the release of methane gas, and other greenhouse emissions into the environment (Australian State of the Environment Committee, 2001). In Australia, the state of Western Australia is the highest generator of waste, producing about fourteen hundred kilograms per year/per capita (Australian State of the Environment Committee, 2001).

A recent report entitled, *Environment Western Australia 1998: State of the Environment Report* offered insight into the problem of waste generation and disposal (State of the Environment Reporting Unit, 1998). The report stated that three million

tones of solid waste is disposed of by landfill each year which has contributed to the pollution of surface and ground water along with the extinction of twenty-five plant species. Landfills are worrying when, according to the report, Western Australians need approximately 4.4 hectares per capita of productive land use to sustain the current standard of living.

1.1.2 Consumerism and Waste Production

Past research suggests that people have been reluctant to undertake environmentally responsible behaviours due to the sacrifices and inconveniences involved in changing consumption patterns (Thompson & Barton, 1994). This change in consumption behaviour is necessary because consumerism is dependent on the natural environment. When quality of life is achieved by members of society through a constant desire to increase material well being, the natural environment is negatively affected (Kilbourne, McDonagh & Prothero, 1997).

McCracken (1990) referred to humans' constant desire to increase material well being in his discussion of displaced meaning. He suggested that consumer goods act as bridges to the somewhat unobtainable hopes and ideals to which individuals aspire. This enlarges the 'darker side' of consumption by suggesting that humans will never be satisfied with what they have (McCracken, 1990); hence we will have problems with achieving environmental sustainability.

This commitment that humans have to consumption can be traced back to the consumer revolution. Despite a lack of agreement on when and where the revolution occurred (see McCracken, 1990), there is general agreement that the consumption of goods changed from having a purely utilitarian or intrinsic function to having both utilitarian and symbolic purposes. According to McCracken (1990), the consumer revolution, beginning in Elizabethan England, has now emerged into a modern mode of consumption whereby consumer goods are used to portray cultural meanings. For example, serving an expensive bottle of wine at a dinner party might demonstrate wealth

and status. A myriad of studies have focused on the symbolic properties of consumer goods (e.g., Kutcha, 1996; Gronow, 1997; Belk, Wallendorf, & Sherry; 1989).

Consumer goods are now mass produced in order to satisfy the ever increasing 'wants' demanded by consumers. According to Kilbourne, et al. (1997) this has changed the original idea from 'consuming to live' into 'living to consume,' which generates negative environmental consequences. Some studies have addressed the notion of social paradigms (the way humans view the world around them) to explain unsustainable actions (Perlmutter & Trist, 1986; Fisk, 1973; Kilbourne, et al. 1997; Milbrath, 1989). Milbrath (1989) described the effects of the Dominant Social Paradigm (i.e. the way in which most people view the world) as resource-exploitative, consumptive, materialistic, growth-oriented and as having little concern for nature. In order to demonstrate how the Dominant Social Paradigm has been constructed, Kilbourne Beckmann and Thelen (2002) argued that the ways in which members of society view the technological, economic and political dimensions of society have been largely antecedent to environmental harm.

To summarise why these social views are problematic Kilbourne, et al.'s (2002) study illustrated, firstly, that producing and disposing of goods is inextricably linked to progress and relies on the notion that technology will always develop to solve problems; this does not take into account the limited supply of natural resources (also see Postman, 1993). Secondly, the meaning of life has become preoccupied with the pursuit of material gain and self-interest; this has resulted in the treatment of nature as an economic resource used to achieve high standards of living. Finally, the citizens of politically liberal democracies assume they have the right to decide their consumption activities. This means that moral consumption choices are left to the individual, which suggests that degrees of sustainability are justifiable through inconsistent perceptions of morality.

If these social views contribute to the destruction of the environment, as Oskamp (2000) stated, environmental problems cannot be solved by simply consulting the technical sciences, but instead must also recognise the role of social science in reversing the damage caused by humans. One application of social science is social marketing, which is defined below.

1.1.3 Social Marketing

Social marketing is concerned with the marketing of ideas which was identified as one element in the general definition of marketing produced by the American Marketing Association in 1985, which states:

Marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organizational objectives (cited in Fine, 1990a, p.1).

Donovan and Henley (2003) modified Andreason's (1995) definition of social marketing to state:

Social marketing is the application of commercial marketing techniques to the analysis, planning, execution, and evaluation of programs designed to influence the voluntary or *involuntary* behaviour of target audiences in order to improve the welfare of individuals in society.

Involuntary behaviour was added to Andreason's (1995) definition because Donovan and Henley (2003) suggested that voluntary behavioural change is necessarily supported by social structures. Therefore, they suggested that by modifying social structures in line with social marketing objectives, involuntary changes in behaviour might result.

Social marketing has been widely used to respond to the vast social problems that all members of society are faced with today (Kotler & Roberto, 1989). For example, health problems have increased the need to promote healthy behaviours in order to improve quality of life. Social marketing campaigns have addressed health risks such as smoking, poor diet, and breast cancer, and have focussed on other areas such as road accidents, mental health, child welfare, and physical activity. In order to respond to environmental problems, social marketing has also been used to reduce the impact of humans on the environment. For example, campaigns that focus on reducing litter, taking public transport, and reducing waste have positive consequences for the natural environment. This is particularly important because the natural environment supports all human life.

Despite the high level of waste disposal, which still indicates a reluctance to recycle, waste minimising trends in Australia indicate some success in recycling and waste recovery activities (Australian State of the Environment Committee, 2001). In Western Australia, various curbside recycling programs have been introduced and anti-litter campaigns along with waste education campaigns have been developed. One program developed by the Department of Environmental Protection called Earth Carers, is a waste minimisation program designed to encourage community members to recycle, reuse consumable items, and reduce overall consumption. However, much research is still needed to determine why some individuals perform environmentally responsible behaviours while others do not.

Throughout this thesis, ‘environmentally responsible behaviour’ is considered an effective means through which sustainability of the natural environment can be achieved. However, it is recognised that environmentally responsible behaviour is problematic and is often an oxymoron in itself. For example, recycling does not prevent the use of non-renewable resources in products that have been designed with built-in obsolescence. This may actually encourage wasteful behaviours because people can justify the purchase of

disposable products when they are recyclable. However, this research will still support social marketing efforts to move towards a more sustainable society.

In order to determine what constitutes social marketing, the end goal of the campaign must be considered (Donovan & Henley, 2003). The end goal of this research is to be able to make recommendations to social marketers about ways to encourage people to perform environmentally friendly behaviours so that the state of the planet can be preserved for future generations.

1.2 SIGNIFICANCE OF THE STUDY

Specifically, this research attempts to understand why there is an apparent gap between pro-environmental concern and environmentally responsible behaviour by examining efficacy perceptions.

An efficacy belief is the term used to describe perceived self-efficacy, solution efficacy, collective efficacy, and collective-outcome efficacy. Based on Bandura's (1986) definition, self-efficacy is concerned with an individual's perceptions regarding their ability to perform a particular behaviour; while outcome expectancy (i.e. solution efficacy) is concerned with an individual's perceptions regarding the consequences or outcomes of that behaviour. Collective efficacy is concerned with a group's shared beliefs in its ability to carry out the task in order to achieve a particular outcome (Bandura, 1997). Collective-outcome expectancy (i.e. collective-outcome efficacy) is concerned with a group's shared beliefs about the consequences that will result from group action (adapted from Riggs and Knight, 1994). (See Table 1.1 for related terminology and definitions.)

Self- and solution efficacy have been applied widely in the field of social marketing but they have only occasionally been used to explain environmentally responsible behaviour. The unique contribution of this thesis is the inclusion of *collective efficacy* and *collective-outcome efficacy* as these do not appear to have been previously examined within the environmental domain. This is surprising given the necessity for a collective effort to achieve sustainability. This thesis significantly expands research in environmental social marketing by exploring the contribution of collective and collective-outcome efficacy perceptions.

The exploration of efficacy perceptions has produced useful insights for academics and social marketers. For academics, these results deepen theoretical understanding of the factors that affect environmental behaviour. This understanding of efficacy perceptions in regard to environmentally responsible behaviour might allow social marketers to develop campaigns designed to raise efficacy perceptions in individuals. Since a collective effort is necessary to achieve environmental sustainability, research regarding collective and collective-outcome efficacy provides new insights into how individuals may be persuaded to adopt environmentally responsible behaviours.

The following sections outline the research purpose along with a research agenda, and conclude with a glossary of terms used in this thesis.

1.3 RESEARCH PURPOSE

A number of studies have identified that a gap exists between pro-environmental attitudes and actions to protect or preserve the natural environment (e.g., Maloney & Ward, 1973; Smythe and Brook, 1980; Ostman & Parker, 1987; Dunlap, 1991; Scott and Willits, 1994). In order to close this gap, often termed the behavioural gap, it is vital that underlying causes are better understood. This study has attempted to identify some of these causes by analysing the efficacy perceptions of environmentally active and non-

active members of society. Specifically, efficacy perceptions will be examined to determine whether they explain in part the discrepancy between pro-environmental concern and pro-environmental action.

1.4 RESEARCH AGENDA

A broad research question guided the construction of the research objectives. These objectives were achieved by pursuing the exploratory aims through qualitative data collection.

1.4.1 Research Question

What is the relationship between efficacy perceptions, belonging to a defined or undefined group and performing environmentally responsible behaviours? Specifically, do efficacy perceptions differ for those who are:

1. Environmentally active *and* members of a defined environmental group such as Earth Carers?
2. Environmentally active and members of an undefined group such as the general community?
3. Environmentally inactive and members of an undefined group such as the general community?

1.4.2 Research Objectives

The following research objectives guided the research design:

1. To gain insight into the dimensions of self-, solution, collective, and collective-outcome efficacy in relation to an environmental behaviour.

2. To gain insight into whether efficacy relates to being environmentally active.
3. To gain insight into whether group belonging relates to efficacy.
4. To gain insight into whether environmental knowledge is related to environmental behaviour and efficacy dimensions.

1.4.3 Exploratory Aims

The exploratory aims were:

1. To identify common themes expressed by individuals concerning self-, solution, collective, and collective-outcome efficacy.
2. To identify how efficacy differs between active and inactive individuals.
3. To identify how efficacy differs between defined and undefined groups.
4. To identify knowledge levels in relation to efficacy and environmental actions.

1.4.4 Expected Outcomes

The following outcomes were expected:

1. That people who are active and belong to the defined group (Earth Carers) would express higher/stronger perceptions of efficacy than the undefined groups (general community).
2. That there would be a relationship between low efficacy perceptions and low behavioural commitment.
3. That a high level of environmental knowledge would be related to environmental behaviour and high efficacy perceptions.

Table 1.1:

Terminology and General Definitions

Term	Definition
Behavioural gap	The weak link between pro-environmental concern and environmentally responsible actions.
Dominant Social Paradigm	The term used to describe how members of society have traditionally viewed the world around them, generating harmful environmental consequences.
Collective efficacy	The perceptions of individuals regarding their group's ability to perform a specific task.
Collective-outcome efficacy	The perceptions that individuals hold regarding the likely outcome from their group's effort to perform a task.
Efficacy	A general term used to describe self-, solution, collective, and collective-outcome efficacy.
Environmentally responsible behaviour	Any action that supports environmental sustainability e.g. recycling waste and re-using products.
'Generality' of efficacy perceptions	The extent to which efficacy perceptions vary depending on the type of behaviour being performed (e.g. if efficacy perceptions stay constant for recycling, re-using and reducing behaviours).
'Magnitude' of efficacy perceptions	The degree to which efficacy perceptions vary depending on the level of difficulty in performing the behaviour.
New Environmental Paradigm	The term used to describe the attitudes of the human race that reflect a new pro-environmental ethos.
Pro-environmental	The extent to which individuals have positive concerns for the natural environment.
Self-efficacy	The perceptions that individuals hold concerning their capabilities to perform a specific action.
Solution efficacy	The perceptions that individuals hold concerning their belief that actions will produce certain consequences.
'Strength' of efficacy perceptions	The strength of the belief in an individual's capabilities despite mounting difficulties.

This introductory chapter is followed by a review of relevant literature. The theoretical framework used in this thesis is then outlined and the methodological process is discussed. The research findings are presented and a detailed interpretation of these findings is offered in the discussion chapter. Some recommendations to social marketers are also offered as an *a priori* step in convincing people to perform waste minimising behaviours. The concluding statement highlights the most pertinent benefits of the research and advises the direction for future research.

CHAPTER 2

LITERATURE REVIEW

Prior to 1995, most environmental-behaviour research utilised the micromarketing approach with one of the main purposes being to define green consumer segments and understand green consumer behaviour (Kilbourne & Beckmann, 1998). Arnold and Fisher (1996) suggested that this approach has constrained sustainability by targeting some segments and ignoring others. Rather, sustainability requires effort by all members of society to behave in an environmentally responsible manner, which is fundamentally a macromarketing challenge (van Dam & Apeldoorn, 1996). In order to achieve environmental sustainability, a collective effort hinges, in part, on the ability of researchers to address the gap that exists between pro-environmental attitudes and environmentally responsible behaviour. The following sections review literature relevant to the research objectives. First, studies relating to the behavioural gap are discussed. This is followed by a review of efficacy studies in order to demonstrate the relevance of researching efficacy perceptions in addressing the behavioural gap. Finally, the theoretical framework is explained.

2.1 THE BEHAVIOURAL GAP

Several studies described below have established that although most people express pro-environmental concern they do not perform environmentally responsible behaviours. This is referred to in the literature as the behavioural gap. This section demonstrates that being pro-environmentally minded does not necessarily convert to environmentally sustainable behaviour.

A number of studies have found that environmental attitudes are not related to behaviour. Scherhorn (1993) conducted a study of German consumers to explore the discrepancy between pro-environmental attitudes and behaviour. He chose German consumers because they are considered to have a high level of environmental consciousness. This might be because the German government has introduced legislation regarding waste management. The results of Scherhorn's (1993) survey indicated that over seventy percent of German consumers were pro-environmental. That is, they acknowledged the seriousness of environmental problems and the need to protect the environment and were therefore considered to be pro-environmentalist. However, Scherhorn (1993) found that this high percentage of environmentalists in the sample declined when they were asked about their actual behaviour or willingness to revise their behaviour. Therefore, although seventy per cent were considered to be pro-environmental when attitudes were assessed, only forty percent could truly be considered pro-environmental when their behaviours were taken into account (Scherhorn, 1993). Scherhorn (1993) acknowledged that forty percent was still an optimistic proportion of German consumers who were acting to protect the environment. However, he noted that the remaining thirty percent of people with pro-environmental attitudes who were not active in protecting the environment illustrates the difficulties associated with transferring pro-environmental attitudes into pro-environmental behaviours. Scherhorn (1993, p. 172) exposed the magnitude of these difficulties by stating, "it is a big step from growth of knowledge to change of attitude and an even bigger one from change of attitude to change of behaviour."

Measuring pro-environmental concern has also been used to approximate environmental behaviour. Dunlap and Van Liere's concept of the New Environmental Paradigm, which was published in 1978 and then revised in 2000, has been widely used to measure pro-environmental concern (Dunlap & Van Liere, 1978; Dunlap, Van Liere, Mertig & Jones, 2000). In this new paradigm members of society generally hold pro-environmental attitudes and reject anti-environmental responses associated with the Dominant Social Paradigm; therefore they are considered to be pro-environmental in terms of their behaviour. La Trobe and Acott (2001) conducted a study to determine if

people supported beliefs that were consistent with the New Environmental Paradigm or the Dominant Social Paradigm. They found that most people expressed pro-environmental attitudes and that no individuals expressed anti-environmental attitudes. However, Scott and Willits (1994) noted that research in this area has not adequately established a connection between supporters of the New Environmental Paradigm and environmentally responsible behaviour.

In order to address this concern, Scott and Willits (1994) conducted a study to determine how support for ideals relating to the New Environmental Paradigm related to environmental behaviour. They found that although the majority of respondents supported ideas that related to the New Environmental Paradigm, when asked about their actual behaviour, they were less committed to environmentally friendly practices. Scott and Willits (1994) noted that their results were consistent with two decades of studies that have addressed the weak link between attitudes and behaviour in the environmental domain.

Some reasons for this weak relationship have been offered. Firstly “people have learned the language of environmentalism without developing a simultaneous behavioural commitment” (Scott & Willits, 1994, p. 255). Mass media has allowed for information regarding the sensitivity of the natural environment to be easily disseminated (Scherhorn, 1993). La Trobe and Acott (2000) also suggested that large-scale communications and education initiatives about the environment might have prompted people to express environmental concern. However they acknowledged that this concern might not reflect underlying values. It might be detrimental to the environment if beliefs that support a New Environmental Paradigm do not result in an environmentally active public. That is, people might become more complacent about the actions required to protect the environment if they believe that everyone is environmentally aware. Scott and Willits (1994) suggested that people might not be aware of how their own actions contribute to environmental problems and therefore pass the responsibility on to

somewhere else. They also noted that people might lack the specific knowledge about how to contribute to the protection of the natural environment.

The traditional knowledge-attitude-behaviour hierarchy purports that in order to change behaviour, knowledge and attitudes need to be changed first. Hines, Hungerford and Tomera (1987) conducted a meta-analysis of environmental behaviour research in order to synthesize the vast array of results reported by constructing a coherent model. They thought that one of the problems with environmental-behaviour research was that it is unclear which variables in these studies correlate most strongly with environmental behaviour. They analysed cognitive variables, which consisted of knowledge about environmental issues and knowledge about how to take action. They also analysed psychosocial variables, which included attitudes, locus of control, economic orientation, personal responsibility, and verbal commitment. They found that knowledge of environmental problems and knowledge about what action to take was an important influence on environmental behaviour. They also found that more positive environmental attitudes were related to behaviour. These results suggest that knowledge and attitudes do predict behaviour, throwing some doubt on the notion of a behavioural gap widely reported in the literature. However, the authors pointed out that this relationship was much stronger for the studies that included environmental group members in their samples. Therefore, the relationship between knowledge, attitudes, and behaviour that Hines et al. (1987) reported in their meta-analysis was confounded by the high proportion of environmental group members. It is practical to assume that environmental group members would be more active, have higher levels of knowledge and express more positive attitudes about the environment than the general population. However, there is still a need to identify which variables influence people to act in this pro-environmental manner.

Strengthening the otherwise weak correlation between traditional knowledge-attitude-behaviour relationships has been attempted by considering the effect of a number of other variables discussed below. However, it should be noted that none of these

variables has yet fully explained or predicted environmental behaviour. Efficacy has not yet been considered but there is a general recognition that other variables will help to better predict environmentally responsible behaviour.

Cottrell and Graefe (1997) suggested including specific pro-environmental attitudes to strengthen the predictive power of the traditional theory. They found that attitudes relating to specific environmental issues predicted behaviours whereas general pro-environmental attitudes did not. For example, attitudes about boating-waste disposal significantly predicted the amount of raw sewerage that was safely disposed of in a pump-out facility.

The weak knowledge-attitude-behaviour relationship was also partially explained by examining education interventions. Smith, Rechenberg, Cruey, Magness and Sandman (1997) suggested that practical environmental education programs might be more effective in changing attitudes and behaviour than knowledge-based presentations. They studied grade school children because younger children probably would not have established strong environmental practices. They compared the knowledge, attitudes, and behaviours of children who listened to a classroom presentation about recycling to those children who visited a landfill site. Overall they found that the classroom presentation was an effective way to increase knowledge, while the hands-on approach was more effective in changing behaviour. Therefore, applying more practical education interventions for young children might strengthen the weak link between knowledge, attitudes and behaviour. This might also be an appropriate method of intervention for adults.

Laroche, Tomiuk, Bergeron and Barbaro-Forleo (2002) wanted to determine if culture mediated the knowledge-attitude-behaviour relationship. They found that although French-Canadians were more knowledgeable and had more positive attitudes about the environment than English-Canadians they were not subsequently more willing

to behave in an environmentally conscious manner. In fact, even though English-Canadians were less knowledgeable and held less pro-environmental attitudes they were more willing to protect the environment. However, they did find that both French and English Canadians who perceived the importance of environmental problems were likely to spend more on 'green' products. Overall, the knowledge-attitude-behaviour relationship was weak in their study, which they attributed to the possible existence of more important antecedents of environmental behaviour. Although they did not mention efficacy, which is the focus of this thesis, it is plausible to suggest that efficacy perceptions may constitute some of these antecedents.

A common denominator in the knowledge-attitude-behaviour studies is that other variables are seen to be influential. Kurz (2002) discussed the problems of attitude-behaviour models by suggesting that other factors, not controlled by individuals, can cause inconsistencies between pro-environmental attitudes and behaviour. Some of the environmental models he discussed are beyond the scope of this study. However, one of these models is particularly relevant to this thesis. Kurz (2002) referred to Baron and Misovich's (1993) model, which involves the concept of effectiveness. He used an example of this model by suggesting that once people recognise that taking alternative forms of transport are better for the environment, individuals must have the skills and knowledge in order to use them. Although Baron and Misovich (cited in Kurz, 2002) did not use standard efficacy terms, their 'perceived effectiveness' and 'skill levels' are similar to solution efficacy and self-efficacy respectively. Therefore their model is valuable in illustrating that efficacy perceptions may help to explain the weak link between pro-environmental attitudes and behaviour.

The theory of reasoned action was used by Goldenhar and Connell (1993) to predict recycling behaviour; they considered it to be a more accurate predictor of behaviour than the traditional attitude-behaviour models. They briefly reviewed the theory of reasoned action by recognizing that attitudes and social norms are related to behavioural intentions, and that intentions are related to behaviour. Therefore, the theory

of reasoned action uses attitudes as an indirect influence on behaviour. Goldenhar and Connell (1993) hypothesised that intentions to recycle would be mediated by attitudes and social norms. They added previous experience to their model because of its influence on intentions and behaviour. They found that while intentions did predict recycling behaviour, attitudes and social norms did not, which suggests that there is a weak link between direct attitude-behaviour relationships. However they also found that when other variables were added to the model (e.g. gender), the intentions-behaviour relationship became less significant. They acknowledged that although the theory of reasoned action was useful in predicting recycling behaviour, other unmeasured variables would need to be included in order to account for more of the variance. Again, this thesis suggests that efficacy perceptions could be one of these additional variables that help to understand the attitude-behaviour discrepancy.

The way in which people perceive environmental problems might also determine how environmentally active they become. Krause (1993) found that most people in his study were concerned with a similar range of environmentally related issues. However, he noted that most respondents were willing to change some aspects of their behaviour provided they did not require much sacrifice. Generally, he found that these respondents were less willing to change their behaviour when the level of difficulty increased. He also found that respondents' willingness to label themselves as environmentalists (a high proportion of the sample) had little to do with their knowledge about the environment and willingness to change behaviour. Krause (1993) warned that his results indicated that education might not be effective in changing behaviour and that environmental consciousness might be superficial. From this perspective he described environmental consciousness as a "surface concern" (p. 140), suggesting that the majority of Americans view the environment only as a support for humankind; this human-centred view has been termed anthropocentrism in the literature. A number of studies have acknowledged that anthropocentrism is useful in addressing the discrepancy between pro-environmental attitudes and actions. Some of these studies are discussed below.

Studying the underlying motives of anthropocentrism and ecocentrism may help to explain the weak link between attitude and action. Anthropocentrists have a human-centred or utilitarian concern for the natural environment, while ecocentrists have a spiritual connection that recognizes the intrinsic value of the natural environment (Thompson & Barton, 1994). A study by Thompson and Barton (1994) revealed that the people who expressed ecocentric concerns for the natural environment were more likely to conserve resources, whereas those who expressed anthropocentric concerns for the natural environment were less likely to conserve resources. Schultz, Zelezny and Dalrymple (2000) noted that both anthropocentrism and ecocentrism portray positive concerns for the environment, anthropocentrism because nature is necessary for human life and ecocentrism because nature is valued holistically. Shrivastava (1995) purported that anthropocentrism suggests human beings have no moral obligation to protect and preserve the environment, unless it is deemed appropriate or necessary in maintaining and enhancing the quality of life of humankind. This suggests that when the quality of human life or the standard of living is jeopardized, the environment might be justifiably neglected (Thompson & Barton, 1994). Still, they suggested that other factors would need to be studied in order to predict environmental behaviour reliably. Therefore, while being pro-environmental is motivated by two opposing value systems (anthropocentrism and ecocentrism) that might help to explain the behavioural gap, an additional variable such as efficacy perceptions might also provide insight.

This section has demonstrated that pro-environmental attitudes do not necessarily transfer to pro-environmental behaviour. Albert Bandura's concepts of efficacy might be useful in understanding the discrepancy between pro-environmental concern and pro-environmental behaviour. Bandura (1977) conceptualised that efficacy perceptions govern the link between an individual's knowledge and their actions in everyday life. Efficacy perceptions impact on almost everything people do, "how they think, motivate themselves, feel, and behave" (Bandura, 1997, p. 19). Efficacy concepts are reviewed below to establish their relevance to addressing the behavioural gap.

2.2 EFFICACY PERCEPTIONS

This section defines self- and solution efficacy by acknowledging Albert Bandura who dedicated much of his work to efficacy concepts. Other literature is also discussed in order to demonstrate that other disciplines have successfully applied efficacy to behaviour. The few studies that have considered self- and solution efficacy perceptions in relation to environmental behaviour are also discussed. To the researcher's knowledge, *collective* efficacy perceptions have not been applied in the environmental domain and this possibility is discussed last in order to establish its significance to this thesis.

2.2.1 Self- and Solution Efficacy

Self-efficacy is concerned with the beliefs that individuals have about their ability to perform a particular action, while solution efficacy is concerned with the consequences that individuals believe will result from their actions (Bandura, 1986, 1995, 1997). Bandura (1986) cautioned that solution efficacy is concerned with what results from the act, rather than the act itself or how well it is performed. For example, an individual's belief that recycling is within their capability is concerned with self-efficacy while the belief that this might result in the conservation of natural resources is concerned with solution efficacy. He posited that conceptual problems will result if the performance is mistaken for how well it is accomplished instead of the outcome it achieves.

Specifically, Bandura (1986) differentiated between self and solution efficacy by suggesting that although someone might believe that performing a particular action will produce desirable outcomes (high solution efficacy) they may simultaneously think they are incapable of performing that action (low self-efficacy). Therefore, the individual would refrain from the act due to a sense of low self-efficacy. However, Bandura (1986) also noted that even when individuals believe they have the necessary skills to perform a task (high self-efficacy) they may refrain from the act because they believe outcomes are not significant (low solution efficacy).

Maddux (1995) reasoned that self-efficacy is not a personality trait and therefore must be studied according to specific behaviours, which occur in specific contexts. Although he acknowledged that efficacy, as a term, has been used to describe a general trait, it is most useful when defined in relation to a specific behaviour. Bandura (1997) recognised that the treatment of efficacy as an all-encompassing concept violates the assumption that self-efficacy beliefs are multidimensional. However, he also acknowledged that the generalisation of efficacy beliefs to other behaviours cannot be discounted because people do not re-establish their sense of efficacy for every new behaviour performed. According to Bandura (1997, p. 37) “efficacy is a generative capability in which cognitive, social, emotional, and behavioural subskills must be organized and effectively orchestrated to service innumerable purposes.” Efficacy then, is not a static concept and can operate in different doses, according to given situations, and as a result of different influences. Bandura (1986, 1995, 1997) referred to four main sources that strengthen self-efficacy, including; *mastering* the ability to succeed through experiences, learning the successes of others *vicariously*, listening to *verbal persuasion*, and enhancing *physical and emotional status*. First, mastery is the most tangible source of self-efficacy because it “requires experience in overcoming obstacles through perseverant effort” (Bandura, 1997, p. 80). Second, Bandura (1997) stated that vicarious learning convinces people that they have the ability to do something (self-efficacy) when they see that other people can. Third, he noted that people can be verbally persuaded of their ability to perform the behaviour. Fourth, the physiological and emotional states of people influence people’s perceptions of their capabilities (Bandura, 1997). The idea that efficacy can be strengthened to help individuals achieve certain outcomes seems to be particularly appropriate within the area of health promotion, as discussed in the next section.

2.2.2 Efficacy and the Health Belief Model

Within the area of health promotion, efficacy has been studied widely, both independently and as a part of particular theoretical models. The Health Belief Model was developed due to concerns regarding the success of public health programs in the 1950s (Rosenstock, 1990). According to Rosenstock, Strecher and Becker (1988), Bandura's concept of self-efficacy needed to be added to the Health Belief Model to strengthen the explanatory power of the model. Based on Rosenstock's (1990) commentary, the Health Belief Model consists of three components that assess 1) the threat of current behaviour, 2) the benefits and barriers of taking a specific action to reduce the threat (solution efficacy) and, 3) perceived ability to perform the task (self-efficacy). The Health Belief Model and another widely applied theory known as Protection Motivation, according to Rosenstock (1990) can be viewed as one and the same. In 1983 Rogers (cited in Maddux and Rogers, 1983) added self-efficacy to Protection Motivation Theory, which originally consisted of three variables that assessed: 1) the severity of the threatened event, 2) the probability of occurrence and, 3) the efficacy of a recommended coping response (solution efficacy).

Witte (1992) conducted a critique of the fear-related literature and concluded that when threat and efficacy are high, message acceptance is more likely to occur. Rippetoe and Rogers (1987) along with Witte (1992) found that under conditions of low efficacy and high threat individuals were less likely to adopt the necessary behaviour to avert the threat. Generally, fear has been an effective motivator of change when efficacy is high, and ineffective when efficacy is reduced. Maddux and Rogers (1983) tested Protection Motivation Theory (with the addition of self-efficacy) by assessing the effects of fear appeals on the intention of university students to quit smoking and found that self-efficacy was the strongest predictor of behavioural change. In a previous study, Rogers and Mewborn (1976) found that increasing perceptions of solution efficacy was more effective than manipulating fear levels in individuals when faced with danger.

Protection Motivation Theory can be applied just as effectively to other attitude-change attempts as it has been in fear appeals (Maddux & Rogers, 1983; Tanner, Day, and Crask, 1989). Tanner, et al.'s (1989) study of responsible sexual behaviour among university students led to the conclusion that high levels of self- and solution efficacy are more effective than efforts to frighten the audience. They suggested that Protection Motivation Theory should focus on danger rather than fear and be applied to broader social problems. This presents an opportunity for the application of these health models to environmentally responsible behaviour and their potential to explain, at least partially, the behavioural gap that has emerged.

It is rather surprising that these health models have not been applied in depth within the environmental literature. However there is one study that applied the Health Belief Model to environmentally responsible behaviour. Lindsay and Strathman (1997) explained that both the health and the environmental domains involve volitional behaviours whereby people attempt to prevent negative outcomes (e.g. cancer or pollution). Due to this similarity, they used the Health Belief Model to predict recycling behaviour. They found that the traditional Health Belief Model, which included 1) perceived threat, 2) outcome expectancy (solution efficacy) and, 3) self-efficacy was significantly related to recycling. They also included other variables in a modified version of the Health Belief Model to determine whether these variables strengthened the predictive power of the model. These additional variables included 1) norms, 2) procedural knowledge, and 3) consideration of future consequences. Their results indicated that their modified Health Belief Model did not add much to the predictive power of the traditional Health Belief Model. This provides support for the need to understand how efficacy might affect waste minimising behaviour. Although no other studies were found that applied either the Health Belief Model or Protection Motivation Theory to environmentally responsible behaviour, some other studies have applied self- and solution efficacy concepts to environmental research. These are discussed below.

2.2.3 Efficacy in Environmental Studies

Axelrod and Lehman's (1993) research provided support for the study of efficacy in an attempt to close the gap that exists between pro-environmental attitudes and pro-environmental behaviour. They considered three main areas to be important in the prediction of environmentally responsible behaviour including 1) attitudes, 2) efficacy and 3) outcomes desires. They acknowledged that attitudes have not been reliable in predicting environmentally responsible behaviour. However they still included a general environmental attitude measure to determine if it would predict environmentally responsible behaviour in their study. Axelrod and Lehman (1993) found that general environmental attitudes became insignificant as a predictor of environmentally responsible behaviour when other variables were added to their analysis. This is consistent with the previous discussion concerning the behavioural gap in that pro-environmental attitudes do not necessarily predict pro-environmental behaviour.

There were three efficacy factors in Axelrod and Lehman's (1993) study including 1) self-efficacy, 2) response efficacy and 3) channel efficacy. Channel and response efficacy are not commonly discussed and are beyond the scope of this study but they are worth describing in order to illustrate the complexity of efficacy factors. Axelrod and Lehman (1993) defined channel efficacy as the perceived problems or difficulties that individuals are likely to encounter when performing the behaviour. Response efficacy can be easily confused with solution efficacy since both involve perceived effectiveness. Bandura (1997) distinguished between response efficacy and solution efficacy by stating that "response efficacy is concerned with whether a given course of action can produce a particular attainment; [whereas] outcome expectations [solution efficacy] are concerned with the consequences that flow from that attainment" (p. 283). That is, response efficacy is a belief in the *means* through which behaviour is performed (Bandura, 1997) whereas solution efficacy is a belief in the effectiveness of one's own actions. Axelrod and Lehman (1993) found that individuals with high levels of both self- and response efficacy in relation to environmentally responsible behaviour,

along with other factors, were more inclined to behave in an environmentally responsible manner.

They also researched outcome desires, whereby individuals could be motivated by 1) personal gain (tangible outcome desires), 2) social influences (social outcome desires), or 3) deeply held values for the environment (principled outcome desires). They found that environmentally responsible behaviour was not solely motivated by principled outcome desires; tangible and social outcomes desires were also significant. These findings might also help to more accurately enhance solution efficacy. Solution efficacy may be misdiagnosed in the environmental domain if it is assumed that outcome desires are only concerned with protection of the natural environment. Instead, individuals might desire social recognition for their environmental efforts. Solution efficacy would then be concerned with how well individuals think that their environmental actions will produce social recognition. Bandura (1986) suggested that in cases of low solution efficacy, the social environment must adopt appropriate rewards or incentives for recommended behaviours.

One study by Oskamp, et al. (1991) produced an insignificant relationship between efficacy and recycling behaviour. Lindsay and Strathman (1997) attributed Oskamp, et al.'s (1991) non-significant results to their failure to measure self-efficacy. It is unclear but, seemingly, Oskamp, et al.'s (1991) treatment of the term efficacy was concerned only with response efficacy, a belief in the means through which the behaviour is performed. That is, although both recyclers and non-recyclers in Oskamp, et al.'s (1991) study might have thought that recycling could effectively solve waste problems (high response efficacy), they may have also believed they did not possess the skills to do so (low self-efficacy) (Lindsay & Strathman, 1997), or that their efforts to recycle were ineffective (low solution efficacy). Including these efficacy perceptions in Oskamp, et al.'s (1991) study, might have produced significant results after all. That is, self- and solution efficacy might have accounted for some of the differences between those who recycle and those who did not.

Another type of efficacy, which is again distinct from self- and solution efficacy, has also been used to explain environmental behaviour. Manzo and Weinstein (1987) studied active and non-active members of an environmental group, the Sierra Club, and included an efficacy component. They did not include self- or solution efficacy, but they found that active members were more confident that actions by citizens would influence political decisions which they referred to as 'political efficacy.' Bandura (1997) defined political efficacy as "people's beliefs that they can influence the political system" (p. 483). Although Manzo and Weinstein (1987) found that the Sierra Club's active members had stronger perceptions toward gaining political support for the natural environment, they could not discern if this was caused by or a consequence of being an active member.

The theory of planned behaviour has also been used to predict environmental behaviour which is based on the same principles as the theory of reasoned action. That is, intentions are predictive of behaviour. The theory of planned behaviour also includes an efficacy component. Taylor and Todd (1995) tested a model of household recycling and composting behaviour based on the theory of planned behaviour. They found that intentions to recycle or compost were positively influenced by 'perceived behavioural control', which included a measure of self-efficacy. Therefore, there is some evidence to suggest that people's perceptions about their ability to perform (self-efficacy) are an indirect influence on behaviour. This is relevant to the previous discussion of the knowledge-attitude-behaviour theory because self-efficacy might mediate this relationship.

Other studies have examined the effect that 'locus of control' has on environmentally responsible behaviour. Trigg, Perlman, Perry and Janisse (1976) studied internal and external locus of control. They stated that individuals who believe that rewards are dependent upon their own abilities have an internal locus of control, whereas individuals who believe rewards result from others or by chance have an external locus of

control. Trigg, et al. (1976) wanted to determine if people with an internal locus of control who perceived more positive outcomes were more likely to engage in anti-pollution behaviours. They found that those with an internal locus of control were more likely to participate in anti-pollution behaviour when they believed in positive outcomes. In order to measure people's belief in positive versus negative outcomes, Trigg, et al. (1976) asked individuals if they thought pollution would be reduced in the future. However, they did not address how people felt about the outcomes of their own actions that is, solution efficacy.

Internal or external locus of control has also been applied to predict participation in an environmental group and willingness to perform environmental behaviours (Heubner and Lipsey, 1981). Heubner and Lipsey (1981) found that those who were active in an environmental group were more likely to believe that their own abilities could influence the environment. Therefore an external locus of control might prevent people from protecting the environment because they believe that others (and not themselves) can influence the state of the environment. Huebner and Lipsey (1981) found that when locus of control was measured in regards to specific environmental issues, believing that one's own abilities influence events or that events are controlled by powerful others were significant predictors of one's willingness to engage in responsible behaviour.

In a similar study, Hines, et al. (1987) also found that an internal locus of control, verbal commitment and personal responsibility were prerequisites of environmental behaviour. Efficacy factors were used to measure locus of control in their meta-analysis. It is not possible to determine which types of efficacy they included without reviewing all of the studies that were meta-analysed. However it appears they only included measures of solution efficacy since they define the efficacy variable as "an individual's perception of his or her effectiveness in a given situation" (Hines, et al. 1987, p. 4). They also added 'action skills' to their model because skill and knowledge was thought to equip individuals with the appropriate abilities. How people perceive their skill levels (self-

efficacy) is considered to be an important predictor of environmental behaviour in this thesis.

Literature relating to an external locus of control is of particular interest to this research. Hines, et al. (1987) suggested that an external locus of control restricts change at the individual level because those individuals attribute change to powerful others and therefore do not themselves attempt a particular behaviour. Sia, Hungerford and Tomera (1986) included a measure of individual and group locus of control in their study of environmentally responsible behaviour. They found that those who were considered to be environmental activists had a moderate sense of control at the individual level but felt that group efforts would be much more successful in responding to the environmental dilemma. Non-activists had a low sense of control at the individual level and a moderate sense of control at the group level (Sia, et al., 1986).

Likewise, the concept of perceived consumer effectiveness by Ellen, Wiener and Cobb-Walgren (1991) resembled efficacy concepts. In their study, perceived consumer effectiveness measured how individuals felt they could make a difference. This is comparable to solution efficacy in this thesis. However, Ellen, et al. (1991) also measured perceived consumer effectiveness by assessing the degree to which individuals believed that others were willing to make sacrifices. The idea that people might judge the effectiveness of environmental actions by taking into account the behaviour of others leads to the discussion of collective efficacy in this study. Collective efficacy is concerned with the perceptions people have about the abilities of their group to perform. One of the primary objectives of this thesis is to understand if a sense of collective efficacy is related to waste minimising behaviours.

2.2.4 Collective Efficacy

Collective efficacy did not receive as much attention as self- and solution efficacy in Bandura's thinking. He alluded to the importance of collective efficacy by noting that "people do not live their lives in social isolation" (Bandura, 1986, p. 449) and later dedicated a chapter to collective efficacy in his book entitled *Self-efficacy, the exercise of control* (Bandura, 1997). He began this chapter by suggesting that "many of the challenges of life center on common problems that require people to work together with a collective voice to change their lives for the better" (Bandura, 1997, p. 477). Bandura (1986) also recognised that people who perceive their collective efficacy to be high will try to overcome the barriers to the desired changes, while those who perceive their collective efficacy to be low will not be motivated to perform the appropriate behaviour.

According to Zaccaro, Blair, Peterson and Zazanis (1995), collective efficacy has often been defined inadequately. They noted that collective efficacy has most often been defined by extending the concept of self-efficacy to a collective unit of measurement. Specifically, they noted that Bandura's (1986) definition of collective efficacy could be categorized in this way. To illustrate, according to Bandura (1986), collective efficacy is defined as the perceptions of individuals regarding their group's ability to bring about change. Zaccaro, et al. (1995) suggested that collective efficacy should be defined in a way that reflects the change in the unit of perception when it moves from the individual to the collective. Specifically, they noted "moving conceptually from the individual to the group also means that a definition of collective efficacy must acknowledge the notion of collective coordination and the integration of individual contributions to collective effort" (Zaccaro, et al. 1995, p. 308). Therefore their definition stated:

...collective efficacy represents a sense of collective competence shared among individuals when allocating, coordinating, and integrating their resources in a successful concerted response to specific situational demands (Zaccaro, et al. 1995, p. 309).

Subsequently, Bandura (1997) enlarged his earlier definition to incorporate the concept of shared beliefs whereby he defined collective efficacy as:

A group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments (p. 477).

Therefore, as Zaccaro, et al. (1995) illustrated, collective efficacy constitutes shared beliefs at the group level, rather than at the individual level, and implies some level of interdependence. However, they also noted that even in cases of low interdependence, group characteristics affect an individual member's performance. Steiner's (1972, cited in Zaccaro, et al. 1995) definition of additive tasks is relevant to groups consisting of a low level of interdependence whereby the group's success is dependent upon the "summative function of individual efforts and resources" (p. 311). Zaccaro, et al. (1995) also recognised Bandura's (1986) notion that the collective (or group) can consist of any aggregation beyond the individual including nations, and therefore the "aggregation of these individual reactions will dictate the nature of the collective response" (Zaccaro, et al. 1995, p. 306).

Zaccaro, et al. (1995) identified the complexity of collective efficacy in four components. The first, shared beliefs, refers to the way in which group members interpret and pass on information about group conditions. This process forms the group's culture and influences the group's sense of collective competence. Specifically, Zaccaro, et al. (1995) noted how this perceived competence determines members' reactions to future situations. The second component is concerned with perceptions of the group's coordination capabilities. In this sense, collective efficacy involves the belief that other group members can perform the task by successfully coordinating and combining

individual resources. The third aspect of their definition of collective efficacy is concerned with perceptions of the willingness of other group members to contribute resources, and after doing so, perceptions of whether the resources offered are appropriate to achieving collective goals. Finally, Zaccaro, et al.'s (1995) concept of collective efficacy involves situational specificity whereby group members believe in their *aggregated* ability to achieve the desired outcome or purpose for performing the behaviour in a collective manner, which would necessarily involve quantitative measurement.

Although Zaccaro, et al.'s (1995) definition is vital in recognizing that collective efficacy is about shared rather than individual beliefs, another distinction made by Riggs and Knight (1994) is particularly relevant for this qualitative study. They included two components in their assessment of collective efficacy by separating collective efficacy from collective-outcome efficacy. In their definition collective efficacy is concerned with the perceptions individuals hold regarding their group's ability to perform a specific task, while collective-outcome efficacy is concerned with the perceptions that individuals hold regarding the outcome of the collective effort. For the purposes of this exploratory research, it would seem appropriate to use Riggs and Knight's (1994) definitions of collective efficacy and collective-outcome efficacy as long as Zaccaro, et al.'s (1995) concept of shared, rather than individual beliefs, is retained.

Despite Zaccaro, et al.'s (1995) contribution to developing a theoretical model of collective efficacy, there has been, and still is, much confusion about the concept of collective efficacy. Given that collective efficacy has been treated as an individual's perception of group efficacy (e.g., Riggs and Knight, 1994; Kozub & McDonnell, 2000; Zellars, et al. 2001;) it seems that there are two emerging definitions of collective efficacy. For example there are those who follow Zaccaro, et al.'s (1995) concept of shared beliefs and measure collective efficacy as an aggregated construct (e.g. Chen & Bliese, 2002) and those that measure individual beliefs about group efficacy (e.g. Riggs

and Knight, 1994). That is, collective efficacy has been measured as an individual construct in some studies and as an aggregated construct in other studies.

In a later work, Bandura (1997) noted that collective efficacy can be measured by aggregating self-efficacy judgments or by allowing the group to make a joint decision about their group's efficacy. However, aggregating individual self-efficacy judgments does not allow for interaction effects to be measured. For example, those who refrain from acting due to their own low-self efficacy judgments might be mobilized by their faith in the group's efficacy. In this case, aggregating self-efficacy beliefs would underestimate the group's belief in their collective abilities (collective efficacy). Likewise, allowing the group to make a joint decision does not allow for individual differences to be identified and aggregated. In this way, individuals may be convinced to either increase or decrease their own efficacy beliefs to align with other members.

Although collective efficacy has not been widely researched, disciplines such as organisational management, have applied it in varying studies. Riggs and Knight's (1994) study is of particular importance to this thesis because it provided two distinct definitions of collective efficacy and collective-outcome efficacy. In addition, their results are worth mentioning to validate the predictive power of collective efficacy. They found that a high degree of confidence in the abilities of one's work group (collective efficacy) along with the effectiveness of one's work group (collective-outcome efficacy) was related to a high degree of job satisfaction and organisational commitment. Zellars, et al. (2001) also looked at how a sense of collective efficacy in relation to one's work group influences job satisfaction, job exhaustion and intent to resign. They used a nursing environment to conduct their study and found that individuals with a high sense of collective efficacy were more satisfied with their job and less likely to resign.

Collective efficacy was also applied to Prussia and Kinicki's (1996) study of group effectiveness. They developed a complex model, which established a strong link

between collective efficacy and group effectiveness (among other variables). Chen and Bliese (2002) were motivated to study efficacy because they thought, in contrast to some previous research, that efforts to increase self-efficacy might not necessarily increase collective efficacy. They found that the style of leadership in an organisation was related to collective efficacy rather than self-efficacy and that work experience, role clarity and strain were related to self-efficacy rather than collective efficacy. Therefore they illustrated that both self- and collective efficacy beliefs may develop from different sources for individuals and groups.

Other studies in the sports and educational domains are also worth mentioning. Kozub and McDonnell (2000) found that collective efficacy was related to cohesion in rugby teams. That is, they found that when team members perceived the team to be working together in common pursuit of goals (cohesion) the more confident they were about the ability of the team to succeed (collective efficacy). They pointed out that collective efficacy can be a useful measure of effective functioning for complex conglomerates such as sporting teams. Goddard (2000) cited a number of studies that have linked a teacher's sense of self-efficacy to student achievement and a teacher's sense of collective efficacy to school achievement. He expanded this research by finding that collective efficacy predicted teacher efficacy. Therefore teachers who believed in the school's ability to deliver a high standard of education were also more likely to believe in their own abilities as a teacher.

Although collective efficacy has not been directly measured in relation to environmental behaviour, Lindsay and Strathman (1997) noted that environmentally responsible actions produce outcomes that benefit society as a whole rather than at the individual level. However, they did not mention that in order to achieve these benefits to society, it is necessary that people perceive the value of a collective effort. Recognizing this would have emphasized the importance of including a measure of collective efficacy in environmental-behaviour studies.

Although collective efficacy has not been studied directly in the environmental domain, the importance of collective perceptions to environmental behaviour can still be observed. Lubell's (2001) study applied the collective interest model to environmentally responsible behaviour, which purports that when the expected value of participation is positive, people will participate. Expected Value in their study is partially determined by how successful group actions are likely to be. This is similar to the concept of collective-outcome efficacy in this thesis. Collective-outcome efficacy describes how individuals feel about the outcomes of group actions. Therefore although Lubell's (2001) study cannot be directly compared to this study, it is useful in establishing that perceptions about group outcomes may be an important influence on environmentally responsible behaviour.

Some other studies are worth mentioning in regard to their relevance to collective efficacy. Latane, Williams and Harkin's (1979) study of 'social loafing' (i.e., when group size increases, individual effort decreases) might have important implications for the study of collective efficacy. The title of their paper *Many hands make light the work*, is used to illustrate that in some circumstances people work less hard together than they do individually. They referred to an unpublished work in which the Ringleman effect was named. The results of this work were only referred to in summary form by Moede (1972, cited in Latane, et al. 1979). Latane, et al. (1979) reported that the Ringleman study found that the average force produced from more people pulling on a rope was less than the force produced by a single person pulling on a rope. They wanted to conduct a similar study, which involved the noise output produced by groups in comparison to individuals. They found noise output did not increase proportionally to the number of people involved. These authors cited Steiner (1972) who suggested that social loafing might result from a lack of co-ordination by group members. Since Zaccaro, et al.'s (1995) definition of collective efficacy included how people perceive the co-ordination capabilities of others, social loafing may be related to collective efficacy.

Since members of society share environmental problems, individual efforts occur within fairly large social groups (e.g., towns, cities, nations). In the environmental domain, social loafing describes what happens when individuals fail to increase their own environmentally responsible actions when they perceive themselves as belonging to a very large group (e.g. society). Similarly, Kerr (1983) illustrated that when members of a group identify ‘free riders’ (i.e., members who rely on another group member to perform the task) a ‘sucker effect’ can occur which results in those members also reducing their efforts to avoid ‘playing the fool’. Since Zaccaro, et al. (1995) said that these effects can lower collective efficacy they might have important implications for the performance of environmentally responsible behaviours in groups of varying sizes.

Kerr (1989) referred to Garrett Hardin’s (1968) *Tragedy of the Commons* to define the concept of a social dilemma as: “taking as much of a shared resource as possible is individually profitable, but unrestrained and universal exploitation of the resource can result in its depletion and ruin for all” (Kerr, 1989 p. 288.) This is particularly relevant to the environmental domain since excessive consumption is desired by people as a means to increase their quality of life (Kilbourne et al. 1997; Kilbourne et al. 2002) which consequently results in environmental degradation. Kerr (1989) found that, when individuals were faced with a social dilemma, self- and collective efficacy were stronger in smaller groups. Therefore efficacy may be reduced when environmental problems are viewed as an overwhelmingly large societal problem.

As long as members of society feel that individual efforts are ineffective and collective efforts are unrealistic, the pursuit to save the natural environment will be substantially neglected. This idea is found in Bandura (1986, p. 453):

Our own collective efficacy will, in turn, shape how future generations will live their lives. Considering the pressing worldwide problems that loom ahead, people can ill-afford to trade efficacious endeavor for public apathy or mutual immobilization. The times call for a commitment of

collective effort rather than litanies about powerlessness that instil in people beliefs of inefficacy to influence conditions that shape their lives.

Bandura's reference to worldwide problems in the statement above would certainly include the destruction of the natural environment in the present day. In a later book, *Self-efficacy in changing societies*, Bandura (1995) noted humans' capabilities in rendering the planet uninhabitable. In this regard, it is appropriate to suggest that collective efficacy should be applied to studies in the environmental domain. Indeed, it is somewhat surprising that despite Bandura's discussion of collective efficacy in relation to worldwide problems and the natural environment, collective efficacy has not previously been studied in relation to environmental behaviour.

2.3 LITERATURE SUMMARY

In order to add to the body of literature regarding the behavioural gap, literature regarding efficacy perceptions has been reviewed. Since efficacy perceptions affect almost everything people do or do not do (Bandura, 1997), this research may produce significant relationships between the behavioural gap and perceptions of efficacy. A small number of studies have addressed efficacy in regards to environmentally responsible behaviour, but previous studies linking *collective* efficacy to environmentally responsible behaviour have not been found. Collective efficacy is considered to be particularly relevant since environmental sustainability is dependent upon a collective effort.

2.4 THEORETICAL FRAMEWORK

This section outlines the theoretical framework used in this thesis by identifying key studies and concepts.

Bandura's (1986, 1995, 1997) commentary on self-, solution, and collective efficacy has provided the basis for the theoretical framework used in this study. However, Riggs and Knight's (1994) conceptual separation of collective and collective-outcome efficacy has simplified the treatment of collective efficacy in the theoretical framework. Zaccaro, et al.'s (1995) observations have contributed to a more detailed understanding of collective efficacy by establishing the concept of shared beliefs. Collective efficacy as a shared belief requires the quantitative aggregation of group means and distributions which is beyond the scope of this study. Instead, this qualitative study analyses individual perceptions about group processes as an *a priori* step to inform future research that can calculate collective and collective-outcome efficacy as a shared belief.

The following statements summarize the four efficacy perceptions that were used to direct this research into efficacy perceptions: (For ease of reading throughout this thesis, these definitions can be found in a fold-out insert on the back cover.)

1. 'Self-efficacy' is concerned with an individual's perception of how well they can perform an act.
2. 'Solution efficacy' is concerned with an individual's perception of how well their own efforts will produce the desired result.
3. 'Collective efficacy' is concerned with an individual's perception of how well the group can perform the act.
4. 'Collective-outcome efficacy' is concerned with the individual's perception of how well the group's actions will produce the desired result.

There may be interactions between collective/collective-outcome efficacy and self-/solution efficacy. That is, an individual's confidence in the group's ability to perform the act might be high (high collective efficacy) while individuals might simultaneously feel that they are incapable of performing the behaviour (low self-efficacy) and therefore refrain from acting. Or, individuals might feel that their own efforts will not bring about the desired change (low solution efficacy) but simultaneously believe that the group's collective effort can produce the desired result (high collective-outcome efficacy) and therefore they might perform the behaviour.

Bandura (1997) noted that efficacy beliefs constantly change in the face of different social situations and constraints. This indicates that efficacy perceptions might change depending on the type of environmentally responsible behaviour being performed. According to Oskamp, et al. (1991), variables that affect one type of environmentally responsible behaviour may not affect other types. This study focuses on waste minimisation as one example of an environmental behaviour in order to reduce variability in efficacy perceptions emanating from different types of environmental activities. In this study the waste minimising behaviours of three groups of people were examined in order to assess efficacy perceptions in relation to environmental behaviour. Chapter three describes how this was carried out.

CHAPTER 3

MATERIALS AND METHODS

This section discusses the use of qualitative research as the method chosen to best achieve the research objectives.

3.1 QUALITATIVE RESEARCH

No studies have been identified that addressed collective efficacy in regards to environmentally responsible behaviour, and the few studies that have addressed self- and solution efficacy were quantitative (e.g. Lindsay and Strathman, 1997; Axelrod and Lehman, 1993; Manzo and Weinstein, 1987; & Taylor and Todd, 1995). Therefore the current study is particularly suited to an exploratory qualitative research design.

Qualitative research is primarily different to quantitative research because it seeks to examine the process by which experiences are given meaning instead of examining mere relationships between variables (Denzin & Lincoln, 1994). Qualitative research has been criticized because it is based on interpretation. However if interpretation of meanings is excluded, human behaviour cannot ever be understood (Guba & Lincoln, 1994). Interpretation is viewed as a responsibility, not to report what people say, but to interpret what is “observed, heard, or read” (Strauss & Corbin, 1994, p. 274). This involves using a wide variety of methods in order to “get a better fix on the subject at hand” (Denzin & Lincoln, 1994, p. 2). One of these qualitative methods involves the use of focus groups. Keim, Swanson, Cann and Salinas (1999) offered this definition:

Focus groups provide a means of obtaining in-depth information from representatives of a target audience in an atmosphere that encourages discussion of attitudes and perceptions about a specific topic (p. 1).

Fontana and Frey (1994) argued that focus groups can be structured or unstructured depending on the research purpose. For a pre-scientific and exploratory approach, focus groups can be less structured and more interactions between subjects are allowed (Calder, 1977).

Although the use of focus groups in this study can be considered an *a priori* step in developing quantitative scales, the data are still considered useful even if quantitative studies are never undertaken. Calder (1977) recognised that exploratory data taken as everyday knowledge are useful from a phenomenological perspective; phenomenology is concerned with the consumer's account of his or her reality. He defended this approach by stating that phenomenology in qualitative research has practical utility. Therefore this research can be used to inform future quantitative research but is also considered to have practical utility in itself.

Exploratory research involves the identification of theoretical ideas from everyday thoughts with an expectation that such findings will later be quantified with further research (Calder, 1977). This study is considered to be prescientific (Calder, 1977) as it seeks to understand efficacy perceptions so that more reliable scales may be developed in later research. This is essential as Bandura (1995) noted that in order to develop efficacy scales, researchers must have an in-depth knowledge of the behaviour. Qualitative research is best suited to this goal because it produces rich data (Denzin & Lincoln, 1994) which enable in-depth analysis of underlying themes and examination of the full range of interviewee perceptions.

3.2 RESEARCH DESIGN

Bandura (1997) stated that the information on which efficacy scales are based can be supplemented with interviews (among other techniques) in order to ascertain the level of difficulty and the obstacles that are necessary for the successful pursuit of performances. This research involved a critical step towards the development of reliable efficacy scales in relation to waste minimising behaviours by utilising the focus group technique.

Initially it was thought that only two samples were needed to identify differences in efficacy perceptions between people who were active in waste management practices and those who were not. Efficacy was expected to be stronger for those who were active in waste management than for those who were not active. For this study, 'environmentally active' was measured by individuals' involvement in waste minimising behaviours (that is, did they recycle, reuse or reduce waste?). The researcher used a convenience sample in order to recruit the active individuals. This sample gained access to members of the Earth Carers' organisation, which consisted of individuals who were active in waste management practices. Accessing this convenience sample also meant that individuals might hold different beliefs about efficacy and environmental behaviour because they belong to a defined group. That is, group belonging might influence efficacy and action in this study. In order to account for this, another group of active individuals who did not belong to a defined group was included. Therefore, this study included three groups of individuals: 1) environmentally active/members of an environmental group; 2) environmentally active/not members of an environmental group; 3) environmentally inactive and not members of an environmental group.

Table 3.1 illustrates all the possible combinations of efficacy perceptions that could be expressed by the three different samples. Throughout this thesis these three samples have been identified as 'Group Activists', 'Community Activists', and 'Community Non-activists', respectively. Efficacy is presented in this table as a generic

term at this stage but will be interpreted for each efficacy dimension individually later (i.e. self-, solution, collective and collective-outcome efficacy). Comparing Group Activists to the Community Activists/Community Non-activists illustrates whether belonging to a specific group relates to efficacy perceptions. For example, the third combination depicted in Table 3.1 suggests that belonging to a defined environmental group (Group Activists) may be related to high efficacy levels but not necessarily to being active in environmental behaviour because Community Activists, in this hypothetical combination, are found to have low efficacy levels. Comparing Community Non-activists to Group Activists/Community Activists illustrates whether active behaviour relates to efficacy perceptions. For example, the second combination depicted in Table 3.1 suggests that active behaviour may be related to efficacy levels and not necessarily to group belonging. While the first and fourth combinations may conceivably also occur, it was expected that the fifth and sixth combinations were extremely unlikely. The actual combination of efficacy perceptions that resulted is presented in the Results Chapter.

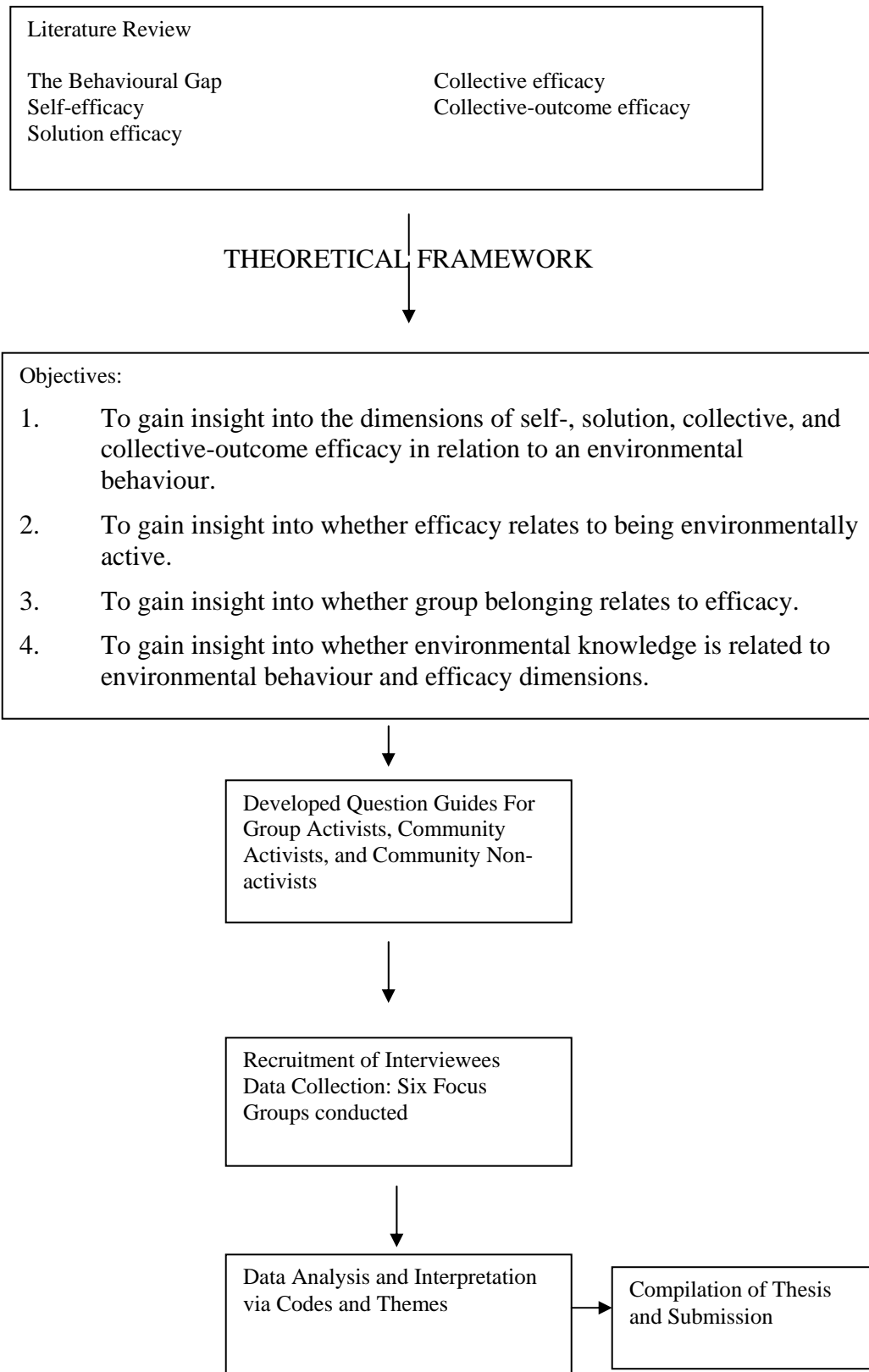
Table 3.1:

All possible combinations of generic efficacy perceptions for the three samples

		Group Activists	Community Activists	Community Non-activists
Generic Efficacy Perceptions	1	High	High	High
	2	High	High	Low
	3	High	Low	Low
	4	Low	Low	Low
	5	Low	Low	High
	6	Low	High	High

The following diagram (Figure 3.1) demonstrates how the research design flowed from the literature review, theoretical framework, and the research objectives.

Figure 3.1: Research Flow Diagram



3.3 TARGET POPULATION

The three samples that were needed to identify the relationships between efficacy, environmental action, and group belonging are discussed below. These three groups were necessarily selected from two distinct populations.

The Earth Carers' program, developed by the Department of Environmental Protection in Western Australia, is a community-based program designed to educate residents about waste minimisation. The program is based on the notion that environmentally responsible behaviour will increase when members promote the program in their own community. For example, neighbours generally engage in 'over-the-fence' conversations which is seen as a credible and practical way to disseminate waste management information. The Earth Carers' group was used to select the first sample which consisted of group members who were active in waste management. Therefore they constitute the Group Activists, representing the active/defined group dimension of the research.

The second and third samples were selected from the general population that resides within one of the suburbs in which the Earth Carers' program is active. Although Earth Carers is active in a number of western suburbs, the suburb of Subiaco was selected because the Subiaco council provided a free venue for the focus group sessions. The second sample consisted of environmentally active community members who did not belong to an environmental group. Therefore they constitute the Community Activists, representing the active/undefined group dimension of this study. The third sample consisted of environmentally non-active community members who did not belong to an environmental group. Therefore they constitute the Community Non-activists, representing the inactive/undefined group dimension of this study. Since the behavioural gap occurs in individuals who express pro-environmental concerns but do not transform this concern into action, the Community Non-activists represent the behavioural gap in this study.

The final combined sample consisted of a total of forty-three interviewees. This complies with Sampson’s (1996) recommendation that a qualitative sample consisting of at least twenty-four to thirty interviewees is considered adequate. One male and one female focus group was conducted for each of the three samples which resulted in a total of six focus group sessions. Table 3.2 illustrates the allocation of the six focus groups and the number of interviewees who attended each session.

Table 3.2:

Interviewee attendance for each of the six focus groups

	Group Activists	Community Activists	Community Non-activists	Total
Females	7	8	6	21
Mixed gender	3 m/5 f*			8
Males		8	6	14
Total	15	16	12	43

* This is explained in Section 3.5

Van Liere and Dunlap (1980) suggested that a number of studies have found demographics to be only vaguely linked to environmental concern. In this study, the age demographic was collected during the screening process so that a fairly even distribution of ages could be included in the three samples. It was intended that the first two focus groups would guide the selection of matched demographics for the remaining focus groups. This was to ensure that inter-group variance emanating from diverse demographic profiles was minimised. However, a broad spectrum of ages ranging from 18 to 65 resulted for the first focus group and therefore all six focus groups followed a similarly broad age demographic.

3.4 MATERIALS

This section describes the instruments and materials which were developed to conduct the research.

A screening survey was used to identify appropriate candidates to be included in focus group sessions for Community Activists and Community Non-activists (see Appendix A). This screening survey identified those who were active or inactive by asking enquirers if they performed certain types of waste management practices. They were considered to be active if they performed two out of the three waste minimising behaviours (recycling, reducing or reusing). Basic demographic information was also identified via this survey including age and suburb of residence. Group Activists were not screened for being environmentally active because they belonged to an environmental group – Earth Carers – and therefore were assumed to be environmentally active. The co-ordinator of the Earth Carers program was able to verify that all group members were active in waste management.

A flexible question plan addressing the research objectives and exploratory aims was used during the focus group sessions. (The basic question plan can be viewed in Appendix B.) The basic question plan was varied for each of the three samples (Group Activists, Community Activists and Community Non-activists) to account for their unique characteristics. For example, Group Activists were members of the Earth Carers' program whereas Community Activists and Community Non-activists were not. Likewise, Group Activists and Community Activists performed waste minimising behaviour while Community Non-activists did not. Some of the questions used to address the research objective are outlined below.

Knowledge:

- What are some of the things you can do to protect the environment?

- How do you feel about the comment “recycling is easy”?
- Where does most of our waste go?

Self-efficacy:

- Tell me how you feel about your ability to recycle/reduce/reuse?
- At what point does it become too difficult?
- If people in your household will not recycle will you still keep trying?

Solution efficacy:

- How confident are you that your own actions will help to reduce waste in W.A?
- How do you feel about your efforts being worthwhile?

Collective efficacy:

- How do you feel about the abilities of other Earth Carers to recycle/reduce/reuse? (Groups Activists only.)
- How do you feel about the abilities of other members in your community?
- What do you think makes it difficult for them?

Collective-outcome efficacy:

- How confident are you that Earth Carers are helping to reduce waste in W.A? (Group Activists only.)
- If everyone does ‘their bit’ tell me how you feel about being able to reduce waste in W.A?

An unstructured interviewing approach was utilised which allowed interviewees to direct the discussion and enabled the researcher to vary content in certain situations (Fontana & Frey, 1994). This flexibility was useful because questions were adapted to suit interviewees instantaneously. However, some consistency was maintained (e.g., general wording and order of questions) in order to ensure key concepts were covered. Broad open-ended questions were used to stimulate discussion and any deviations were considered before the discussion was re-directed. This is consistent with Arnould and Wallendorf's (1994) assertion that deviations by interviewees may contain important insights. However a moderate degree of control was necessary to avoid 'soap box' type discussions of controversial environmental issues. Fontana and Frey's (1994) recommendations on conducting group interviews (focus groups) were also used to guide the sessions. Specifically, their guidance on gaining trust and establishing rapport with interviewees was followed during focus group sessions.

Primarily Riggs and Knight's (1994) definitions pertaining to self-, solution, collective and collective-outcome efficacy guided the content of the question plans. Bandura's (1986, 1995, 1997) account of efficacy perceptions, along with Zaccaro, et al.'s (1995) discussion of collective efficacy was also used to develop the question plan. Lindsay and Strathman's (1997), Axelrod and Lehman's (1993), Manzo and Weinstein's (1987) and Taylor and Todd's (1995) research on efficacy perceptions in relation to environmentally responsible behaviours was also consulted as a general guide. Since collective efficacy has not yet been studied in relation to an environmentally responsible behaviour, Zaccaro, et al.'s (1995) discussion of collective efficacy was used as a check for the development of questions relating to collective efficacy. Some 'paper and pencil' exercises were also used to give interviewees a chance to gather their thoughts before discussions began. This enabled them to fully consider their perceptions prior to focus group participation. (The paper and pencil exercises formed part of the questions plan and can be viewed in Appendix B.)

3.5 PROCEDURE

To ensure that the focus groups were manageable an attendance of six interviewees per focus group was considered to be ideal. However, eight people were invited to attend each scheduled session to account for last minute cancellations and any 'no-shows'. All focus groups were adequately attended, ranging from six to eight interviewees for each focus group. (In Section 3.3, Table 3.2 illustrated the attendance for each focus group.)

The co-ordinator of the Earth Carers' program was consulted in order to determine the most appropriate way to recruit members for the first sample - Group Activists. For privacy reasons, an external party was not permitted to access member details. For this reason, the co-ordinator agreed to be responsible for recruiting both female and male members for the first two focus groups. According to the co-ordinator, all members were actively involved in waste management and did not require screening for that factor. Members were sent an email which detailed the purpose of the focus group and reasons why they might want to attend. Where members did not have email addresses, they were informed by telephone. Members who were interested were asked to contact the Earth Carers' co-ordinator for further details. The first eight female members who responded agreed to attend a focus group which was scheduled at the time usually dedicated to their fortnightly meeting. Seven out of the eight recruited female interviewees attended this focus group on the 18th of February 2003 at 7 pm in the Cottesloe Council Civic Centre.

At the time the research was carried out there were only three male members of the Earth Carers' Program. All three were contacted by telephone and agreed to attend the second focus group. Five other female members who were unable to attend the female focus group were included in this male focus group. This was because they were unhappy when they were not able to join the female group because all places had been filled. Although this created some limitations (addressed later), it was important to

maintain goodwill with the Earth Carers' group as a whole. In total 8 interviewees attended this focus group. However, male responses were recorded on separate interview transcripts and female responses were incorporated into the female transcripts for Group Activists. This focus group was held on the 20th of February 2003 at 7 pm in the Tom Dador Community Centre in Subiaco.

In order to recruit interviewees for the second sample - Community Activists - flyers were distributed in one of the suburbs which Earth Carers targeted. Subiaco was selected as the recruiting suburb because the Subiaco Council allowed the focus groups to be held in the Tom Dador Community Centre at no charge which was convenient for Subiaco residents. The Subiaco town centre is set up in such a way that most interviewees were able to walk or cycle to the venue. In order to follow a diversified recruitment process, flyers were placed in three 'high-traffic' locations. These three locations consisted of 1) the local library, 2) a pin-up board in a popular arcade, and 3) the local Post Office. The second location (pin-up board) produced the greatest number of enquiries regarding the focus groups. The flyers were designed to capture the attention of environmentally active individuals by using a headline, which asked "Do you care about the environment?" (This can be viewed in Appendix C.) Tear-off contact details were attached to the flyer so that interested parties could make contact. The date and time of both the female and male focus groups were also advertised on the flyer. Early evening was considered to be a sensible time to schedule the focus groups. Enquirers were screened to ensure that they *were* environmentally active and did *not* belong to any environmental groups. (This screening survey can be viewed in Appendix A.) A person was considered to be environmentally active if they performed two out of the three types of waste minimisation practices - recycle, reduce, reuse. A lead-time of two weeks was allocated to complete the recruitment process. In total sixteen interviewees were recruited. Eight female interviewees attended the focus group on the 31st of March 2003, and eight male interviewees attended the focus group on the 3rd of April 2003. Both of these focus groups were held in the Tom Dador Community Centre at 7 pm.

The third sample - Community Non-activists - also recruited interviewees who resided in Subiaco. Flyers were placed in the same three locations that were used to select the second sample. The flyer was adapted in order to attract people who did not perform waste minimising activities. One of the headlines on the flyer asked potential interviewees if “they were the sort of person who cares about the environment but just doesn’t do much about it?” This headline was used because most people are considered to be pro-environmental (e.g., La Trobe and Acott, 2000) and therefore there was a need to acknowledge that people generally were concerned about the environment but for some unknown reason do not act upon their concern. (This flyer can be viewed in Appendix D.) Enquirers were screened to ensure they were *not* active in waste management (see Appendix A). It was assumed that people who were not active in waste management would also not belong to an environmental group. However the majority of the initial enquiries produced individuals who were active. To overcome this the flyers were re-designed to omit any mention of the environmental topic (see Appendix E). An advertisement was also placed in the volunteer’s section of the local paper (*Western Suburbs Weekly*) which invited residents to attend a ‘general discussion group’. This advertisement ran in two issues on the 8th of April 2003 and the 22nd of April 2003 (see Appendix F). Contact details were included on both the flyer and the advertisement so that interested parties could make contact and be screened accordingly. This recruiting process took one month to complete from the time that the flyers were put up. A total of twelve people were recruited. Six female interviewees attended the focus group on 17th of April 2003, and six male interviewees attended the focus group on the 28th of April 2003. Both of these focus groups were held in the Tom Dador Community Centre at 7 pm.

At the commencement of each focus group a consent form was distributed and signed by all interviewees. This form also included a short questionnaire which confirmed that interviewees were either active or inactive in waste management practices. Basic demographic information was also collected via this questionnaire including age, gender and suburb. (A copy of the consent form and cover letter can be viewed in Appendix G.)

In order to ensure that initial data interpretations were credible a simple form of member checking was employed during the focus group sessions. Lincoln and Guba (1985) suggested that member checks provide interviewees with “an immediate opportunity to correct errors of fact and challenge what are perceived to be wrong interpretations” (p. 314). This was conducted by rephrasing comments made by interviewees to ensure that dialogue was being understood. At times, this involved the researcher offering an interpretation of what interviewees said and then asking them if the analysis was accurate.

Playing the ‘devil’s advocate’ enabled the drawing out of interviewee insights and negative case analysis was used where appropriate to reduce the influences of ‘group think’. Playing the devil’s advocate involved making controversial statements about waste minimising behaviour. For example, the researcher suggested that waste would not be a problem in the future because scientists would develop a way to solve the problem; this implied that their efforts would become redundant eventually and the human race would find a way to overcome resource shortages. This was a successful technique which resulted in interviewees sharing, in more depth, their knowledge and feelings about what they currently do or do not do. Negative case analysis is designed to ensure that there are no exceptions to all known cases (Lincoln and Guba, 1985). In this study, the researcher noted recurring themes and developed questions which would draw out opposing themes. For example, if interviewees agreed that recycling was easy, the researcher asked them to consider how they would feel after a bad day at work, or if their family members were not co-operating. A simple projective technique was also incorporated into this process in order to aid the identification of negative cases. This involved asking interviewees to consider certain scenarios that enabled them to examine their thoughts and feelings in different contexts. For example, they were asked to imagine how they would feel if there were no recycling facilities at their holiday destination. Projective techniques are particularly useful in exploring “the ways people transform and externalise their experience in some narrative form...” (Levy, 1981, p. 51).

By making use of simple mind scenarios the identification of opposing themes were more easily uncovered.

All six focus group sessions were audio-recorded. Time was allocated at the beginning of each session to act as a 'getting to know you' exercise. This initiated the trust and rapport building process discussed by Fontana and Frey (1994). Refreshments were provided during this time and throughout the evening. At the end of each session all interviewees were reimbursed thirty dollars for their expenses associated with participating (e.g., loss of time, petrol, public transport).

3.6 DATA ANALYSIS

Focus group data provided *emic* information regarding the specific behaviours of interviewees. Emic information is provided by the interviewees' accounts of their own behaviour, whereby they "...recall, interpret, script, and give meaning to consumption events" (Arnould and Wallendorf, 1994, p. 490).

Focus group dialogue was transcribed within forty-eight hours from the conclusion of focus group sessions to ensure that dialogue remained 'fresh' in the mind of the researcher. Themes were developed from the data collected during the six focus groups. This was done manually whereby codes were first applied to the data to represent key concepts. Strauss and Corbin (1990) discussed the usefulness of coding when analysing qualitative data. They suggested that coding helps to legitimise interpretations because it provides a process by which themes are constructed. Essentially, coding breaks down data, arranges it into similar concepts and then reconstructs the data in a more meaningful way (Strauss & Corbin, 1990). Straus and Corbin (1990) recommended using three coding stages; open codes are used to signify similar phenomena, axial codes then link these phenomena in a new way and selective codes refine and validate the relationships identified. Straus and Corbin (1990) noted that

this coding process should not necessarily be followed as an absolute or rigid process. To make this point they quoted Diesing (1971):

The procedures are not mechanical or automatic, nor do they constitute an algorithm guaranteed to give results. They are rather to be applied flexibly according to circumstances; their order may vary, and alternatives are available at every step (cited in Strauss & Corbin, 1990, p. 59).

The coding process used in this study adapted some of the techniques noted by Strauss and Corbin (1990). First, the six transcripts were coded individually whereby all data was categorised according to each of the efficacy dimensions. That is, all statements that related to self-, solution, collective or collective-outcome efficacy were grouped into separate categories for each transcript. Statements which related to environmental knowledge and concern were also allocated a separate category. This enabled the individual efficacy dimensions (self-, solution, collective and collective-outcome efficacy) to be analysed in comparison to the three samples (Group Activists, Community Activists and Community Non-activists). Open-codes were identified within each category. For example, codes pertaining to ease, emotion, cost, and strength were identified within the self-efficacy category. These highly descriptive codes were then re-grouped into more meaningful categories (axial codes) which formed the basis of the emerging themes. For example the codes relating to strength and emotion were combined to represent the themes of persistence and conscience. Codes were labelled by using theoretical and *in vivo* (Strauss & Corbin, 1990) terminology. For example, the *strength* of self-efficacy was identified by Bandura (1997) in the literature and is therefore considered to be a theoretical code. *Conscience* is considered to be an *in vivo* code because it was derived from comments made by interviewees. Broader codes were also used to identify differences between the three samples. That is, statements which constituted 'high' self-efficacy were compared to those that constituted 'low' or 'mixed' self-efficacy. These codes could be classified as selective codes since they enabled relationships to be clearly identified and compared.

A specific framework consisting of the identification of myths, stories, disjunctures, glosses, and overgeneralisations used by interviewees can assist researchers in deriving themes. Arnould and Wallendorf (1994) offered instruction on these techniques and their suggestions were consulted as a general guide to the analysis. For example, overgeneralisations were identified when interviewees expressed that “*everyone* is greedy and selfish” or that “*nobody* gives a damn.” Likewise, glosses were identified when people used metaphors to give meaning to actions (Arnould & Wallendorf, 1994). For example, interviewees talked about “*stripping* the earth and *bleeding* it dry” or that “recycling was a *waste of time*” and that people lived in a “*spaceless* society.”

The validity, reliability and generalisability criteria used in quantitative studies have created a crisis whereby qualitative studies must also be legitimised through established criteria (Lincoln & Guba, 1994). In order to ensure the trustworthiness of qualitative data, other criteria are applicable: transferability, credibility, dependability, and confirmability (Lincoln and Guba, 1985; Wallendorf and Belk, 1989).

Transferability is concerned with the degree to which data can be generalised (Lincoln & Guba, 1985). Although qualitative research is not ever considered to be generalisable, Calder (1977) pointed out that for exploratory research in particular, generalisability is not meaningful. Since this study is best described as exploratory and pre-scientific, these focus groups should not be considered capable of yielding generalisable findings (Calder, 1977). Instead, Calder (1977, p. 360) recognised that:

“exploratory focus groups only suggest a construct or provide a comparison with everyday knowledge. Sample generalizability is a property only of subsequent quantitative research. It is misleading even to speak about generalizability of exploratory focus groups.”

Calder (1977) noted that for phenomenological research, generalisability should be used to determine if meanings derived from focus groups are shared. Therefore he

suggested that quantitative surveys should be used, not to offer scientific evidence but to check if “everyday perspectives” are shared (Calder, 1977, p. 361).

Credibility replaces the quantitative ‘internal validity’ criterion and is concerned with constructing a plausible description of the multiple realities being investigated (Lincoln & Guba, 1985). To achieve credibility in this research, triangulation was used whereby the researcher and the supervisor were involved in the continuous checking of emerging themes. The co-ordinator of the Earth Carers’ program was used as a third party to complete the triangle. She was considered appropriate because of her involvement in community-based waste management. An informal interview was conducted whereby the co-ordinator was asked to comment on emerging themes. She was able to offer feedback on interpretations relating to both active and inactive individuals in this study because she observed these behaviours on a daily basis. In addition to this, Section 3.5 discussed the use of negative case analysis during focus group sessions. This was used to minimise groupthink and is also considered to contribute to credibility (Lincoln & Guba, 1985). The remaining criteria of dependability and confirmability are inextricably linked (Lincoln & Guba, 1985); both are concerned with the reliability of the data. For this research, a journal was kept whereby notes were taken during and after focus group sessions in order to achieve these criteria. For example, body language was recorded during focus group sessions and any relevant comments that were made after the sessions concluded were recorded in the journal and then ‘read’ in conjunction with interview transcripts.

This section described the materials and method used to conduct this research. The following chapter presents the results of the data analysis.

CHAPTER 4

RESULTS

The following section outlines the results for the three groups, which consisted of a defined group who were environmentally active, and two undefined groups, one being environmentally active, and the other being environmentally inactive. These groups are labelled Group Activists, Community Activists, and Community Non-activists respectively. Firstly, pro-environmental attitudes across the groups are discussed to illustrate the presence of the behavioural gap in this study. Then, knowledge levels are addressed to determine if knowledge is an important determinant of behaviour. The dimensions of efficacy are then discussed for each of the three groups. Gender differences are also outlined where appropriate. Interviewee verbatims are used to illustrate the main findings and key themes. Each verbatim is followed by an abbreviation which denotes the group and gender of the interviewee. Group Activists, Community Activists, and Community Non-activists are abbreviated as 'GA', 'CA', and 'CNA' respectively. The abbreviations of 'M' and 'F' are used to denote the Male and Female gender. For example, F, CA refers to a female Community Activist.

4.1 PRO-ENVIRONMENTALISM

This section outlines two types of pro-environmental concern that were identified for the three groups. The purpose of this is to illustrate that despite differences in the type of concern expressed, all interviewees were still considered to be pro-environmental. This aids in the exposure of the behavioural gap in this thesis; a behavioural gap is observed when pro-environmental attitudes do not transfer to pro-environmental behaviours.

All interviewees expressed pro-environmental concern for the natural environment in this study. Some differences in the type of concern were observed when the principles of ecocentrism and anthropocentrism were applied to the data. An ecocentric view recognises the intrinsic value of the environment while an anthropocentric view translates the value of the environment into a human-centred or utilitarian resource (Thompson & Barton, 1994). This is relevant to environmental sustainability because anthropocentrists might only act to protect the environment in order to satisfy self-interests. The active groups in the sample, being the Group Activists and the Community Activists, tended to express their concern in ecocentric terms. The following statements illustrate this:

So much of our emotions are a link to our senses. How we experience the air, how we breathe it, how fresh it is and the scent. The smell is important for me because I grew up on a farm and with the degradation and having moved to the city it's a whole different ballgame in terms of the way I feel and sense. The environment is part of us as much as we are part of it. (F, GA)

Plants and animals don't have a say in the matter. It's just about being responsible. I think it's an attitude that can surround people's whole lives. (F, GA)

There is a lack of value placed on the environment. I think that crosses the environmental and social border and that's a large problem in the world because people don't have a community value. Social and environmental are the same. (M, GA)

If people can appreciate habitats instead of just places like a forest. Instead of it being a forest it's an ecosystem that has birds and plants and stuff. Then people can see why we shouldn't destroy. (F, CA)

If people spend more time going through parks and visiting nature on reserves. If you can make time to go and see the ocean and be part of it then maybe you will care more. (M, CA)

The inactive group (Community Non-Activists) tended to express anthropocentric concerns for the natural environment. For example:

Air pollution is a worry because we don't know how it's going to affect our health in the future. (F, CNA)

There was something on the news about lead levels in fish the other night and that's worrying because it affects me and my kids' future. You worry about genetics and what's going to happen in the next generation. (F, CNA)

We're developing so much land and that's a worry because of the kids. Where will they be able to play? I'm also worried about availability of backyard space. (M, CNA)

Years ago we used to swim in the Swan River and now you wouldn't dream of it. Who knows what disease you might get. (F, CNA)

The only real problem we have with the environment is knowing how to deal with it. I'm sure someday we will be able to create trees and stuff just like we can now clone things. (M, CNA)

I worry about how we might be poisoning our bodies. We might all suffer one day because we have not taken care of things that support our lives (F, CNA)

The literature indicated that anthropocentric views might be used to explain the discrepancy that exists between pro-environmental concern and pro-environmental behaviour (the behavioural gap). However, more research would be necessary to determine if anthropocentrism related to the behavioural gap in this research. For this thesis, pro-environmentalism was addressed only to establish that a behavioural gap did in fact exist in order to determine if efficacy perceptions could help to explain this gap.

4.2 THE BEHAVIOURAL GAP

People can be concerned about the natural environment without ever taking any action to protect it. In the literature, this observation is referred to as the ‘behavioural gap’. The Community Non-Activists represented a ‘behavioural gap’ in this study since they were concerned about the environment but did not act to protect it. In order to confirm this, interviewees were asked to express how they felt about the environment during a paper-and-pencil exercise at the commencement of the focus group before the topic had been fully disclosed. It was evident that Community Non-Activists expressed a general concern for the environment by making statements such as “It bothers me that our environment is being damaged,” “I get angry when I look at what’s happening in the environment, “It’s a worry when you think about the future of our planet”.

The following sections present the results pertaining to efficacy perceptions in relation to the behavioural gap. However, knowledge is addressed first because the literature established that the traditional knowledge-attitude-behaviour hierarchy does not relate strongly to environmental behaviour. The following sections demonstrate the knowledge levels of Group Activists, Community Activists and Community Non-activists respectively in order to determine if knowledge related to waste minimising behaviours or efficacy perceptions in this study.

4.3 KNOWLEDGE

Knowledge about the effects of waste and knowledge about the actions necessary to reduce waste were identified for the three samples. Different themes were apparent for the three groups.

4.3.1 Knowledge: Group Activists

Group Activists appeared to have a high level of knowledge about waste. They were knowledgeable about both the effects of waste and how it can be reduced. They tended to use specific terms when discussing waste problems such as “salinity”, “algae blooms,” “leaching toxins,” “destruction of biodiversity,” “landfill,” “greenhouse gasses,” and “non-renewable resources.”

Group Activists also expressed a level of knowledge that allowed them to see the “big picture.” For example, one woman said:

If it's [waste] in the ground it's polluting the ground water. To get it there [to landfill], it's the pollution of the trucks and it's cutting down the trees and mining hills. I think that it's the unseen costs of climate change, resource depletion, leaching... (F, GA)

This view involves a greater understanding of the complexities of the waste issue by focusing on the intangible effects. Another statement made by a male interviewee illustrates a high degree of knowledge about the intangible effects of waste:

Waste is everywhere...It's all in the sky, you can't see it but waste is here. You have to make yourself see it. It's leaching into our local waterways and destroying resources. (M, GA)

Knowledge of this “big picture” that waste represents can also be seen in the following statement whereby one woman said “you might be able to make electricity from burning waste but you are also burning resources.”

Group Activists were also very knowledgeable about the actions that were necessary to reduce waste. They discussed ways to reduce waste by mentioning things

such as composting and worm farming. They also focused on reducing waste in very practical ways. The following statements illustrate this:

“Buy things that don’t produce waste. Buy your veggies fresh without plastic wrap and put them in a calico bag. Because then you finish with it and you don’t have any waste. The first step is to buy something that doesn’t produce waste in the first place. (M, GA)

Also buy stuff with less packaging like your tubs of yoghurt instead of individual lunch size ones. (M, GA)

If you go to a place like Manna’s in Fremantle you can actually go with a container and fill it up with dishwashing liquid. If you want to buy cereals they have paper bags...I’m happy to do it because I know while it’s not completely sustainable I am paying for those unseen costs. (F, GA)

Since Group Activists were also part of the defined group (Earth Carers), knowledge seemed to be related to group belonging. The following statements illustrate this:

I wanted to learn more about composting so that’s one of the things that got me in to Earth Carers. (F, GA)

I think I already knew a reasonable amount beforehand. Earth Carers was a way of expanding on that knowledge. (F, GA)

Understanding what’s involved in it is more difficult. Before I came to Earth Carers I was consciously environmentally friendly but I didn’t realize a lot of what I was doing wasn’t environmentally friendly. I’ve got that out of Earth Carers as well. I hadn’t thought about various things before. (M, GA)

I guess though that being an Earth Carer has made a significant difference. Before that I’d never composted and didn’t really know how to. (M, GA)

Overall, Group Activists were highly knowledgeable about the effects of waste and the actions required to reduce waste.

4.3.2 Knowledge: Community Activists

Community Activists also appeared to be knowledgeable about reducing waste. When interviewees were asked about ways to reduce waste, public transport, car-pooling, worm farming, and buying non-packaged foods were discussed.

However, at times their knowledge about the effects of waste seemed to be less ‘concrete’ than Group Activists. For some female interviewees this was seen when they used words such as “I think” when describing waste problems. For example:

It goes to the tip but after that I don’t know where it goes. (F, CA)

I think they just burn it or burn it in [to landfill]. (F, CA)

I think it produces harmful gasses. (F, CA)

Male interviewees also expressed less concrete knowledge about waste problems in comparison to Group Activists. For example:

“Bleach is a prime example and people pour it down the sink. I know this stuff is going *somewhere* and that’s not good.” (M, CA)

“The waste will end up *somewhere* in the environment, maybe the river or the soil.” (M, CA)

Overall, Community Activists were slightly less knowledgeable about the effects of waste but knew what actions were required to reduce waste.

4.3.3 Knowledge: Community Non-activists

Community Non-activists also appeared to have a moderate level of knowledge about ways to reduce waste. They too discussed things like public transport, purchasing natural products, and not littering. However, they did not discuss things such as worm farming, composting or buying products with less packaging.

Some interviewees were complacent when discussing problems about waste. They made statements such as:

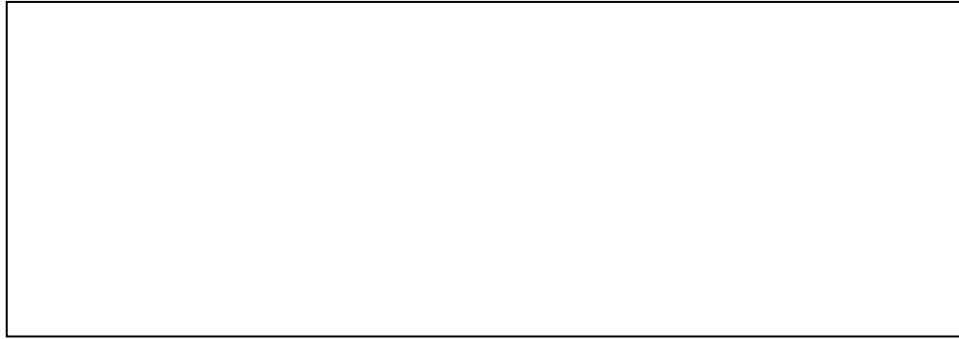
Waste is obviously not a very big problem in Perth as it is in Sydney because we don't have the population...I think it's going to be a big problem as our population increases. (F, CNA)

Waste is just stuff we haven't found a way to use yet. It's only waste if we don't find another use for it. (M, CNA)

The issue is just where to put the rubbish that we are producing. It's space and the cost of the land. The land where the tips are could be very very valuable probably as residential. So the problem is to find the appropriate place for tips [landfill]. (F, CNA)

Figure 4.1 is used to illustrate the comment above made by a Female Community Non-activist. Although the cartoon is meant to be lighthearted, it serves to illustrate the complacent views that some people might hold about waste disposal.

Figure 4.1: Cartoon that demonstrates complacency toward the environment



Some Community Non-activists were also unsure of the effects of waste. When they were asked about the problems associated with landfilling comments such as “I’m not sure, ”and “we just don’t know,” were typical. For example:

You just don’t know what is in waste. I mean I think it might be toxic. There has been talk of toxins. (F, CNA)

I’m not really sure what rots down to make methane but that might be a problem. (F, CNA)

Do you get groundwater contamination from waste? I’m not sure but it wouldn’t surprise me if you get some sort of flow on into the upper layer like reservoirs. (M, CNA)

We’d hope that is doesn’t cause toxins but who knows. We don’t really know what’s going on under there do we? (M, CNA)

However, some interviewees acknowledged the problem with plastic bags, admitting that they were damaging to the environment. One man said that plastic bags were “virtually indestructible” while another woman thought that eventually “we would be sinking on a sea of plastic.”

Community Non-Activists did not know where they could go to find environmentally friendly products. In contrast to the Group Activists who knew of specific places to go (e.g., Manna's in Fremantle) one Community Non-Activists mentioned:

“What’s that place called? Planet Ark or something. I think you can buy stuff from them but I wouldn’t have a clue where they are.” (F, CNA)

Although, Community Non-activists knew some of the actions required to reduce waste, they were less knowledgeable about the effects of waste and were complacent about waste issues. However, knowledge and self-efficacy seemed to be closely related for Community Non-Activists whereby confusion about “knowing how to” indicated a low sense of self-efficacy. This is discussed later in Section 4.4.3.

The following sections outline the findings for each of the efficacy dimensions.

4.4 DIMENSIONS OF EFFICACY

Self-efficacy is concerned with an individual’s perception of how well they can perform a particular behaviour, while solution efficacy is concerned with the individual’s perceptions regarding the effectiveness of the behaviour. In a quantifiable study it would be possible to treat collective efficacy as an aggregated construct. In this qualitative study collective efficacy has been identified as the individual’s perception of the group’s ability to perform a particular behaviour. Collective-outcome efficacy is defined as the individual’s perception of the effectiveness of the group’s action. For this study it was expected that members of the defined group, Group Activists, would express more consistent perceptions of efficacy than members of the undefined groups, Community Activists and Community Non-activists. Table 4.1 summarises the complex findings that

emerged relating to efficacy levels for each of the three groups. In order to understand the Table, the following sections, which describe these results, should be consulted. In the Table, 'high' indicates consistently high perceptions of efficacy, 'low' indicates consistently low perceptions of efficacy and, 'mixed' indicates a range of efficacy perceptions from high to low. The following sections explain the efficacy levels identified in the Table. First, self-efficacy is discussed for each of the three samples. For this thesis, self-efficacy is concerned with an individual's confidence in their abilities to perform waste minimising behaviours. Bandura (1997) suggested that for quantitative studies, people's confidence in their ability to perform a particular behaviour (self-efficacy) should be measured according to the magnitude, strength, and generality of their self-efficacy beliefs. In this qualitative study, 'persistence' seemed to be a reliable indicator of Bandura's (1997) concept of the *strength* of self-efficacy. This is discussed in more detail later.

Table 4.1:

Efficacy levels for each of the three groups

			Self- Efficacy	Solution Efficacy	Collective Efficacy (Earth Carers - defined group)	Collective- outcome Efficacy (Earth Carers - defined group)	Collective Efficacy (community)	Collective- outcome Efficacy (community)
Most Active	Defined Group	Group Activists	High	High	High	High	Low	High
Active	Undefined Group	Community Activists	Mixed	Mixed	NA	NA	Low	High
Inactive	Undefined Group	Community Non- Activists	Low	Low	NA	NA	Low	Low

4.4.1 Self-efficacy: Group Activists

Both male and female Group Activists expressed a high level of confidence in their abilities to reduce waste (self-efficacy). This can be seen through their willingness to persist when performing waste minimising behaviours. For some interviewees persistence was expressed through a willingness to overcome problems or obstacles. One woman mentioned that when her son threw something into the wrong recycling bin she would sort through the rubbish herself and place recyclables in their correct bins. Another woman mentioned that recycling was easy because all she had to do was rinse out empty items and place them in the correct bins. When asked about the amount of water she was wasting by rinsing these items, she replied “oh certainly not, they’re the last items to be rinsed in the wash-up water.” One man also mentioned that he would take things home to put into his recycling bin because his workplace did not provide one. Another man said that the exchange students that stayed with him were reluctant to recycle; however he was adamant that “as long as they were staying under [his] roof then they would [recycle].”

The following stories illustrate a willingness to persist despite difficulties experienced by interviewees:

...I had collected a box of broken glass which took about two years. I rang up the recycling people and told them I had a box of broken glass. So I took it down there and couldn't quite remember where it was and just about got run off the road by this huge semi trailer. I finally got in there, boiling hot day. I went over to one [container] and it looked like they were all coded by the colour and size of glass. Very technical. Then, there was a guy who came over on a forklift...and he said that's actually rubbish to us and we can't really use that. So, you know when you say it's easy you have to know where to draw the line. I still collect the glass though. (F, GA)

Even in my area the rules are atrocious and I can see why people just think it's too inconvenient. I've got to wrap the newspapers in neat little bundles and tie it in string. It's the most archaic system. So I do this thinking why am I bothering because surely nobody else wants to be doing

it. I'm sure the councils just don't give a damn either or they would come up with something better. I bet when they come to my door they think oh bugger this idiot is still doing it. (M, GA)

Persistence was also seen through expressions of frustration. Although, 'frustration' is not directly related to self-efficacy, interviewees seemed to express a greater motivation to persist when faced with frustrating circumstances. Since persistence was used to identify self-efficacy in this study, interviewee frustrations were seen as an important influence on the strength of self-efficacy perceptions. In fact the word frustrated was used fourteen times by interviewees. Generally, frustrations were directed towards other members of society, councils, businesses, and government bodies. Although frustrations were expressed when interviewees were asked about their ability to perform the behaviours, they were able to channel this through their willingness to persist. For example one woman said:

I feel that my ability is hindered constantly by the shops and the systems that are in place around me. Like convenience stores are so convenient for people that waste a lot but they're such hard work for people that want to change attitudes and behaviours. I find it very very frustrating that I who am prepared to take the time and the cost to reduce waste have to go to all this extra effort. Whereas all the people that are being so wasteful they've got everything at the end of their fingers. (F, GA)

That's the problem with changing people's attitudes. People need to accept responsibility. Yes, I mean it is an uphill battle but I think we really do have to soldier on to try and change people's attitudes. (F, GA)

I have huge frustration with our efforts trying to influence people. It isn't getting the recognition at the governmental level. (F, GA)

Especially with regards to businesses. I think they get away with a lot in terms of not paying the true cost of their activities and the long-term effect on so many people in society. We'll teach them. (F, GA)

In these statements above, interviewees referred to frustrations about their abilities to persuade others to reduce waste rather than their own abilities to reduce waste. This might be because Group Activists belong to the Earth Carer's program which involves educating community members about waste reduction.

Interviewees used emotive language when expressing their ability to perform waste minimising behaviours. For some this was a matter of conscience or conviction illustrated in statements such as "I'd feel really bad not to [recycle, reduce, reuse]," "I just couldn't throw it away," "I feel extremely uncomfortable walking away from it," "I hate the idea of wasting things," "It just doesn't feel right," and "I'd feel ashamed."

A high level of self-efficacy was observed when Group Activists expressed a willingness to persist despite apparent frustrations. Their conscience also strengthened their sense of self-efficacy. There did not appear to be any differences between male and female perceptions of self-efficacy for Group Activists. On Table 4.1 Self Efficacy for Group Activists is shown as 'High'.

4.4.2 Self-efficacy: Community Activists

Community Activists expressed a willingness to persist in the face of difficult or frustrating circumstances. For example, one woman mentioned that if she was unable to recycle she would "...have to protest. Like when we're in Margaret River there was no recycling bins so I just bought it all back with me. My kids thought I was crazy." Another woman discussed her frustrations by saying "if someone doesn't want to do it [recycle, reuse] then it's a natural instinct to say 'no no don't throw that'. So it wouldn't stop me doing it. It would probably be annoying for them." For one woman a lack of support from others did not affect her willingness to persist:

I live with two other people my age. They are shocking. They will buy anything disposable. They just don't think about this stuff at all. I guess I have my own system in place and we have agreed to keep the recycling bins outside. So even though they don't care we still have agreed to all do it. I think even I'm increasing their awareness a bit. Sometimes we talk about what they've bought and I'll say 'that can go out in the recycling bin.' So I'll still do it even though they won't. (F, CA)

However other Community Activists expressed a lower level of persistence when faced with certain obstacles. One woman mentioned that the lack of infrastructure might affect her level of persistence in performing waste minimising activities:

I think it just takes a small little bit of infrastructure in your own house to make it easy. I know in other houses I lived in I didn't recycle that much. But I always thought I would like to and sometimes I would wash out stuff and put it in the bags but I didn't do it all the time. But now I live in a house where we have an organic veggie bin, plastics' bin and then we have our recycling bin. It makes it easy with that little bit of infrastructure but if I move out I'm not sure how confident I would be. (F, CA)

Cost was also a concern for some Community Activists whereby their willingness to persist was reduced when an item was cheap. Both male and female interviewees mentioned that if certain products were cheaper they would forgo the environmental benefits of other products. For example:

If they have a really super special at the supermarket then, well, I'm sorry, I will buy the one in the plastic container because I got something for two dollars. (F, CA)

If I do my shopping and if I look in the meat department and it's cheap then I might buy the one that is pre-packaged. So it's hard when something is cheaper. (M, CA)

The level of persistence for one man was somewhat unstable, “I do it at home but then sometimes I don’t. You’ve really got to make an effort. So it’s easy but at the same time it’s not.”

Although no women in this group expressed their emotions about performing waste minimising behaviours, one man noted that he felt “a lot better” by placing his vegetables in a box instead of getting them individually wrapped. Another man mentioned that he would feel like he was “letting himself down” if he did not act to reduce waste.

Inconsistent perceptions of self-efficacy ranging from high to low were evident for both men and women. There were no apparent differences between male and female perceptions of self-efficacy for Community Activists. On Table 4.1 Self-Efficacy for Community Activists is shown as ‘Mixed’.

4.4.3 Self-efficacy: Community Non-activists

Community Non-activists expressed lower levels of self-efficacy than Group and Community Activists. When they were asked about their ability to perform waste minimising behaviours, female interviewees felt that it was too inconvenient. Statements such as “I don’t bother because I’m too busy,” “I don’t have the time or the patience,” “It’s so much organizing”, illustrate that they feel their abilities are affected by the inconvenience associated with action. Cost was also a concern for some female interviewees, for example these woman said:

I suppose you still can do it but it takes a lot more money and time. So I think you can do it but you have to spend more money and more effort so that makes it too hard. (F, CNA)

I think when you are under a lot of pressure with time and when things become too expensive it’s unrealistic. (F, CNA)

Interviewees also felt that the lack of environmentally friendly products limited their ability to choose the 'right' product. For example these women said:

Couldn't companies try to minimise stuff because when you buy things there is not much choice? A lot of things there aren't alternatives for and you just buy them. (F, CNA)

I think that a lot of people would be prepared to abide by the three 'r's' [recycle, reduce, reuse) if the people who provide the consumables also did their bit. They need to provide more biodegradable, unbleached, less packaged goods. If we had that choice then it would be convenient. (F, CNA)

On the other hand, some interviewees felt that the numerous products available restricted their ability to choose the 'right' product. For example, one woman said, "Look at all the products out there. Sometimes I notice things like ridiculous packaging, but I want it and I buy it." One man had the same idea by saying that "we are an affluent country. If things are there you either want them or need them so you get them."

Confusion was also seen to affect self-efficacy. Not knowing what to put in the recycling bins affected the women's perception of ability. One woman said, "I suppose when you don't know what to do it's difficult. Like with batteries, I'll just throw them in the bin because I don't know what else to do." The following dialogue between interviewees illustrates this:

Interviewee 1: I find it difficult with plastics. We are only allowed to recycle numbers 1, 2, and something else. (F, CNA)

Interviewee 2: I think it's 1, 2, 5 and 6. (F, CNA)

Interviewee 3: No, I think it's 1, 2 and 3, isn't it? (F, CNA)

Interviewee 4: I've never even heard of that. (F, CNA)

Interviewee 5: That's a pain. I think I should be able to recycle all of them and throw them all in the recycle bin. There should be some way that the manufacturers have to make stuff that is recyclable. Why is one plastic recyclable and not the other? It's just a pain and sometimes I just put it in [the bin] to be honest. (F, CNA)

Men, on the other hand, felt that inadequate infrastructure and the lack of a unified system hampered their ability. They felt that generally "it would be easy to recycle with a good system in place and hard if there isn't." They felt that this lack of a standard way to recycle increased confusion. For example, one man said "I don't recycle much at all and I don't really find it easy. I suppose because I just don't know what there is available in my council." Another man said "I don't think it would be too hard if there was a straightforward way of doing it. There has to be infrastructure there that is standard. They need to have one system for all the councils."

There appeared to be an interaction between knowledge and self-efficacy for both male and female interviewees. A lack of knowledge about waste minimising practices caused confusion for female interviewees, which is related to their low level of self-efficacy. For men, not knowing what infrastructure is in place caused confusion, which is related to their low level of self-efficacy. On Table 4.1 Self-Efficacy for Community Non-Activists is shown as 'Low'.

4.5 SOLUTION EFFICACY

The following sections identify the dimensions of solution efficacy for the three samples. For this thesis, solution efficacy is concerned with the individual's perceptions of the effectiveness of their actions to reduce waste. Specifically, this was identified by determining if interviewees felt that their actions could help to reduce the waste problem.

4.5.1 Solution Efficacy: Group Activists

Female Groups Activists were positive about the effectiveness of their actions. Some interviewees felt they were contributing to the overall reduction of waste while others felt that their actions to avoid waste were reducing the impact on the environment. These positive views can be seen in the following statements:

I feel like every little bit counts. I think it is a battle. But if I don't throw the right cans in my recycling bin then, you know, if everybody does the right thing it does make a big difference. You know a whole lot of single drops will eventually fill up a bucket. (F, GA)

I'd like to think that my effort is reducing waste. Of course it is just one drop in a bucket. My one-drop still limits the waste produced though. Imagine, my one drop and your one drop and their one drop... (F, GA)

Some women also mentioned that their efforts were important for future and current generations. One woman said, "I look at my influence on my children as well. So in later years we really will be making a difference." Another woman stated:

"I feel like I'm making a small difference. Hopefully, while I'm doing that I'm influencing other people in the process. Slowly, I know it's very hard initially but I can see the difference." (F, GA)

Interviewees who expressed frustrations when discussing their level of self-efficacy were also frustrated when discussing solution efficacy. For example the phrase “I think it is a battle” as seen in one of the statements above implies a feeling of frustration associated with reducing waste. One other woman was much more overt in her discussion of frustration:

I get frustrated particularly with the lack of recycling in commercial sites. Like we try hard in Cottesloe and with our neighbours who are not Earth Carers. But behind restaurants everything goes out into the rubbish. They've only got one big landfill bin. So you think my thing is so small but at the same time important. (F, GA)

Male interviewees in this group were also positive about the effectiveness of their own actions. On Table 4.1 Solution Efficacy for Group Activists is shown as ‘High’. However, they also expressed a high level of solution efficacy when the actions of other community members were considered. Females tended to feel like their own actions were making some difference while men felt that their actions were worthwhile when viewed in relation to other efforts. That is, the comments they made about the effectiveness of their own actions were positive only because they could see the value of a collective effort. For example, one man was discussing how his work colleagues kept throwing plastic bottles into the landfill bin and said, “Of course I can’t do much on my own, it’s not like I can fit 20 plastic bottles in my own recycling bin but if everyone was doing it...so I try.” Another man used an analogy of a war march to describe the significance of others in reducing waste:

A war march is full of individuals saying ‘no war’. If they hadn’t got together, it was only because they got together that they gave that statement of no war. We’re all individuals; we compost, recycle, or whatever. As individuals, no, there is not much difference made but if there are enough of us out there doing it, then it’s a big difference made. The more individuals do it, the more we tell others how to do it and show them and encourage them. Then there will be more people and it will make a bigger difference. So my bit has to add up. (M, GA)

Overall, both male and female Group Activists expressed a high level of solution efficacy.

4.5.2 Solution Efficacy: Community Activists

Some Community Activists also expressed positive perceptions about the effectiveness of their actions to reduce waste, illustrated by comments such as “every little bit counts”, “I think it does make a difference or I wouldn’t do it”. Some other comments made by women in this group were similar to comments made by Group Activists about influencing current and future generations. For example:

I’m totally confident with what I do. That’s one person and that’s moving in the right direction. I’ve learned stuff off other people and I think I’ve taught my flat mates so it does make a difference. (F, CA)

I think anything positive has got to make a difference even if it is very small. Your little bit does tend to influence someone. (F, CA)

Like my kids at school, I mean they are doing wonderful things. And that’s gotta make a difference especially for the future. (F, CA)

However, some interviewees also questioned their effectiveness by referring to inactive members of the community. In this case a low level of solution efficacy is related to the lack of a collective effort. One woman stated, “You just feel like you are one in this sea of people who is doing something and nobody else really cares.” For one man, although he felt that his effort was not worthwhile unless others were also active, his was a moralistic choice:

It’s such a small minority. How do you know everyone is doing it [recycling, reducing, reusing] just because you are? You might get some small satisfaction out of it but is it really doing anything? Do you see it?

If everybody's doing it then of course it's worthwhile but just me doing it I don't feel like I'm doing a great deal. But I do it because it's right. (M, CA)

Others questioned the effectiveness of the methods used to reduce waste. One woman said that "waste stays around" and that "we never really get rid of anything." Some men thought that recycling did not solve waste problems as seen in the following comments:

Look at what's here (points to plastic bottles). Is that going to be recycled in a useful way? Even this chipboard table - what will happen to that? The plastic bottles may get recycled but its been made from a non-sustainable resource - oil. The plastic bottles get thrown out and yes it might get recycled but it doesn't stop the use of more of the same things getting produced. (M, CA)

I don't think all recycling is necessarily good either. I mean we have this 'holy grail' that we should be recycling. I think it's a bit of a guilt trip in some ways because then we can pretend that we are doing something for the environment if we recycle. Often the mechanical process of recycling is more expensive in an ecological sense than if the original waste wasn't recycled. (M, CA)

Overall, both men and women expressed inconsistent perceptions about the effectiveness of their actions to reduce waste. That is, some people expressed negative views while others expressed positive ones. However, women tended to express the value of their influence on current and future generations as an important aspect of solution efficacy. On Table 4.1 Solution Efficacy for Community Activists is shown as 'Mixed'.

4.5.3 Solution Efficacy: Community Non-Activists

Community Non-Activists tended to express a feeling of hopelessness, or being overwhelmed by the magnitude of the problem, when discussing the effectiveness of

actions to reduce waste. For example, one woman mentioned that she would feel “pretty hopeless if she was recycling while no-one else seemed to care.” Another woman said, “It’s disheartening. I think, why bother if no-one else will.” Again, these statements take into account the inactive members of the community. One man also said “before anything has really been done there’s so much waste produced by people.” The following statements made by men also illustrate the theme of hopelessness and the feeling of being overwhelmed:

Each week you do your shopping and you buy all this stuff and then you try to put all that stuff in your recycle bin. But then the next week you do it all over again. It’s never ending. I mean the difference will be when we don’t actually buy all this stuff and that’s not going to happen, is it? (M, CNA)

I agree, I mean you can recycle but we still buy what we want and we are recycling so much that I suppose you have to wonder what’s the use. It’s like this never ending mountain of recycling. (M, CNA)

Both male and female Community Non-Activists were sceptical about the actual process of recycling. Some interviewees questioned if councils did actually recycle what they collected from households. One woman said that the “councils and waste disposal companies were a concern because you think that you are recycling but then you find out that they aren’t doing it. What checks are in place for this?” Another woman said “I always think that even if I do it then the people who are responsible for it won’t. It’s always in the back of my mind if they are actually going to carry through with it.” One of the male interviewees shared what he described as a very disturbing story: “Apparently, one council gave everyone a bin to see if anybody would be interested in recycling and then they just chucked it on the tip.”

Some female interviewees also felt that the costs and benefits associated with performing waste minimising activities were unequally distributed. For example:

The benefits are obviously for all of us but that only counts if everyone is doing it. And everyone isn't doing it. You bear the negatives while others benefit. (F, CNA)

Why should I go out of my way when I know nobody else is? Everyone else is getting the benefit from my hard work. (F, CNA)

Unless there is a lot of benefit to yourself then why bother? (F, CNA)

Overall, both male and female interviewees expressed a low level of solution efficacy. However, women tended to suggest that the benefits of reducing waste were outweighed by the costs incurred by individuals. They saw an injustice when others benefited from their efforts. On Table 4.1 Solution Efficacy for Community Non-Activists is shown as 'Low'.

The following sections identify the dimensions of collective efficacy for the three samples. First, the way in which the concept of collective efficacy has been organised in this research is explained.

4.6 COLLECTIVE EFFICACY

Group Activists have two different collective units in which to perceive their collective and collective-outcome efficacy. Since they are members of a defined group, namely Earth Carers, they have a sense of collective efficacy in relation to that specific group. However, the members of this defined group also form part of a much larger group, the wider community. Therefore they also have a sense of collective and collective-outcome efficacy as community members. Since the Community Activists and Community Non-Activists are not part of a defined group, only one collective unit is relevant for them. Therefore their perception of collective efficacy is only concerned with the wider community. For ease of understanding, when referring to collective

efficacy or collective-outcome efficacy, the word 'group' has been placed in brackets. Similarly when referring to collective or collective-outcome efficacy in relation to the community, the word 'community' has been placed in brackets. (For ease of reading throughout this thesis, these definitions can be found in a fold-out insert on the back cover.) First, collective and collective-outcome efficacy (group) is presented. Collective and collective-outcome efficacy (community) is then outlined in Section 4.8.

4.7 COLLECTIVE EFFICACY (GROUP)

4.7.1 Collective Efficacy of the Defined Group: Group Activists

Group Activists expressed a high level of confidence in the ability of their group - Earth Carers - to perform waste minimising behaviours (collective efficacy - group).

Female Group Activists felt that the group's ability to perform waste minimising behaviours was characterized by the power, creativity, and courage that the group possesses as a whole. These statements demonstrate a high level of collective efficacy through those group qualities.

I think that our group has had some good influences in the past and some of the best ideas have come from some of the oldest in our group. And I'm not the oldest let me tell you. We have had some good ideas and implemented them quite well. I think as a cohesive group we're good. (F, GA)

If we want to do something we have a lot more power to be able to do it. (F, GA)

As a group you try crazy ideas, which you perhaps wouldn't if you were on your own. So we have more courage I suppose. (F, GA)

I think the mere fact that we exist and that we meet and that we continue sends them (the council) quite a clear message. It might reaffirm back to them that people are serious about these issues and that it's time to get on with it. (F, GA)

Some female interviewees also identified with the nurturing role of the group. For example, one woman told of her successes with convincing one of her neighbours to recycle and compost. The group immediately applauded her and collectively announced “well done, good on you, fantastic.” The following dialogue illustrates how one member can nurture another when experiencing particular frustrations:

Interviewee 1: I openly promote the fact that I put a hell of a lot of green waste into my bin. And the reason why is I've bought five white bags that they have for green waste. I've got the three biggest gum trees on my block and I feel that I've been penalized for keeping native plants in my garden because I have such an enormous volume of leaf litter. I put that into landfill because they only collect that three times a year and otherwise I have to pay \$20. Now I don't mind taking five or six loads down a year. But I get so fed up. (F, GA)

Interviewee 2 (response): We hear you but look just hang in there though because we are trying to come up with some way to get rid of the green waste from all of our councils. Green waste is the biggest problem of the lot and we have to hang in there for that reason. (F, GA)

This nurturing role is also apparent when Group Activists viewed Earth Carers as a way to transform frustrations into something constructive. One woman mentioned, “I think one of the nice things about the group is that if you are frustrated, which tends to happen a lot, it's nice to bounce that energy and turn it into something positive. I think that's one of the really good things about having a group like Earth Carers.”

Some women experienced the nurturing role of the group by referring to their own shortcomings. “Everyone brings different strengths so it's really good in that way.

So I know that there are things that I just don't know but other people do know. So as a unit we know a lot." Another woman said:

I think there is a bit of a safety in numbers aspect to it as well. I know some of my family thinks I'm really weird because I do these environmental things. But because I know that other people do it as well I don't feel quite as weird. It's like I'm supported. (F, GA)

The male members of Earth Carers were more concerned with "being part of a cutting edge community program" than the cohesion of the group. This is particularly obvious when compared to women who were conscious of their actions because of other group members. One lady mentioned she would rather shove a plastic bag over her head than be caught using one at a shopping centre! Another woman supported this statement by saying "we are so conscious of each other. If you don't have a cloth bag with you in the supermarket you just dread being seen." On the other hand, one man said, "we're not going around like 'Big Brother' and checking up on each other." Another man stated:

It wouldn't necessarily matter if one of us wasn't [reducing waste]. I mean I'm an environmental officer and if I manage to convince people to buy a solar hot water system it doesn't matter what I do because they're doing it for me. If they're part of the group and they are willing to teach other people then that's all that matters. The value of them teaching other people is actually more than if they do it themselves or not. (M, GA)

Overall, both male and female Group Activists expressed a high sense of collective efficacy (group). On Table 4.1 Collective Efficacy (defined group) for Group Activists is shown as 'High'. However, the quote cited above implies that the men valued their defined group more as a means to an end; that is, to educate others about waste reduction. On the other hand, Female Group Activists seemed to value the sense of connectedness with each other.

4.7.2 Collective-outcome Efficacy of the Defined Group: Group Activists

Group Activists expressed a high degree of confidence that group actions would result in waste reduction (collective-outcome efficacy, group).

Specifically, as a group both male and female Group Activists felt they were “more confident” that their actions made a difference. Some members mentioned that their success as a group proved their effectiveness. For example one woman said, “Our confidence comes from the things that we have done and the feedback that we have had.” Another woman said that their efforts “empower people and give them the knowledge to make decisions for themselves.” One man talked about the effectiveness of their group by saying: “it works you know...you don’t feel so useless and you don’t think ‘I can’t make a difference’ because everyone else is doing it through us.”

Some interviewees felt their actions were making a difference because the things they were doing as a group could not be achieved individually. The statements below illustrate this:

There is an old people’s home where they have all the recycling bins for people to recycle and all the elderly residents wash out their cartons. But then they (a private contractor) just puts them all into landfill. This is something that Earth Carers is trying to change. (F, GA)

The plastic bags have got a lot of coverage at the moment. I think people do think that plastic bags aren’t too good. I understand that the state government is saying at the moment we don’t want to charge for plastic bags because they think it won’t be embraced. We’d like to try other strategies. We’d like to go into the supermarkets and ask them to try other ways to influence the public to move away from the bags. I think we might approach our main supermarkets and say ‘what are you doing, when are you going to do it and how can we help you?’ We may be able to make our own changes here. (F, GA)

Some of the male Group Activists were generally optimistic about apparent anomalies to do with the way waste is managed. For example, the idea of a ‘one-bin system,’ whereby householders simply throw all of their rubbish into one bin and it is then sorted by councils, would mean that the efforts to educate people about recycling would be unnecessary. Some members overcame this by seeing a “bigger picture” as illustrated in the following statement:

Sometimes I used to feel like what’s the point because we’re all going to get a one-bin system soon. But through Earth Carers it is still really valuable because of the reduce aspect. It’s more important that we’re here because if it’s a one-bin system then it would be much easier for people to think it doesn’t matter how much I used because it all goes into that bin and it all gets recycled. But they could actually use twice as much. (M, GA)

Overall, both male and female Group Activists expressed a high level of collective-outcome efficacy (group) and there were no apparent differences between their views. On Table 4.1 Collective-outcome Efficacy (defined group) for Group Activists is shown as ‘High’.

The following sections identify all interviewee perceptions about the abilities of community members to perform waste minimising activities (collective efficacy - community). This is then followed by the perceptions that interviewees had about the effectiveness of the community in reducing waste (collective-outcome efficacy - community).

4.8 COLLECTIVE EFFICACY (COMMUNITY)

4.8.1 Collective Efficacy of the Community: Group Activists

Group Activists tended to have a negative or cynical view of the collective. In their view the collective was made up of government bodies, the general community, and businesses. They seemed to doubt that these members of the collective were doing anything to reduce the waste problem. Although they thought that everyone was capable (with the exception of the elderly) they also assumed that members of the collective were not acting because of the characteristics they ascribed to them. For example, community members were generally seen as “selfish” or “lazy,” while government bodies were not supportive and businesses did not take responsibility for their actions. The following comments illustrate these negative views and suggest that Group Activists have a low sense of collective efficacy (community):

We don't expect people to take part in it either. It's a bit cynical but you think wow they're not going to do it. We live in a very greedy society. (M, GA)

It's a throw-away society isn't it? (F, GA)

The problem is that the Australian government are not taking people's issues seriously. (F, GA)

Sometimes its difficult to tell when businesses are running the country or the government is. Governmental decisions are very influenced by the dollar. (F, GA)

Eighty percent of people are phlegmatic and too much in a hurry and couldn't be bothered. (M, GA)

Not surprisingly Group Activists held negative views about consumerism and advancement, which can also be categorised as part of the collective community. Some

interviewees mentioned that “they were fighting the easy convenience and the fast paced lifestyle that we’re moving into,” or that “people struggle against the advertising.” Female Group Activists also viewed members of society as having an obsession with hygiene. One woman recounted an incident at a local school by saying:

I think people are getting so hung up on hygiene issues. I’ve been saving all my toilet rolls for kindy [pre-school]. I said to one of the Mums would you mind giving these to the teacher because I had to go. And she said....oooooh I don’t know if I want my kids playing with toilet rolls. I said I don’t wipe my arse on the toilet roll. I got a bit angry! (F, GA)

Overall, Group Activists expressed a low level of collective efficacy (community) and there were no apparent differences between male and female views. On Table 4.1 Collective Efficacy (community) for Group Activists is shown as ‘Low’.

4.8.2 Collective Efficacy of the Community: Community Activists

Female Community Activists were identified as having a low sense of collective efficacy (community). They only mentioned the *general* community when discussing the collective and assumed that everyone had the basic ability to perform waste minimising behaviours. However they expressed negative views of these people by suggesting that “people need to be forced” to perform waste minimising behaviours. Other comments such as “humans are consumans,” “people think they are too important,” “people just can’t be bothered,” and “the environment is affected by selfishness and greed,” illustrate this negative view.

Male Community Activists felt that the abilities of others were dependent on the provision of appropriate infrastructure. One man said, “everyone has the ability but we don’t all have the same facility.” Another man thought, “they don’t all have the same opportunity.” In this way, although men expressed negative views of the collective they were more positive about the ability of others when suitable infrastructure was provided.

Men were also less inclined than the women to suggest that people were not doing their bit to reduce waste. When asked if they thought other members of the community were recycling, reducing or reusing some said “probably not” while others said “we just don’t know.” One man said, “We can’t allow our actions to be affected by not knowing or otherwise.”

Again, interviewees expressed anti-consumerism through statements like “it’s annoying how ads tell us what we need,” and “we need to have the old ways back, like the milk man.” Feelings about hygiene seemed to extend from this in much the same way that Group Activists expressed it. Some interviewees felt that unnecessary concerns about cleanliness had negative implications for the natural environment. For example:

It’s annoying how ads tell us how clean we have to be. We have to have everything and we have to buy hospital grade bleaches to clean every little bit of your house. What happens if the baby falls over and eats a bit of dirt? Oh goodness something awful will happen to it. That just makes me so sad because it’s really not the case at all. People are so obsessed with being clean. We are worrying about the wrong things. Stop worrying about dirt. Start worrying about our air. (F, CA)

It can also be habits and personal values. Like with cleaning products. I know a lot of people who are fanatical about cleanliness and it’s almost sickening. They want everything clean. Sometimes a little bit of dirt around is ok; you don’t have to clean with such harsh products. Like bicarbonate soda is really good - you can even brush your teeth with it. (M, CA)

Overall, Community Activists had a low sense of collective efficacy (community). Both male and female interviewees held a negative view of members of the general community. However, men voiced the opinion that infrastructure affected the abilities of others. On Table 4.1 Collective Efficacy (community) for Community Activists is shown as ‘Low’.

4.8.3 Collective Efficacy of the Community: Community Non-activists

A low sense of collective efficacy (community) was also evident for Community Non-activists. Interviewees viewed members of the general community as part of the collective in a negative way. They felt that “people just had an amazing capacity to put their head in the sand,” or that “you could educate [people] until you are blue in the face but some people just won’t take notice.” When Community Non-activists were asked if they thought other people were performing waste minimising behaviours they felt that “people had more important things to do” and that “society was too far gone to be worrying about it now.”

When asked if other members of the community were capable of performing waste minimising behaviours, some women exempted busy mums as being capable. One woman said “No! It’s too much work for them. If disposable nappies are made for convenience, why not use it.” Men, on the other hand thought that busy mums should train their children to recycle for them!

Male Community Non-activists also felt that people’s actions were dependent on the council’s provision of a recycling program. Some men felt that “in the areas that don’t have a [recycling] system then I don’t think many of them would recycle because it’s too hard.” Another man said, “If the councils are doing it [recycling] then the people will. But if they don’t, then they won’t. Their ability is there but it’s just not activated.”

Overall, Community Activists expressed a low sense of collective efficacy (community). However, although both male and female interviewees had a negative view of the collective, female interviewees thought that mothers were not capable of reducing waste. Men also differed from women in that they thought the ability of people

would be improved if the appropriate infrastructure was provided. On Table 4.1 Collective Efficacy (community) for Community Non-Activists is shown as 'Low'.

4.8.4 Collective-outcome Efficacy of the Community: Group Activists

Group Activists thought that the collective actions of the community would certainly reduce the waste problem (collective-outcome efficacy, community). This was so obvious to them that their comments were blunt and to the point. Statements such as “absolutely,” “of course,” “yes, very confident.” One man mentioned that he would be “100% sure that if everyone or even every 5th household was doing these things then, yes, we could make a difference.”

One woman also mentioned that if community members were performing waste minimising behaviours there would be a “greater voice” to influence “the things that ought to be corrected like the manufacturing of non-sustainable resources.”

The views of Group Activists did not appear to differ for men and women in this section. On Table 4.1 Collective-outcome Efficacy (community) for Group Activists is shown as 'High'.

4.8.5 Collective-outcome Efficacy of the Community: Community Activists

Female Community Activists were also confident that a collective effort would help to reduce waste (collective-outcome efficacy, community). The following statements illustrate a high level of collective-outcome efficacy:

I didn't mean to be so negative on my own but now that you say this then now I can make a difference... It definitely would help if I knew more people were like me and knew what to do. (F, CA)

I think it's always worthwhile but if everyone does it then it does make a difference. (F, CA)

The idea of having "a greater voice" that was raised by one Group Activist is also echoed in the following statement:

It's much easier if everyone does it because it starts to speak to industry and big corporations. In the same way that health food hit the market - just because people wanted it well now there's a big section. So, if we are all doing it then maybe they'll take notice. It's about getting people to make demands on them. (F, CA)

Community Activists also talked about their desire to feel more connected to what was being done when discussing the effectiveness of their actions. For example, some women said:

So maybe if Subiaco had a link with Narrogin and we supported local farms with our waste. A newsletter could be sent to residents with the picture of the farmer showing what he had done with all this free compost. You could then think wow that was from our kitchen. It would be all integrated. You have that sense of connectiveness. (F, CA)

That's a great idea. We think of urban and rural and regional areas so distinctly. I think that it would be nice to think of parts of a city as a small community instead of feeling like a huge numberless spaceless society. We need to feel like we are supporting something. (F, CA)

Another woman expressed the idea of ‘seeing is believing.’ She thought that seeing what was being done on a large scale would also enhance the feeling that collective actions were worthwhile:

I do feel comfortable if everyone works together. If we could just see our efforts on a larger scale then it would keep everyone working together. Instead of not really knowing what we are working towards. Even if you have one street saying we’ve saved this much waste for this particular month. (F, CA)

The concerns that male community activists raised when discussing the effectiveness of their own individual actions (solution efficacy) were overcome when they discussed the effectiveness of collective action. For example, some men said:

Now if everyone did it then that would solve those problems we talked about before. I mean if everyone was actively recycling and reducing then that would speak to the people that are still manufacturing all those non-sustainable resources. (M, CA)

Yes, when everyone is doing it then all the problems that we might experience today with recycling would be overcome through pressure. Like we said, recycling isn’t always good because it produces emissions. But if everyone was interested in the same thing then we would come up with ways to solve these problems. Without everyone doing it, those sorts of issues will never get dealt with. (M, CA)

Overall, Community Activist felt that collective actions would be effective in solving the waste problem (collective-outcome efficacy, community). Both men and women appeared to have consistent views in this section. On Table 4.1 Collective-outcome Efficacy (community) for Community Activists is shown as ‘High’.

4.8.6 Collective-outcome Efficacy of the Community: Community Non-Activists

Community Non-Activists felt that even if everyone performed waste-minimising behaviours the problem would still exist. For some interviewees the problem was ingrained in society. For example, interviewees said:

What's the point? Even if everyone does, it's still just a drop in the bucket, isn't it? I mean how can we change the whole world? (M, CNA)

Even if you have 1.3 million people helping to reduce waste they still won't change what they buy, so how could it work? The problem is too big. (M, CNA)

I mean the difference will be when we don't actually buy all this stuff and that's not going to happen, is it? Even if we all do it, we can't change that much. (M, CNA)

For other interviewees there was no real or total solution that could solve the problem despite a collective effort:

Well, like we said, if we saved our milk bottles that helps to stop the production of them but then you have the truck driving around producing air pollution. You can't win really. (M, CNA)

I don't see the point. Even if everyone does their best the problem will always be there. We haven't solved those sorts of issues. (F, CNA).

I think it's totally hopeless. I mean you can recycle but what about the pollution. Are you going to make everyone stop driving a car? You just can't stop that. They tell me to recycle and reduce but what hypocrisy. (F, CNA)

My mother suffers from incontinence. You multiply those sorts of products needed by our aging population and you wouldn't believe how much it produces. So are they being buried, burned? So that is worrying but I also understand why they are around. How do you deal with that sort of thing? You can't. Some things are just more important. (F, CNA)

In contrast to Group and Community Activists, Community Non-activists had a low sense of collective-outcome efficacy. There did not appear to be any gender differences for Community Non-Activists in this section. On Table 4.1 Collective-outcome Efficacy (community) for Community Non-Activists is shown as 'Low'.

4.9 SUMMARY OF RESULTS

In summary, there were four main findings in this study. The first main finding was that people who belonged to the defined environmental group (Group Activists) held consistently stronger self- and solution efficacy beliefs than those who did not belong to a defined group (Community Activists and Community Non-activists). Specifically, Group Activists expressed more confidence in their own abilities (self-efficacy), and believed that their actions would be effective in reducing waste (solution efficacy). This suggests that group belonging is related to self- and solution efficacy in this study.

The second main finding in this study was that self- and solution efficacy beliefs also related to levels of environmental activity. Although the two active groups (Group Activists and Community Activists) were initially recruited as being equally active in waste management practices, it became apparent from the discussions that Group Activists were in fact more consistently and comprehensively active in waste minimising behaviours than Community Activists. That is, the people who belonged to the defined group (Group Activists) were most active and held consistently high efficacy beliefs. The active people who did not belong to a defined group (Community Activists) were slightly less active and held mixed efficacy beliefs. The people who were inactive

(Community Non-activists) held low efficacy beliefs. This suggests that level of activity is related to self- and solution efficacy in this study.

The third main finding in this study was that the people who belonged to the defined environmental group (Group Activists) were able to express a strong sense of confidence in their group (Earth Carers) (collective efficacy - group). At the same time, all three groups (Community Activists and Community Non-Activists) expressed a low level of confidence in their undefined group (the Community) (collective efficacy - community). This suggests that belonging to a small defined group can create an illusion of greater collective efficacy. Group Activists were also more active than the other two groups which suggests that action may also be related to collective efficacy.

The fourth main finding is considered to be the most pertinent in this study because it provides the clearest insight into the behavioural gap. The people who were environmentally active (Group Activists and Community Activists) expressed strong confidence that waste would be reduced if everyone performed waste minimising behaviours (collective-outcome efficacy - community). However, the people who were not active in waste management (Community Non-activists) thought that the waste problem would not be solved even if all members of the community performed the desired behaviours (collective-outcome efficacy - community). This distinct difference between those who were active in waste management and those who were not suggests that collective-outcome efficacy (community) might help to explain the gap that exists between pro-environmental attitudes and pro-environmental behaviour.

These four main findings and additional observations are discussed with reference to relevant literature in the next chapter.

CHAPTER 5

DISCUSSION

Environmental researchers have identified that people who express concern about the environment do not necessarily perform environmentally friendly behaviours (e.g. Scott and Willits, 1994). In the literature, this discrepancy between pro-environmental attitudes and pro-environmental behaviours has been referred to as the behavioural gap. In this study, people who expressed pro-environmental concerns but did not perform waste minimising behaviours highlight the behavioural gap (Community Non-activists). The purpose of this research was to identify if four efficacy perceptions: 1) self-efficacy, 2) solution efficacy, 3) collective efficacy and 4) collective-outcome efficacy, might help to understand this behavioural gap.

Section 3.2 discussed how initially it was thought that only two samples were needed to identify differences in efficacy perceptions between people who were active in waste management practices and those who were not. However, because the researcher recruited the active individuals from the environmental organisation - Earth Carers - accessing this convenience sample also meant that individuals might hold different beliefs about efficacy and environmental behaviour because they belong to a defined group. In order to account for this, another group of active individuals who did not belong to a defined group was included. For this thesis, Group activists constitute the active/defined group, Community Activists constitute the active/undefined group, and Community Non-activists constitute the inactive/undefined group.

Each of the efficacy dimensions is discussed in relation to the four main findings, the relevant literature, and possible implications for social marketing campaigns. The way in which self-efficacy was conceptualised is discussed first.

5.1 SELF-EFFICACY

This section describes how self-efficacy was identified in this study by referring to Bandura's (1997) concepts of magnitude, strength and generality. Specifically, it describes how *persistence* was a more appropriate dimension relative to self-efficacy due to the qualitative nature of this study.

Bandura (1997) suggested that people's confidence in their ability to perform a particular behaviour (self-efficacy) should be measured according to the magnitude, strength, and generality of their self-efficacy beliefs. Quantitative scales are usually used to measure self-efficacy (Maurer & Andrews, 2000), which include the items that Bandura (1997) suggested. This qualitative study identified strong self-efficacy beliefs when individuals expressed a desire to *persist*, even though obstacles or difficulties were encountered while performing waste minimising behaviours. Bandura (1997) noted that people who have a strong "belief in their capabilities will persevere in their efforts despite innumerable difficulties and obstacles" (p. 43). In this study, perseverance or persistence seemed to be a reliable indicator of Bandura's (1997) concept of the *strength* of self-efficacy.

Self-efficacy dimensions of magnitude and generality were not addressed in this study. According to Bandura (1997) self-efficacy should be measured across different task demands (magnitude) and across a wide range of activities (generality). This qualitative study was concerned specifically with waste minimisation. Individuals were asked how confident they were to perform waste minimising activities overall. A more in-depth study could focus on how confident individuals are in performing each of the three aspects (recycle, reduce, and reuse) of waste minimisation in order to measure the magnitude of self-efficacy beliefs. Likewise, different environmental activities could be investigated in order to measure the generality of self-efficacy beliefs.

Bandura's (1997) concept of the strength of self-efficacy was also identified when individuals discussed their conscience or morals. Individuals who were active in waste

management and part of the defined group (Group Activists) used emotive language to discuss their conscience. Having strong moral convictions about waste management influenced their willingness to persist. Although individuals who were active but not part of the defined group (Community Activists) did not use this type of emotive language as much as members of the defined group (Group Activists), one person mentioned that they were confident to perform waste minimising behaviours because it was morally right to do so.

This section has outlined that *persistence* and *conscience* were used to identify levels of self-efficacy in this study. The following sections address Findings 1 and 2 in relation to self-efficacy. Finding 1 suggests that self-efficacy is related to group belonging, and Finding 2 suggests that self-efficacy is related to action. (Findings 1 and 2 also apply to solution efficacy which is discussed later.)

5.1.1 Self-efficacy and Group Belonging

Finding 1 identified different levels of self-efficacy between the defined and undefined groups. The people who were active in waste management but did not belong to a defined group (Community Activists) expressed less consistent views about their willingness to persist when performing waste minimising activities. Therefore, they had mixed views about their capabilities (self-efficacy). Those people who were not active in waste management and not members of a defined group (Community Non-activists) expressed a lack of confidence in their abilities (self-efficacy) to perform the desired behaviours. These findings suggest that self-efficacy is related to group belonging since the people who were active in waste management and belonged to the defined group (Group Activists) expressed a greater desire to persist when judging their capabilities (self-efficacy).

No research studies were identified in the environmental literature that related self-efficacy beliefs to group belonging. However, some research on social dilemmas

established a connection between self-efficacy and group belonging. The waste problem can be classified as a social dilemma because individuals profit from unrestrained consumption of a shared resource and as a result the resource is ruined for others (Kerr, 1989). Kerr (1989) found that when individuals were faced with a social dilemma, self-efficacy was stronger in smaller groups. He suggested that redefining larger groups into smaller ones might produce an “illusion of greater efficacy” (Kerr, 1989, p. 310). De Cremer and van Vugt (1998) also found that group identification had an effect on self-efficacy. They suggested that establishing a strong group identity might create the illusion of greater efficacy referred to by Kerr (1989).

However, in both of these studies (i.e. Kerr, 1989; De Cremer & van Vugt, 1998) it is not clear how self-efficacy is defined. Kerr (1989) suggested that the purpose of his research was to identify “...beliefs that personal or collective acts of co-operation are (or are not) effective...” (p. 289). His subjects were asked to “estimate how much a decision to invest by you will increase the group’s probability of earning the investment payoff” (p. 290). This implies that his research focused on the perceived effectiveness of actions, which is a measure of solution efficacy rather than perceived capabilities, which is a measure of self-efficacy. Similarly, self-efficacy in De Cremer and van Vugt’s (1989) study was defined as “one’s perceptions that his or her contributions may make a difference in obtaining a public good” (p. 3). Again, they seemed to be measuring the perceptions about the effectiveness of one’s actions (solution efficacy) rather than perceptions about one’s confidence in their capabilities (self-efficacy). Despite these definitional differences, these studies still provide some support for the relationship between belonging to a small group and strong efficacy beliefs.

If small groups create what Kerr (1989) called an illusion of greater efficacy, social marketing programs might be used to convince people to join a defined environmental group as this could strengthen their self-efficacy beliefs. People who are already active might be good targets for such a social marketing campaign since they

already believe that waste can be reduced when everyone works together (collective-outcome efficacy -community).

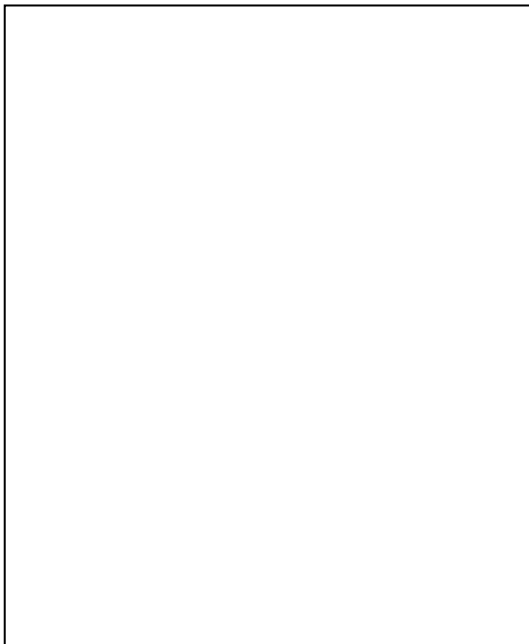
This section discussed how self-efficacy might be related to group belonging because an illusion of greater efficacy occurs in smaller defined groups. Therefore social marketing programs which focus on convincing people to join defined environmental groups might be worthwhile. Convincing Community Non-activists to join a defined environmental group would be difficult in itself and even more difficult because they believed that waste would not be reduced when everyone works together (collective-outcome efficacy - community). For these non-active people (Community Non-Activists) overcoming the difficulties they perceived in relation to waste management might help to strengthen their confidence in their capabilities (self-efficacy) to perform waste minimising behaviours. The following section discusses this in relation to Finding 2 which identified that self-efficacy is related to action.

5.1.2 Self-efficacy and Action

As mentioned above, the non-active individuals (Community Non-activists) expressed a weak sense of self-efficacy by referring to the difficulties associated with action. One way to overcome the difficulties perceived by non-active individuals (Community Non-activists) might be to provide them with the appropriate external mechanisms to support the behaviour. Axelrod and Lehman (1993) coined the term 'channel efficacy' to describe people's beliefs about the degree of difficulty in performing environmentally friendly behaviours. They suggested that this belief would provide an indication of the external mechanisms that affect the ease of action (e.g. the provision of recycling bags). Axelrod and Lehman (1993) found that channel efficacy was significantly associated with self-efficacy and an overall measure of environmental behaviour. Although channel efficacy was not included in the research objectives of this thesis, knowing which mechanisms make it easier for people to reduce waste might help to strengthen beliefs about individual capabilities (self-efficacy).

Some of the men who were not active in waste management (Community Non-activists) felt that inadequate infrastructure reduced their ability to perform waste minimising behaviours (self-efficacy). Female Community Non-activists felt that the difficulties associated with selecting the right products reduced their ability to minimise waste (self-efficacy). Providing them with appropriate external mechanisms that increase the ease of action (such as the provision of a recycling bin or an instruction booklet on recycling) might strengthen self-efficacy beliefs. However, it should be noted that this study cannot determine if increased action is a cause or consequence of self-efficacy. Figure 5.1, which was included in a website developed by Dr McKenzie-Mohr (n.d.), is an example of an external mechanism which could be used to strengthen self-efficacy beliefs by reminding people what types of kitchen waste they can and cannot compost.

Figure 5.1: Example of an external mechanism which could be used to enhance self-efficacy



Both of the active groups in this study (Group Activists and Community Activists) expressed stronger perceptions of self-efficacy than the inactive group

(Community Non-activists). However Group Activists were in fact more active than Community Activists and also expressed the strongest beliefs about their abilities to reduce waste (self-efficacy). This suggests that the *extent* to which individuals are environmentally active may be strongly related to self-efficacy. That is, although self-efficacy has been found to predict active versus inactive individuals in the literature, this is the first study to the researcher's knowledge that has related self-efficacy to individuals who are highly active, moderately active and inactive. However, this study still supports literature that has established a connection between self-efficacy and active versus inactive behaviour. These are discussed below.

Axelrod and Lehman (1993) found that individuals with high levels of self-efficacy, along with other factors, were more inclined to behave in an environmentally responsible manner. Lindsay and Strathman (1997) used the Health Belief Model to predict recycling behaviour and found that self-efficacy was significantly related to recycling. Taylor and Todd (1995) tested a model of household recycling and composting behaviour based on the theory of planned behaviour. They found that intentions to recycle or compost were indirectly influenced by self-efficacy. In this study, self-efficacy seemed to be stronger for those individuals who were most active in waste management (Group Activists). Therefore, social marketing programs might focus on increasing self-efficacy not only to convince inactive people to act, but to encourage moderately active people to increase their activity further.

In contrast to this study and the studies cited above, Oskamp, et al. (1991) found that efficacy did not relate to people's recycling activities. However, they did not explain that their study identified a particular type of efficacy known as 'response efficacy'. Lindsay and Strathman (1997) pointed out that Oskamp and his colleagues measured how people view the effectiveness of recycling (i.e. response efficacy) instead of how people view their capabilities to recycle (self-efficacy). Therefore, Oskamp, et al.'s (1991) results cannot be compared with this study. Response efficacy will be discussed in more detail later.

This section has discussed how the relationship identified between self-efficacy and action supports previous studies. However, this study was unique because level of activity, including highly active, moderately active and inactive, also appeared to relate to self-efficacy. Therefore social marketing programs might be able to focus on increasing self-efficacy beliefs in order to encourage inactive individuals to commit to waste management practices as well as to encourage active individuals to be more active. However it is not known if higher levels of activity are a cause or consequence of self-efficacy.

The following section addresses one of the minor findings that relates self-efficacy to knowledge.

5.1.3 Self-efficacy and Knowledge

Although this section does not relate to one of the major findings, it has been included because the literature review established that knowledge was considered to be a weak predictor of environmental behaviour. This study found that a relationship existed between knowledge and self-efficacy and might therefore contribute to the understanding of the behavioural gap. That is, the knowledge/self-efficacy relationship might help to understanding why pro-environmental knowledge and attitudes do not necessarily translate to pro-environmental behaviour.

All of the people in the three groups (Group Activists, Community Activists and Community Non-Activists) were knowledgeable about environmental problems. That is, they were able to express 'what' constitutes environmental harm. However, only the two active groups (Group Activists and Community Activists) knew 'how' to perform environmentally friendly behaviours. The people who were not active in waste management (Community Non-activists) were the least knowledgeable about specific

waste minimising activities. For them, knowing how to perform waste minimising behaviours was closely related to how they judged their capabilities (self-efficacy).

Bandura (1997) acknowledged that people's lack of confidence in their capabilities (self-efficacy) requires competencies to be developed. This might suggest that knowledge-based campaigns should be used to educate Community Non-activists about how to perform specific waste minimising behaviours. The knowledge-attitude-behaviour theory holds that knowledge and attitudes need to be enhanced before behaviours can change. However, this relationship has often been reported as weak in the environmental literature (e.g. Maloney & Ward, 1973; Scott & Willits 1994; Krause, 1993). In this study, there appears to be a relationship between knowing how to perform waste minimising behaviours (knowledge), expressing a strong confidence in one's capabilities (self-efficacy), and performing waste minimising behaviours (behaviour). Although it is not possible to determine if knowledge is a cause or a consequence of self-efficacy in this study, Community Non-activists discussed their lack of knowledge when asked direct questions about their abilities (self-efficacy). Therefore it might be common sense to suggest that self-efficacy flows from knowledge.

Bandura (1997) referred to four different sources that strengthen self-efficacy. Firstly, mastery is the most tangible source of self-efficacy because it "requires experience in overcoming obstacles through perseverant effort" (Bandura, 1997, p. 80). Since persistence was lacking in people who did not perform waste minimising behaviours (Community Non-activists), mastering the specific skills required to perform the behaviour might also help to strengthen self-efficacy. However, Bandura (1997) noted that people need to be convinced that they can exercise better control through mastering a particular situation. Since Community Non-activists did not believe that waste can be reduced through their actions (solution efficacy) or by everyone working together (collective-outcome efficacy - community) this sense of control might be weak.

The second source of self-efficacy that Bandura (1997) referred to involves vicarious learning whereby people believe that they have the ability to do something (self-efficacy) when they see that other people can. All three groups (Group Activists, Community Activists and Community Non-activists) thought that people in general were incapable of performing the necessary behaviours because of greed and selfishness (collective efficacy - community). Therefore it might be difficult to convince the non-active people (Community Activists) that they are capable of performing waste minimising behaviours (self-efficacy) through vicarious learning.

The third source of self-efficacy that Bandura (1997) referred to involves verbally persuading people that they have the ability to perform particular behaviours. People who do not perform waste minimising behaviours (Community Non-activists) might be encouraged to reduce waste by being told explicitly that they can. However, this still does not take into account that Community Non-Activists did not believe that waste can be reduced through their efforts (solution efficacy) or by the efforts of everyone working together (collective-outcome efficacy - community).

The final source of self-efficacy that Bandura (1997) discussed is concerned with the physiological and emotional states of people. He noted that negative physical and emotional arousals influence people's perceptions of their capabilities. In this study, people who did not perform waste minimising behaviours (Community Non-Activists) referred to the inconveniences associated with reducing waste, such as time, cost and confusion. Perhaps these inconveniences cause stress, which weakens their confidence in their ability to perform the desired behaviours (self-efficacy). Therefore strengthening self-efficacy through positive emotional and physiological experiences might increase waste management activities. This might be achieved through providing the appropriate external mechanisms (such as instructions on recycling bins, or signage on supermarket shelves which contain environmentally friendly products) in order to reduce the difficulties associated with performing waste minimising behaviours (Axelrod and Lehman, 1993).

This section focussed on one of the minor findings, which related knowledge to self-efficacy. The non-active individuals expressed a lack of knowledge when they discussed their capabilities. Therefore, social marketing might focus on designing 'know how to' messages to increase self-efficacy.

Findings 1 and 2 have been discussed in relation to self-efficacy. However Findings 1 and 2 also apply to solution efficacy. Therefore the following sections discuss Finding 1 which also identified that solution efficacy relates to group belonging, and Finding 2 which also identified that solution efficacy relates to action.

5.2 SOLUTION EFFICACY

Bandura (1997) suggested that what people expect from their behaviour (solution efficacy) depends on their judgments of how well they can perform the behaviour (self-efficacy). In this study the way in which solution efficacy related to group belonging and action appeared to be the same as the way in which self-efficacy related to group belonging and action. Therefore, when self-efficacy was high, solution efficacy was also high and when self-efficacy was low, solution efficacy was also low. However, in this study it is not possible to determine how self or solution efficacy influence each other.

5.2.1 Solution Efficacy and Group Belonging

Finding 1 identified different levels of solution efficacy between the defined and undefined groups. The people who were active in waste management but did not belong to a defined group (Community Activists) expressed less consistent views about the effectiveness of their own actions in reducing waste. Therefore, they had mixed views about their effectiveness (solution efficacy). Those people who were not active in waste management and not members of a defined group (Community Non-activists) expressed

negative views about the effectiveness of their own actions (solution efficacy) in reducing waste. These findings suggest that solution efficacy is related to group belonging since the people who were active in waste management and belonged to the defined group (Group Activists) expressed consistently positive views about the effectiveness of their own actions in reducing waste (solution efficacy).

Section 5.1.1 discussed how Kerr (1989) might have treated self-efficacy as a measure of solution efficacy in his study of social dilemmas. Therefore Kerr's (1989) work is mentioned again in this section to explain the relationship that exists between group belonging and solution efficacy. In this thesis, the people who belonged to the undefined groups (Community Activists and Community Non-activists) had lower levels of solution efficacy compared to the people who belonged to the defined group. This finding may support Kerr's (1989) study, which illustrated that as group size increases, perceptions about efficacy decrease.

People who were active in waste management but not part of a defined group (Community Activists) expressed less consistent views about the effectiveness of their actions (solution efficacy). Therefore convincing them to join a defined environmental group might strengthen their solution efficacy because they would be part of a smaller setting in which to assess the effectiveness of their own actions. Convincing Community Non-activists to join a defined environmental group would be difficult in itself and even more difficult because they did not believe that waste can be reduced when everyone works together (collective-outcome efficacy - community). In spite of this, the connection between solution efficacy and group belonging identified in this study supports other findings in the literature. These studies are discussed below.

Milbrath (1981, cited in Manzo and Weinstein, 1987) found that people who belonged to an environmental organisation were more positive about the likelihood of influencing environmental policy. This relationship suggested that group belonging is

related to positive views about the effectiveness of actions (solution efficacy). Likewise, Manzo and Weinstein (1987) found that active members of an environmental organisation (the Sierra Club) were more likely to believe in their political efficacy than were inactive members of the organisation. Bandura (1997) defined political efficacy as “people’s beliefs that they can influence the political system” (p. 483). This study supports Manzo and Weinstein’s (1987) results since members of the defined environmental group (Group Activists) viewed their actions as effective in reducing waste (solution efficacy). Manzo and Weinstein’s (1987) study only dealt with active and inactive members of a defined environmental group, whereas this study has included active and inactive members of undefined groups (Community Activists and Community Non-activists) to determine if group belonging could explain differences in solution efficacy. There were no inactive members of the defined environmental group (Group Activists).

People who were not part of a defined environmental group (Community Activists and Community Non-Activists) referred to the effectiveness of the methods used to reduce waste when asked to judge the effectiveness of their own actions (solution efficacy). Judging the effectiveness of the methods used in waste reduction is considered to be an application of response efficacy rather than solution efficacy. Bandura (1997) distinguished between response efficacy and solution efficacy by stating that “response efficacy is concerned with whether a given course of action can produce a particular attainment; [whereas] outcome expectations [solution efficacy] are concerned with the consequences that flow from that attainment” (p, 283). Bandura (1997) referred to response efficacy as a belief in the means through which behaviour is performed. Therefore believing that recycling is, or, is not an effective means to solve the waste problem constitutes response efficacy.

Some people were also sceptical about whether or not the council recycled what they collected from households. Therefore questioning whether recycling is carried out by councils might affect how these people view recycling as a means to reduce waste. If

Community Activists and Community Non-activists do not believe in the means through which waste is reduced (response efficacy) then perceptions about their effectiveness in reducing waste (solution efficacy) are likely to be low. This is supported when Bandura (1997) noted that “people do not consider themselves efficacious if they judge they lack any means to exert influence over events” (p. 283).

Axelrod and Lehman (1993) found that response efficacy correlated with an overall measure of environmental behaviour in their study. In this thesis, those people who were not part of the defined group (Community Activists and Community Non-activists) might have expressed lower levels of solution efficacy because they did not believe in the means through which actions are carried out. Therefore, belonging to a defined group might strengthen this belief by reducing scepticism.

This section has discussed how solution efficacy might be related to group belonging since the members of the defined group expressed the strongest perceptions about the effectiveness of their own actions. However, Finding 2 identified that solution efficacy was also related to action since the active groups (Group Activists and Community Activists) expressed higher levels of solution efficacy than the inactive group (Community Non-activists). This latter finding is discussed below.

5.2.2 Solution Efficacy and Action

Some studies have established that solution efficacy can be used to predict active versus inactive individuals. Both of the active groups in this study (Group Activists and Community Activists) expressed stronger perceptions of solution efficacy than the inactive group (Community Non-activists). However Group Activists were in fact more active than Community Activists and expressed the strongest beliefs about their abilities (self-efficacy) as well as their effectiveness (solution efficacy) in reducing waste. This suggests that the extent to which individuals are environmentally active may not only be

more closely related to self-efficacy but also to solution efficacy. That is, although self- and solution efficacy have been found to predict active versus inactive behaviour in the environmental literature, this is the first study, to the researcher's knowledge, that has related self- and solution efficacy to individuals who were highly active, moderately active and inactive. Section 5.1.2 discussed how the relationship between self-efficacy and action supported previous studies in the literature. Similarly, the following section discusses how the relationship between solution efficacy and action supports previous research findings.

Lindsay and Strathman (1997) found that recyclers were more likely to have positive views about the outcomes of recycling. They measured outcome expectancy (solution efficacy) by subtracting the perceived barriers from the perceived benefits of recycling. However, this study gained insight into solution efficacy by asking individuals if they felt their actions were effective in reducing waste. Although Lindsay and Strathman's (1997) calculation of solution efficacy might not be directly comparable to the treatment of solution efficacy in this study, it can still be supported by the stronger perceptions of solution efficacy that were evident for those who were most active (Group Activists).

Axelrod and Lehman's (1993) study of environmentally concerned behaviours included three measures of outcome expectancy (solution efficacy) including tangible, social and principled outcome desires. Tangible outcomes focused on personal gain as a desired outcome of environmental behaviour. Social outcomes focused on social rewards as a desired outcome of environmental behaviour. Principled outcomes focused on the rewards for the environment that can be achieved through environmental behaviour. The concept of principled outcome desires discussed by Axelrod and Lehman (1993) represented the same construct as solution efficacy in this thesis since individuals were asked about the effectiveness of their actions to reduce waste rather than the effectiveness of their actions in producing a personal or social outcome. In this thesis, people who were not active in waste management (Community Non-activists) felt that the personal

costs associated with waste reduction outweighed the benefits. Therefore, Community Non-Activists might not consider the reduction of waste to be the outcome that they desire. Instead, they might value the personal and social rewards that Axelrod and Lehman (1993) investigated. Therefore, social marketing might be used to increase waste minimising behaviours by focusing on the non-environmental outcomes of waste minimisation (e.g. cost savings, recognition from family or friends). Figures 5.2 and 5.3 which were included in a website developed by Dr Mckenzie-Mohr (n.d.), are used here to exemplify these non-environmental approaches. Although the ‘Eco Pass’ explicitly promotes ecological benefits it also focuses on the *economic* benefits of the product. The “We waste less” sticker, which is supposed to be placed on a house window or letterbox, might also serve to satisfy a *social* desire to be recognised or acknowledged by others.

Figure 5.2: Example of an outcome desire promoting economic benefits

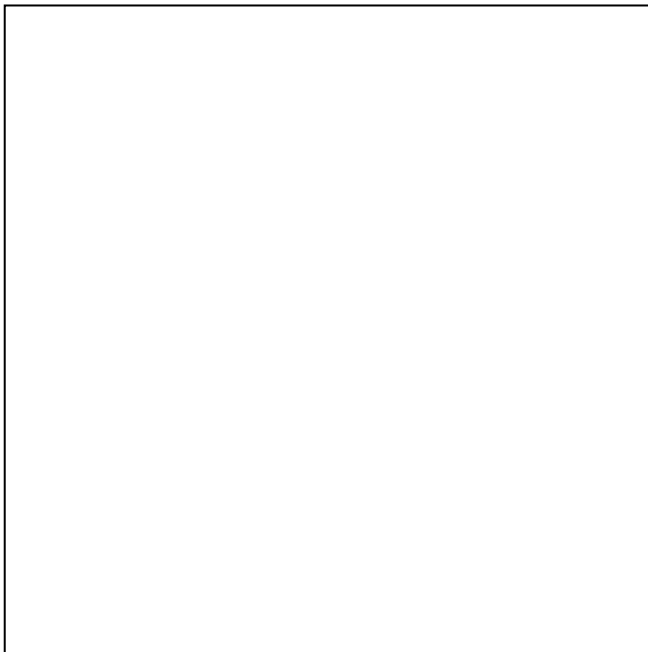
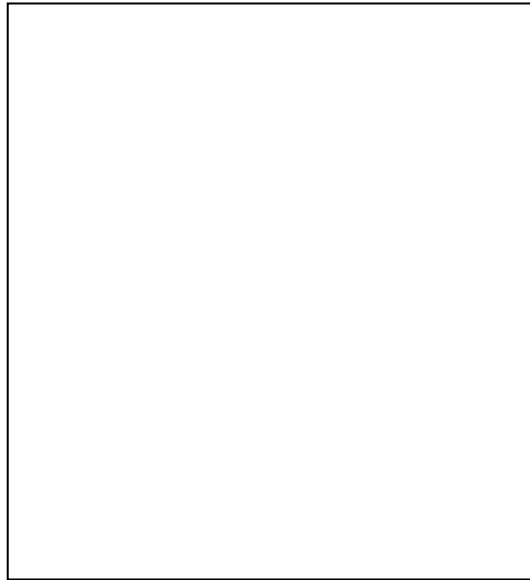


Figure 5.3: Example of an outcome desire promoting social recognition



A study by Trigg, et al. (1976) provided an insight into the more positive perceptions about the effectiveness of one's actions to reduce waste (solution efficacy) that were expressed by the people who were most active (Group Activists) in this thesis. Although Trigg, et al.'s (1976) study was mainly concerned with internal and external locus of control, they did find that the 'internals' who were active in anti-pollution behaviour were more likely to express optimistic views about the outcomes of action. They did not ask individuals about the effectiveness of their own actions (solution efficacy). Instead, they asked individuals if they thought pollution would be reduced in the future. However, this still provides an insight into how people view the effectiveness of their own actions, because it is unlikely that they would be optimistic about the likelihood of pollution being reduced in the future if they do not believe that their own actions are at least helping to reduce waste.

Some other studies included concepts which are similar to solution efficacy. Arbuthnot's (1977) research found that individuals who expressed personal control over the outcomes of actions were more likely to use recycling centres. Personal control is

similar to solution efficacy since both constructs measure individual perceptions about the outcomes of action. Similarly, Ellen, et al.'s (1991) research on perceived consumer effectiveness is also related to this study. They defined perceived consumer effectiveness as the belief that the efforts of an individual can make a difference in the solution to a problem. Therefore, perceived consumer effectiveness is comparable to solution efficacy in this study. Ellen, et al. (1991) suggested that people might alter their behaviour if convinced that their own actions will positively influence environmental protection. In this thesis, the people who were not active in waste management (Community Non-activists) did not believe that their actions would be effective in reducing waste (solution efficacy). Therefore enhancing the perceptions that non-active people have about their effectiveness in reducing waste might increase behaviour. The advertisement in Figure 5.4 exemplifies the beliefs that people might express about the inability to reduce waste through their own efforts. Although, this advertisement does not constitute social marketing because its objective is to create a socially responsible corporate image of British Petroleum, it is a good example of how people view environmental problems. This advertisement is also applicable to the concept of collective-outcome efficacy and is discussed again later.

Figure 5.4: Example of enhancing a low solution efficacy belief



Some people may find it difficult to regard their actions as effective in reducing waste (solution efficacy) because environmental problems are owned by all members of society and cannot be solved alone. Group Activists felt that their actions were effective (solution efficacy) because they recognised the value of everyone working together (collective-outcome efficacy - community) to reduce waste. This is best exemplified in the statement “a whole lot of single drops will eventually fill up a bucket.” In contrast, Community Non-activists felt that their actions were ineffective because they did not think that everyone working together would reduce waste (collective-outcome efficacy - community). This is best exemplified by one participant’s statement “it’s still just a drop in the bucket.” This might suggest that for environmental problems solution efficacy is difficult to assess because people judge the effectiveness of their own actions in relation to the effectiveness of others’ efforts. Therefore in this thesis, believing that waste can be reduced if everyone works together (collective-outcome efficacy - community) might influence how people viewed the effectiveness of their own actions in reducing waste (solution efficacy).

This section has discussed how the relationship identified between solution efficacy and action supports previous studies. However, this study was unique because level of activity, including highly active, moderately active and inactive, also appeared to relate to solution efficacy. Therefore social marketing programs might be able to focus on increasing solution efficacy in order to encourage inactive individuals to commit to waste management practices as well as to encourage active individuals to be more active. However it is not known if higher levels of activity are a cause or consequence of solution efficacy.

The following section discusses Finding 3 that relates collective efficacy to group belonging. However, the way in which collective efficacy was conceptualised is discussed first.

5.3 COLLECTIVE EFFICACY

This section describes how the concept of collective efficacy emerged in this study. Specifically, it identifies the difficulties involved in defining collective efficacy according to Zaccaro, et al's (1995) definition and discusses how collective efficacy was defined in this thesis.

Zaccaro, et al., (1995) and Bandura (1997) defined collective efficacy as a group construct, encompassing shared beliefs about the ability of the group to perform. By this definition, collective efficacy can be measured by aggregating individual perceptions about the ability of the group (Zaccaro, et al., 1995) in a quantitative research design. Therefore, the Zaccaro and Bandura definitions were not helpful for a qualitative study and it was decided to follow Riggs and Knight's (1994) treatment of collective efficacy as an individual construct for the purposes of this exploratory research. Therefore, in this study collective efficacy encompassed individual beliefs about the abilities of group members to perform waste minimising behaviours as an *a priori* step in measuring collective efficacy as an aggregated construct.

However, the concept of collective efficacy that emerged from the data in this study is more complex than Riggs and Knight's (1994) definition. This became evident when interviewees described a multidimensional view of collective efficacy. That is, although interviewees assumed that everyone was capable of performing the activities physically, their confidence in these capabilities were reduced when other factors were considered. For example, interviewees generally believed that everyone was capable of performing the behaviour but also felt that people were selfish and therefore would not be *willing* to perform the behaviour.

This might suggest that one element of Zaccaro, et al.'s (1995) more complex definition, which involved perceptions of the *willingness* of other group members to contribute resources, is a useful addition to the Riggs and Knight (1994) definition for this study. Therefore, in this study, collective efficacy, being a judgment of people's abilities, was identified when 1) individuals expressed their views about how well other group members could perform waste minimising behaviours and 2) when individuals expressed their views about how *willing* they thought other group members would be to perform the behaviours.

The people who belonged to the defined group (Group Activists) in this study were members of the environmental group known as Earth Carers. Therefore, Group Activists could express how they felt about the ability of Earth Carers (collective efficacy - group) as well as how they felt about the ability of people in the general community (collective efficacy - community) to perform waste minimising behaviours. Therefore Group Activists were able to express a sense of collective efficacy at the defined group level (collective efficacy - group) and then express a different sense at the community level (collective efficacy - community).

However, those people who did not belong to the defined group (Community Activists and Community Non-activists) only expressed how they felt about the ability of people in the general community (collective efficacy - community).

The following section addresses Finding 3 which identified that members of the defined group expressed a strong confidence in the abilities of Earth Carers (collective efficacy - group), whereas none of the groups expressed a strong confidence in the community (collective efficacy - community). Therefore, there appears to be a relationship between collective efficacy (group) and group belonging.

5.3.1 Collective Efficacy and Group Belonging

All three groups (Group Activists, Community Activists and Community Non-activists) thought that people who belonged to the general community were capable of performing the behaviours but felt that they would not be willing to perform the behaviours because of selfishness and greed (collective efficacy - community). If Zaccaro, et al.'s (1995) definition of collective efficacy which involved a willingness to contribute resources was not considered in this study, a false sense of collective efficacy (community) would have been evident since all three groups considered other people to be physically capable. Therefore all three groups expressed a low level of collective efficacy at the community level because they did not believe that community members would contribute resources (e.g. time, money, switching of products).

However, Group Activists are able to hold a simultaneously strong belief about the ability of Earth Carers (collective efficacy - group). This may allow them to override the negative views they have of the community (collective efficacy - community.) This might suggest that the defined group (Group Activists) can build a sense of collective efficacy by belonging to a small environmental group such as Earth Carers. This would be particularly relevant to this group, since their main objective as a group is to educate other people about waste management. Bandura (2000) listed a number of studies (eg Hodges & Carron, 1992; Prussia and Kinicki, 1994; Gibson, 1995) which he suggests support the relationship between a high level of collective efficacy and group accomplishments. For example, Prussia and Kinicki (1996) (also referred to by Bandura, 2000) found that confidence in group capabilities (collective efficacy) can be increased in order to facilitate the enhancement of group goals and effectiveness. The other two groups (Community Activists and Community Non-activists) might not be able to build a strong sense of collective efficacy in a large group setting such as the community. This might explain why those people who were active in waste management but did not belong to the defined group (Community Activists) expressed a lower level of commitment to waste management activities than the defined group (Group Activists).

This finding supports Kerr's (1989) discussion of the illusions of greater collective efficacy. His study found that people were more likely to contribute resources in smaller groups than in larger ones even when larger groups were more capable of succeeding. Therefore, although in reality larger groups might be more capable of achieving a particular outcome (collective efficacy), smaller groups were perceived as being more capable, creating an illusion of collective efficacy. Since waste can only be reduced through collective actions (i.e. by all members of the community), Kerr's (1989) study is particularly relevant here. In this thesis, members of the defined group (Group Activists) were more confident in the capabilities of Earth Carers to perform the behaviours (collective efficacy - group) than they were in the capabilities of the community (collective efficacy - community), which suggests that an illusion of greater collective efficacy may exist in this smaller group.

Another explanation can be offered which might explain why Group Activists had a high sense of collective efficacy (group). Zaccaro et al. (1995) noted that a sense of collective efficacy is also based on the perception that group members are able to co-ordinate shared resources. Perhaps in the area of waste management, although the community is much more capable of reducing waste through concerted efforts, smaller groups perceive their members to be more willing to commit and successfully co-ordinate their resources. Since all three groups thought that other community members were selfish and greedy, successfully sharing and co-ordinating resources would be unlikely.

Kerr (1989) suggested that it might be worthwhile re-framing social dilemmas that occur in large groups in terms of smaller groups. Since the waste problem is viewed as a large-group problem, social marketing might help to re-frame the waste problem as a small-group problem. This might create the illusion of collective efficacy without convincing people to join small environmental groups. For example, focusing on waste reduction as a street problem, rather than a community or council problem might be worthwhile.

Based on Kerr's (1989) research, De Cremer and van Vugt (1998) suggested emphasizing collective problems to enhance feelings of group belonging and efficacy. However, emphasising waste as a collective problem might have the opposite effect since non-active individuals in this study felt a sense of hopelessness and were overwhelmed by the magnitude of the waste problem.

Focusing on convincing the people who were not active in waste management (Community Non-activists) to feel part of smaller groups might still be ineffective since they did not believe that their own actions (solution efficacy) or the actions of others (collective-outcome efficacy - community) would be effective in solving the waste problem.

The concept of social loafing described by Latane, et al. (1979) might also be related to collective efficacy in this study. According to social loafing theory, people will reduce their efforts in large groups (Latane, et al. 1979). People who were not active in waste management and part of the undefined group (Community Non-activists) might not perform the desired behaviours because they felt that "nobody else will." This represents a lack of confidence in the abilities of community members (collective efficacy - community). Again, this might be understood by referring to part of Zaccaro, et al.'s (1995) complex definition of collective efficacy whereby people assess the co-ordination capabilities of the group along with the willingness of group members to commit resources. Community Non-activists might be able to 'loaf' their behaviour on to others, because they do not belong to a smaller group where they can easily identify the abilities and willingness of other group members to perform the desired behaviours (collective efficacy - group).

Latane, et al. (1979) suggested that people reduce their effort (loaf) because they can avoid the consequences of "slacking off" without being noticed or because they get "lost in the crowd" (p. 830). Social loafing might also explain why Community Activists

were slightly less active than Group Activists. That is, some Community Activists felt like they were “lost in this sea of people.” Latane, et al. (1979) also said that people might reduce their behaviour if they were unable to receive the benefits from their actions. People who were not active in waste management (Community Non-activists) thought that it would be unfair that they carried the costs of reducing waste while others benefited from their actions. Therefore they may be encouraged to pass on the responsibility of waste management to others, which is known as free-riding.

Free-riding might also cause the people who were active in waste management but not part of the defined group (Community Activists) to suffer from what Kerr (1983) described as the sucker effect. Kerr (1983) mentioned that the sucker effect occurs when people reduce their behaviour to avoid playing the fool. In this study, Community Activists were slightly less active than Group Activists. Therefore Community Activists might reduce their behaviour because they feel free-riders are taking advantage of their actions to reduce waste. However, people who belong to the defined group (Group Activists) might be able to avoid the sucker effect because they operate in a smaller group (Earth Carers) and possess a strong sense of collective efficacy within that group (collective efficacy - group). However, since all three groups thought that people in general would not be willing to perform the desired behaviours because of greed and selfishness, the perceived presence of free-riders is somewhat implied.

This section has discussed how smaller defined groups may be able to foster a stronger sense of collective efficacy. Some suggestions were also made which attempted to explain how a lack of confidence in the community (collective efficacy - community) might influence individuals to either reduce their actions or abstain from taking action. Individuals might be able to override their weaker confidence in the wider community by belonging to a smaller defined group.

The following section addresses Finding 4, that related collective-outcome efficacy to action.

5.4 COLLECTIVE-OUTCOME EFFICACY

First, this section discusses how the concept of collective-outcome efficacy emerged in this study.

Since Zaccaro, et al. (1995) and Bandura (1997) did not define collective-outcome efficacy as being a separate construct from collective efficacy, Riggs and Knight's (1994) definition was used because it enabled perceptions of collective efficacy and collective-outcome efficacy to be easily analysed in this thesis. In addition to this, Section 5.3 discussed how collective efficacy encompasses shared beliefs and can be measured by aggregating individual perceptions (Zaccaro et al., 1995; Bandura, 1997), which is also applicable to collective-outcome efficacy. However, this was not helpful for a qualitative study and it was again decided to follow Riggs and Knight's (1994) treatment of collective-outcome efficacy as an individual construct for the purposes of this exploratory research. Therefore, in this study collective-outcome efficacy encompassed individual beliefs about the effectiveness of group actions as an *a priori* step in measuring collective-outcome efficacy as an aggregated construct.

In this study, individuals were considered to have a strong sense of collective-outcome efficacy when they believed in the *effectiveness* of their group's ability to reduce waste. The people who belonged to the defined group (Group Activists) were able to express this belief by considering the effectiveness of Earth Carers as a group, which was formed to reduce waste. Since Group Activists were also members of the wider community, they were also able to express this belief by considering the effectiveness of the community as a whole in reducing waste. Therefore as was the case in the previous section, Group Activists were able to express a sense of collective-outcome efficacy at

the group level (collective-outcome efficacy, group) as well as at the community level (collective-outcome efficacy, community).

Before the main finding is addressed, the following section describes a minor finding that was identified between those who belonged to the defined group and collective-outcome efficacy at the group level. This is then followed by a discussion of Finding 4 which identified that collective-outcome efficacy at the community level related to action.

5.4.1 Collective-outcome Efficacy and Group Belonging

Group Activists expressed a strong confidence in the effectiveness of Earth Carers to reduce waste (collective-outcome efficacy, group). Bandura's (1997) concepts of mastery and verbal persuasion might have enhanced beliefs about the effectiveness of group actions (collective-outcome efficacy, group) in this study. One Group Activist said "our confidence comes from the things we have done and the feedback we have had" when asked about how effective Earth Carers was in reducing waste (collective-outcome efficacy, group). This statement might suggest that Bandura's (1997) concepts of mastery and verbal persuasion have strengthened the perceptions that Group Activists have about the effectiveness of Earth Carers in reducing waste. Bandura (1997) suggested that when people master the specific skills required to perform the behaviour and are verbally persuaded of their ability to perform the behaviour, self-efficacy is strengthened. In this study, these sources of self-efficacy may also be applicable to how people judge the effectiveness of their own group. Therefore if the group successfully masters a particular task and receives positive feedback about their performance, group members might have a stronger belief that they can produce the desired results (collective-outcome efficacy, group).

Group Activists felt that as a group they were able to overcome problems that might reduce their effectiveness. For example, the introduction of a one-bin waste management system would mean that the role of Earth Carers in educating others about recycling would be obsolete. This is because the responsibility to recycle would be shifted from individuals to councils. In spite of this, Group Activists were still able to express a strong confidence in their ability to reduce waste (collective-outcome efficacy, group) because people still need to reduce and reuse, rather than just recycle. Since Group Activists were also the most active in waste management, those people who were slightly less active and not part of a defined group (Community Activists) might be encouraged to increase their behaviour by joining an environmental group.

No research has been identified that examines the link between perceptions about the effectiveness of environmental groups (collective-outcome efficacy, group) and environmental behaviour. This would seem to be the first study that has gained insight into the relationship that exists between belonging to a defined environmental group and a strong confidence in the effectiveness of the group's actions to reduce waste (collective-outcome efficacy, group).

5.4.2 Collective-outcome Efficacy and Action

This section discusses the most pertinent finding of this study which identified that those who were active in waste management (Group Activists and Community Activists) believed that waste would be reduced if everyone joined together (collective-outcome efficacy, community) whereas those people who were not active (Community Non-activists) believed that collective actions would be ineffective. Therefore a low sense of collective-outcome efficacy (community) clearly related to the people who highlighted the behavioural gap (Community Non-activists) in this study.

In a study about the collective nature of environmental problems, Lubell (2001) stated that environmental behaviour is reduced if people do not believe that others will perform the behaviour. However in this study, even though all three groups (Group Activists, Community Activists and Community Non-activists) did not believe that others were willing to perform the desired behaviours because of selfishness and greed (collective efficacy - community), Group Activists and Community Activists still performed the desired behaviour. This might suggest that the decision to participate in waste management might depend on how these individuals viewed the effectiveness of collective efforts if they happen (collective-outcome efficacy, community) rather than the probability of them happening due to the unwillingness of other people to get involved. However, it does seem odd that people would participate simply because they believe that everyone working together will produce the desired result when they simultaneously believe that most people will not do so. Perhaps this decision is not based on rational decision-making but rather on moralistic or idealistic thought processes such as, 'I do not believe that everyone will join together in a concerted effort to reduce waste, but I do believe that they should, and that if they did, then the problem of waste would be solved.'

Both Group Activists and Community Activists believed in the effectiveness of everyone in the community working together to reduce waste (collective-outcome efficacy, community) while Community Non-Activists did not believe this. Therefore a relationship seems to exist between performing waste minimising behaviours and a strong confidence in the effectiveness of a concerted community effort (collective-outcome efficacy, community). This might suggest that social marketing campaigns should focus on raising the belief that a concerted effort by all members of the community will reduce waste. Although this study has noted relationships between waste minimising behaviours and the other types of efficacy (self- solution and collective), raising perceptions about the effectiveness of community action might be an *a priori* step in increasing behaviour.

Although Lubell's (2001) study focused on how individuals judge the effectiveness of their actions in reducing collective problems (a measure of solution efficacy) no studies have been found that address how individuals judge the effectiveness of *collective* actions in reducing collective problems. It seems logical to suggest that some people might feel unmotivated to act because their own actions alone will not be effective (solution efficacy). However, if individuals do not believe that the actions of everyone will be effective (collective-outcome efficacy, community) then their motivation to act might be reduced even further. Focusing on increasing people's confidence in the effectiveness of their own actions (solution efficacy) might be wasted unless they believe that a concerted effort by all members of the community will be effective (collective-outcome efficacy, community). Figure 5.5 was discussed in Section 5.2.2 and is revisited below to exemplify the way in which people might be encouraged to think positively about the effectiveness of collective actions. This advertisement, produced by British Petroleum, used the headline: "Take the power of one person and multiply it many times. The impact is enormous." This message utilised the concept of collective-outcome efficacy by informing people that collective actions are effective because individual actions combine to make an impact.

Figure 5.5: Example of how collective-outcome efficacy might be enhanced



In the previous section, Latane, et al.'s (1989) concept of social loafing was discussed in order to explain why people reduce their behaviour. That is, people reduce the effort they put into a particular task when group size increases. This was used to explain why those people who belonged to the larger undefined group (Community Activists and Community Non-activists) in this study were less active than those who belonged to the smaller defined group (Group Activists). However, Bandura (1997) has provided another explanation as to why behaviour is reduced in larger groups. He suggested that people reduce their behaviour in large settings, not because they can free-ride but because they do not believe that the group can produce any benefits.

This study supports Bandura's (1997) explanation because the inactive individuals (Community Non-activists) did not believe that if everyone performed the desired behaviour the result would be effective waste reduction. Bandura (1997) posited that "perceived inefficacy to alter entrenched institutional practices breeds especially pessimistic outcome expectancies" (p. 489). In this study the negative views that people held about other members of the community (collective efficacy - community) could be considered an entrenched belief. Most people felt that society was pre-occupied with consumerism, which has led to selfishness and greed. Since those people who were not active (Community Non-activists) thought that people's pre-occupation with consumerism will not change (an entrenched belief), this might have bred pessimistic expectancies about the effectiveness of collective efforts to reduce waste (collective-outcome efficacy, community) in this study. However, it should be noted that this does not explain why the entrenched belief did not result in pessimistic expectations by all three groups.

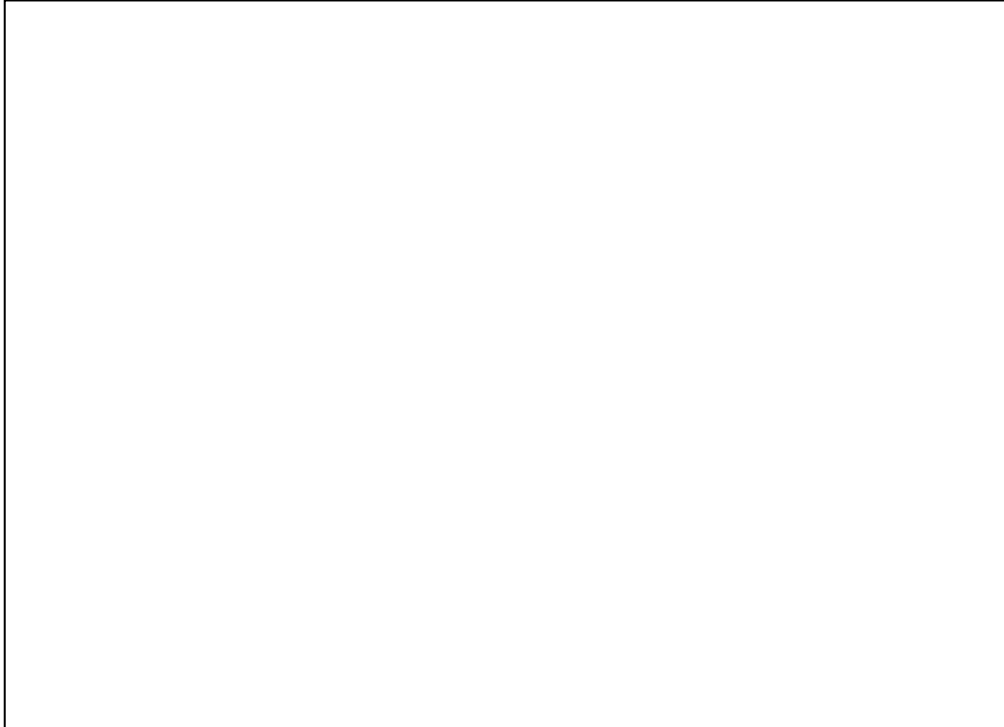
Bandura (1997) suggested that social reform would rarely be attempted because people do not believe that others will join together (collective efficacy - community). This remark presents waste management initiatives with some grim implications. Reducing waste can only be achieved if everyone acts collectively. Since those people who were not active in this study (Community Non-activists) did not believe that

collective action is likely to be effective (collective-outcome efficacy) enhancing their belief might be a crucial first step in convincing them to act. However, if this is still ineffective, the only solution might involve political reform, which requires that all citizens act to reduce waste. Social marketing would then be used to support the process of reformation. Germany introduced a law in 1991 referred to as the Packaging Ordinance which stipulated that manufacturers and other members of the supply chain must be responsible for the recycling of packaging (Sprenger, 1997). Although Germany has succeeded in reducing the amount of rubbish disposed of by landfill, this type of legislation has produced some implementation problems. For example, one law which requires consumers to make a 24 Euro cent deposit on tin cans has been criticised because consumers can only receive a refund when they return the can to the exact store from which it was purchased (Connolly, 2003).

Both of the active groups (Group Activists and Community Activists) felt that collective actions would be effective in reducing waste (collective-outcome efficacy, community). They also felt that if everyone joined together to reduce waste “a greater voice” to enlist support would be gained. The idea of having a greater voice might be supported by Bandura’s (1995) discussion of collective efficacy and political decisions. To him, collective efficacy was a way to establish national priority for a particular cause. In this study, having a greater voice might mean that the effectiveness of collective efforts to reduce waste (collective-outcome efficacy, community) is enhanced by creating political interest in waste reduction. Bandura (1997) noted that because society has become complex and must be controlled through political intervention, the only way in which individuals can control their lives is to influence political decision-making. Therefore a sense of political efficacy is required if people are to influence policy decisions (Bandura, 1997). In this study believing that a concerted effort will create a greater voice to reduce waste (collective-outcome efficacy, community) might be related to believing that the group can influence political decisions (political efficacy).

People who were active in waste management but not part of the defined group (Community Activists) also thought that the effectiveness of collective efforts by all members of the community (collective-outcome efficacy) would be enhanced if they felt a sense of connectivity with each other. They also felt that they should “see” the outcomes of their efforts in order to prove that their actions are effective collectively. This might suggest that convincing Community Activists to join smaller groups would foster the sense of connectivity they desire as well as provide a smaller setting in which they can “see” the results. This is particularly important because Community Activists were less active than Group Activists. Figure 5.6 is an example of a social marketing advertisement developed by the Water Corporation aimed at informing people about the outcomes of water saving activities and restrictions (Water Corporation website). This type of advertisement serves to illustrate that people might be encouraged to view collective actions as being effective when they have evidence of what has been achieved.

Figure 5.6: Example of how collective-outcome efficacy might be enhanced



Community Activists expressed mixed perceptions about the effectiveness of their own individual actions to reduce waste (solution efficacy). Perhaps they were active in waste management because they were confident that a concerted effort would result in waste reduction (collective-outcome efficacy, community). This seems logical because although they might have mixed feelings about the effectiveness of their own actions (solution efficacy) believing that waste can be reduced if everyone works together (collective-outcome efficacy, community) might strengthen their reasons for acting. However, Community Non-activists believed that neither their own actions (solution efficacy) nor the actions of everyone working together (collective-outcome efficacy, community) would be effective in reducing waste. Therefore, social marketers might need to focus on changing perceptions about the effectiveness of a collective effort in reducing waste before they can change behaviour. If people do not believe that collective efforts will solve the problem it is unlikely that they would act.

This section identified that collective-outcome efficacy (community) is related to action. However, other efficacy dimensions were also identified in previous sections that might help to increase behaviour. Therefore raising collective-outcome efficacy is considered to be an *a priori* step in increasing behaviour. Once collective-outcome efficacy has been enhanced, other efficacy dimensions might also need to be enhanced in order to reinforce the behaviour.

This chapter has discussed the relationships that were identified in the data and offers a number of approaches that social marketers might use to convince people to reduce waste. The relationships identified for self-efficacy, solution efficacy and collective efficacy related to both action and group belonging and therefore more research is needed before recommendations can be made about the direction of these relationships. For example, it is not known if a high level of self-efficacy was a cause or consequence of group belonging or action. However, the clearest relationship was

identified between collective-outcome efficacy and action. That is, people's perceptions about the effectiveness of group actions seemed to affect their behaviour. Therefore, the following section offers recommendations for social marketers which focus on enhancing collective-outcome efficacy as an *a priori* step in increasing behaviour.

CHAPTER 6

RECOMMENDATIONS FOR SOCIAL MARKETERS AND CONCLUSIONS

The main purpose of this study was to determine if efficacy perceptions could explain the gap that exists between pro-environmental concern and pro-environmental behaviour. The individuals who were inactive in this study (Community Non-activists) highlighted the behavioural gap because they expressed pro-environmental concern but did not transform this concern into action. Collective-outcome efficacy was the one type of efficacy perception that related most clearly to the behavioural gap. That is, the non-active individuals believed that waste could not be reduced through a concerted effort, whereas the active individuals believed that this was achievable. Therefore social marketing should focus on enhancing individuals' perceptions about the effectiveness of collective actions in reducing waste as an *a priori* step in increasing behaviour. Elements of the traditional marketing mix, commonly known as the four P's (Kotler, Adam, Brown, & Armstrong, 2003), are presented in section 6.1 in relation to this main finding. While other P's have been developed, for example Fine (1990a) added producers, purchasers, and probing and some service marketing writers have added people, processes and physical evidence, this study deals only with the original P's which include 1) product, 2) place, 3) price and 4) promotion. These four P's will be considered in a social marketing context, which is often regarded as having unique characteristics. Social marketing is considered to be unique because it is somewhat inflexible, intangible, complex, controversial, weak in providing personal benefits and often has negative connotations (Donovan and Henley, 2003).

According to Kotler and Roberto (1989), social marketing tries to induce social change by employing a change agent dedicated to persuading others "to accept, modify,

or abandon certain ideas, attitudes, practices, and behavior” (p. 6). From the findings of this study, it is recommended that social marketers should focus on changing the negative perception Community Non-activists have about the effectiveness of collective actions in reducing waste (collective-outcome efficacy - community) into a positive one.

This study identified other efficacy dimensions that might be related to waste minimising behaviours. These included the concepts of self-, solution and collective efficacy. Since relationships were identified between efficacy and group belonging as well as efficacy and action it was not clear if the efficacy dimensions or group belonging was a cause or consequence of behaviour. However a clear relationship existed between one of the efficacy dimensions - collective-outcome efficacy (community) - and waste minimising behaviour. This study has recognised that enhancing perceptions that community members have about the effectiveness of collective actions in reducing waste (collective-outcome efficacy, community) is a necessary first-step in increasing the practice of waste management. Other efficacy dimensions along with group belonging might then need to be enhanced in order to bolster these behaviours. Therefore these recommendations focus on the adoption of an idea first. Other social marketing initiatives would then follow in order to induce action.

Kotler and Roberto (1989) noted that social change campaigns will not be effective unless the target adopters demonstrate a degree of readiness to accept change. This is similar to the concept of buyer readiness that is used in traditional marketing. Marketers must plan their communications around the particular readiness stage of their target market. Each stage must be achieved before the next one can be presented. For example, a buyer must be aware that a product exists before they can form a liking for it. Social marketers need to deliver a change campaign when their target adopters are ready to take the next step towards behavioural change.

Prochaska and DiClemente's (1983) stages of change are particularly relevant to social marketing programs. They suggested that there are five stages of change that individuals move through when adopting desirable behaviours, including precontemplation, contemplation, preparation, action and maintenance. Precontemplation means that individuals are not considering changing their behaviour in the near future (Prochaska & DiClemente (1983). This thesis did not determine if inactive individuals were considering changing their behaviour. The precontemplation stage might seem appropriate since the main finding suggests that inactive individuals believe that waste reduction will not be achieved through collective efforts. However, since they were also considered to be pro-environmentally concerned, it might be reasonable to suggest that the inactive individuals, in fact, fall between the precontemplation and contemplation stages of change. Therefore enhancing collective-outcome efficacy is considered an *a priori* step in shifting inactive individuals to the higher stages of change discussed by Prochaska and DiClemente (1983).

The marketing concept, which is based on satisfying needs and wants through the provision of goods and services (Kotler, et al. 2003), presents a problem for the marketing of waste management. The waste problem can be considered a social dilemma whereby actions that benefit individuals are often detrimental to the rest of society. That is, excessive consumption is often beneficial to individuals but damaging to the natural environment, whereas actions to protect the natural environment seldom deliver immediate benefits to individuals. Although environmental protection provides benefits for everyone (by way of a cleaner/safer environment), the costs are absorbed by individuals. From a marketing perspective, satisfaction is difficult to deliver to individuals when the environment is prioritised. As the exploitation of the natural environment increases, individuals as well as marketers might have to be forced to change their concept of satisfaction in order to ensure the survival of the human species. Although the marketing concept has expanded in order to include a wider societal view, satisfying individuals is still a defining marketing principle. The following sections address the marketing mix (the four P's) within the context of this research.

6.1 THE MARKETING MIX

6.1.1 Product

Kotler, et al. (2003) described products as having three distinct levels. At the 'core' level, consumers seek the benefit that the product provides. The 'actual' product level involves all the aspects that enable the benefit to be derived. The 'augmented' level provides any benefits that go beyond what people really seek. The augmented product often extends satisfaction to that of delight. However, when consumers come to expect product augmentations, dissatisfaction can occur when they are not provided.

This research found that non-active people (Community Non-activists) did not believe that waste could be reduced through concerted efforts (collective-outcome efficacy, community). In this case, the core product must deal with convincing people that waste can be reduced when everyone works together. The core benefit is therefore a positive perception about waste reducing efforts in the community. The actual product consists of elements which enable this positive attitude to be accepted (e.g. pamphlets, posters, stickers etc...). The augmented product might involve additional benefits such as social recognition or self-enrichment. Once this product has been accepted, that is, once people believe that collective efforts to reduce waste do make a difference, core, actual and augmented products would then be developed that correspond to the other efficacy findings in this research in order to reinforce behaviour. More research would determine how this could be formulated in regards to self-efficacy, solution efficacy, collective efficacy and group belonging.

Kotler and Roberto (1989) pointed out that social products must not be mistaken as the tangible features of a product. For example, identifying recycling bags as the social product would be a mistake. Instead, the social product should constitute the need to believe that the combined efforts of all of society will result in waste reduction (collective-outcome efficacy).

Kotler and Roberto (1989) described a number of ways to classify social products. For this study, the social product could be classified according to what they described as latent demand. They suggested that latent demand occurs when needs cannot be satisfied because products do not exist. In this study, people do not believe that waste will be reduced when everyone works together. Therefore developing a social product that satisfies this is crucial. However, Kotler and Roberto's (1989) description of abstract demand is most appropriate for this study. They suggested that abstract demand occurs when idea adoption, rather than behavioural change is sought. This study identified that people must believe that collective efforts will reduce waste (collective-outcome efficacy) as an *a priori* step in increasing behaviour. Therefore once collective-outcome efficacy has been enhanced, other efficacy dimensions may then need to be enhanced in order to reinforce behavioural change.

The social product in this context might focus on convincing people that collective efforts will be effective in reducing waste by:

1. Informing individuals about the positive outcomes of waste reduction, for example, by using advertisements to illustrate what has or will be achieved over a certain period of time.
2. Overcoming negative perceptions about current waste management practices, for example, by focussing on reducing or eliminating scepticism about what is being recycled by producing evidence of recycling centres.
3. Reducing perceptions that individuals have about the hypocrisy involved in reducing waste. For example, choosing a gas fire over a wood-burning fire in order to reduce pollution could be considered hypocritical because millions of cars are responsible for most of the pollution. Although changing this perception might prove difficult, informing individuals about what can be realistically and practically changed might help to overcome this.

4. Enhancing the confidence individuals have in the power of 'every-day' people working together, for example, by creating a stronger sense of connectedness in the community.
5. Solving the real problems that people have in regards to reducing their waste. For example, making more sustainable product choices might be difficult when there is no alternative product which provides the same benefit to consumers. In this case, consumers might need to be convinced that some benefits need to be forgone in order to achieve sustainability.

Branding is important in communicating the total product package (Duncan, 2002). Duncan (2002, p. 13) described branding as a "bundle of information and experiences" which goes beyond the brand's identity (e.g. symbols, logos, colours). Establishing a strong brand name which can carry the message to consumers is therefore crucial. In this research the message may need to be branded under an already established brand such as Earth Carers or Keep Australia Beautiful. However an independent brand could be developed which endorses the main idea. For example a "think positive" brand could be associated with convincing people that collective efforts do reduce waste.

6.1.2 Place

Place or distribution is concerned with how accessible a product is to the customer (Fine, 1990b). The mass media may be particularly effective in convincing non-active people that collective actions are effective in reducing waste. Once this initial idea has been accepted then more targeted approaches might need to be used to increase behaviour. Other channels or intermediaries may also be used during this initial stage. However, intermediaries are often more difficult to control because the people involved have their own ideas and may require training (Donovan & Henley, 2003). Some consideration must be given as to how these intermediaries can be encouraged to carry out their roles appropriately through various kinds of incentives and partnerships. Places

that would be useful in distributing and providing access to the waste-minimisation social product might include:

1. **Workplaces:** Since most people are considered to be pro-environmental, workplaces may provide access to inactive individuals who would otherwise be difficult to reach. Seminars, information evenings or brochures may be provided at workplaces to support mass media messages.
2. **Council Offices:** Information that support the mass media messages may also be provided by councils. Since councils have access to information about local residents, this may provide a more targeted avenue for contact while mass media appeals are being broadcast.
3. **Earth Carers:** According to Fine (1990b) word-of-mouth is a particularly useful distribution channel for social marketing. The Earth Carers' program is designed to educate local residents about waste management so that friends and family will 'share' information. Therefore organisations, such as Earth Carers, might also be used to distribute the message.
4. **Website:** Pre-contemplators/Contemplators may want to access a website when they decide to seek further information. The Department of Environmental Protection might incorporate the message into their own website, or serve as a link to an independent website which carries the message.
5. **1800 number:** A call centre might also provide access to the message and be used to provide information at the caller's request. This call centre could also be used for marketing research purposes where data are collected from callers and then analysed.

6.1.3 Promotion

The purpose of mass communication is to inform and persuade people that a particular product is suitable (Kotler & Roberto, 1989). Although, mass communication

is not necessarily the best tool for convincing people to act (Kotler, et al. 2003) it is particularly appropriate for the waste minimising social product, that is, convincing people that collective efforts will reduce waste. The following forms of mass communication are considered to be particularly appropriate.

1. Advertising: A cost effective form of advertising is particularly important for social marketers since profits will not be generated from 'sales'. Print advertising might be appropriate since it allows for repetitive reading and a more in-depth analysis of the message (Rados, 1990).
2. Public Service Announcements: Rados (1990) suggested that Public Service Announcements would be particularly attractive to not-for-profit organisations because they are provided free-of-charge; however, the costs of creating the Public Service Announcements still need to be considered. They might be particularly useful in informing non-activists of the message since they are capable of reaching a large target audience in a credible form.

Rossiter and Percy (1997, cited in Donovan & Henley, 2003) suggested that sales promotion should be more readily applied to social marketing efforts. Sales promotion is one of the most effective tools used to instigate action because it gives consumers a reason to act now, rather than later. Donovan and Henley (2003) pointed out that sales promotions encourage reluctant audiences to try social products. In the waste management context, sales promotion might be used to facilitate message exposure. For example, offering competitions or gifts might encourage people to attend meetings or seminars that contain the core message.

Direct marketing and personal selling might also be used to facilitate message exposure and acceptance. For example, people who have seen the message in the media or through intermediaries might be contacted and visited in their homes. This would

support other marketing efforts and ensure that the message is being processed correctly. Evaluations of program effectiveness could also be carried out at this point.

6.1.4 Price

Social costs are primarily non-monetary which means that marketers must identify psychic, energy and time costs (Joyce & Morris, 1990). Since the social product in this context is concerned with convincing people to accept an idea at this initial stage rather than change their behaviour, the only obvious cost incurred would be the time spent listening to the message. If people can justify their reluctance to reduce waste because they believe that collective efforts are not worthwhile (collective-outcome efficacy, community) trying to change this perception may result in a psychological cost. For example, changing this particular mindset might result in some cognitive dissonance (Festinger, 1957). However, once the social product has been accepted, other social marketing initiatives would need to focus on the costs that non-activists identified in this study. Some of these pricing considerations are discussed below.

1. Effort and inconvenience: Some non-activists mentioned that they could not be bothered or did not have the time to spend sorting recyclable and reusable products.
2. Money: Certain environmentally friendly products were perceived as being more costly than other products.
3. Confusion: Some non-activists felt that knowing how to recycle was confusing and this might cause them some degree of psychological stress.

Social marketers will need to address how these costs can be minimised in subsequent studies. For example, if confusion causes people to become stressed, coping strategies might need to be developed.

This section has described how the four P's could be utilised in order to convince people that collective efforts are worthwhile (collective-outcome efficacy, community). Although the ultimate aim of any marketing effort is to get consumers to act - in this case to reduce waste - these recommendations deal primarily with the non-active target audience (precontemplators/contemplators) in order to persuade them to accept the idea of the effectiveness of collective actions in reducing waste (collective-outcome efficacy). Other marketing efforts that focus on convincing people to reduce waste will need to be developed once collective-outcome efficacy (community) has been enhanced.

6.2 CONCLUSION

This study was designed to identify if efficacy perceptions could help to explain why there is an apparent gap between pro-environmental concern and pro-environmental behaviour. Particularly, collective and collective-outcome efficacy were included because environmental sustainability necessarily involves the actions of all members of society; this seemingly has not been examined previously. Waste minimisation was chosen as the behaviour through which to explore this objective.

A number of findings resulted from the analysis. First, the way in which people perceived their capabilities (self-efficacy) and the effectiveness of their actions (solution-efficacy) related to waste minimising practices and to group belonging. That is, the people who actively belonged to an environmental organisation (Group Activists) possessed the highest sense of self- and solution efficacy. However, the people who did not belong to any environmental organisation but still performed waste minimising activities expressed both high and low perceptions of self- and solution efficacy. In contrast, however, the people who did not perform any waste minimising activities possessed a low sense of self- and solution efficacy. Likewise, Group Activists believed that their environmental organisation had the ability to carry out specific environmental tasks; therefore they also expressed a high sense of collective efficacy (group). However,

all three groups (Group Activists, Community Activists and Community Non-activists) felt that other community members were not capable of performing waste minimising behaviours because of selfishness and greed; therefore a low sense of collective efficacy (community) resulted. These findings warrant more research to determine the relationships identified. For example, it is not known if strong efficacy perceptions are responsible for actions, or if actions are responsible for strong efficacy perceptions. Likewise, it is not known if belonging to an environmental group is responsible for strong efficacy perceptions or if strong efficacy perceptions cause people to seek out group membership.

Despite these uncertainties, the most pertinent finding related to the way in which people perceived the effectiveness of collective efforts to reduce waste (collective-outcome efficacy, community). There was a distinct difference between people who were active (Group Activists, Community Activists) and people who were inactive (Community Non-activists). That is, active individuals believed that collective efforts were effective and would help to reduce the waste problems. In contrast, inactive individuals felt that no matter how many people were involved in waste minimising activities, the problem of waste would still exist.

Therefore, in summary it was concluded that a strong sense of collective-outcome efficacy might pave the way for responsible environmental behaviour. Once people believe in the value of a collective effort, other efficacy perceptions might also need to be strengthened in order to reinforce behaviour. This research has established that raising collective-outcome efficacy might be an *a priori* step to increasing behaviour. This insight might be a reliable explanation of why individuals who have pro-environmental beliefs do not act in a pro-environmental manner.

Indeed, if people believe actions are “just a drop in the bucket” compared to the magnitude of environmental problems that exist, it is conceivable that motivations to act would be weak, regardless of how highly the environment is regarded.

6.3 LIMITATIONS

Since individuals are assumed to have a fairly high level of expressed concern for the natural environment, responses might be affected by social desirability. This has been minimised by building rapport with interviewees and encouraging them to speak openly and honestly. Fontana and Frey’s (1994) advice on building rapport with interviewees was observed for this purpose. Specifically, they suggested that the interviewer’s dress creates an impression that will affect the success of the research. For the current study, the researcher was dressed in smart/casual clothing that was assumed to simulate that of the interviewees. Fontana and Frey (1994) posited that the style of language used by interviewers also influences the rapport building process. Casual language was used in the current study and adapted to suit interviewees where necessary.

Since the three groups were drawn from suburbs known for their higher socio-economic status, income levels may have been high generally. It was not possible to include a full cross-section of demographics in the sample because a convenience sampling method was used. However, all groups produced a similarly broad age demographic. It is possible that some interviewees felt restricted in terms of what they wanted to say because of age differences.

Section 3.5 discussed how five female interviewees were included in the focus group dedicated to male Group Activists. This imbalance might have caused the male interviewees to respond differently than if only males were present during the session. However, at the commencement of the focus group interviewees were encouraged to speak their minds and informed that there were no right or wrong answers. The focus

group researcher also informed interviewees that differences between male and female views were sought and all male responses were recorded on a separate transcript.

The results are confined by the nature of qualitative research. They only offer insight into Western Australian waste minimising behaviours and would not be generalisable to the Western Australian population or to other geographical regions because the sample is not representative. However, these results can be used as a basis for developing quantitative research designs. Recommendations for future research are offered in the next section.

6.4 FUTURE RESEARCH DIRECTIONS

Subsequent research could focus on how collective-outcome efficacy can be changed and which interventions would work best in developing a mentality that considers all environmental efforts as worthwhile. That is, in the context of this research, interventions need to be developed that convince people that all actions help reduce waste and that “every drop will eventually fill the bucket.” Once this change in mentality has been achieved, other efficacy dimensions could be examined more closely to determine their impact on behaviour. Quantitative scales might also need to be developed in order to achieve generalisability. The following is a list of ideas for future research:

1. What type of message is most effective in convincing people that collective actions are effective?
2. How do self-, solution and collective efficacy perceptions help to reinforce behaviour once people believe that collective actions are worthwhile?
3. Does a quantitative study confirm the apparent difference in collective-outcome efficacy between active and non-active individuals?

4. What are the influences that cause people to reject ideas that collective actions are worthwhile?
5. Do perceptions about the effectiveness of collective actions change according to different types of environmental behaviour?

This study built on previous efficacy and environmental research and contributes insight on several important issues. First, the findings provide information that helps to determine how the behavioural gap might be reduced. Second, this study contributes an important finding relating to the perception that people have about the effectiveness of collective actions (collective-outcome efficacy) to waste minimising behaviours. Third, the study suggests that raising collective outcome-efficacy should be treated as an *a priori* step in increasing waste minimising behaviours. If the findings could be confirmed by a quantitative study, future research could be conducted to determine the most effective way to convince people that collective efforts are worthwhile and provide recommendations for social marketing campaigns designed to increase behaviour. Following this, social marketing approaches designed to raise the other efficacy perceptions (self-, solution and collective) discussed in this research, might help to reinforce environmental actions.

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APPENDICES

APPENDIX A

Screening Survey

(By telephone)

Introduce self and explain that I am doing research for my Masters Degree at ECU. Ask him/her if they would like to participate in a focus group that looks at environmental behaviour in W.A. If yes, tell him/her that I need to ask some questions to make sure they fit the profile of the sort of person I need to participate. Tell them it will only take a few minutes and they can change their mind about participating if they wish at any time.

SHORT QUESTIONNAIRE	
Do you do anything that you consider to be environmentally friendly in your home? Like recycling your waste? (Record activity)	
Recycle cans/bottles, plastics, or paper?	
Compost kitchen waste?	
Worm Farm?	
Re-use products or packages? (jars, icecream containers, refills, plastic bags etc.)	
Buy products with minimal packaging, switch off lights, grey water on gardens, use AAA rated appliances, take public transport, turn trash into treasure?	

(Tick ✓ appropriate box)

Please indicate your age range	18-21	22-25	26-30	31-35	36-45	46-55	56-65	65+
Record gender	MALE				FEMALE			
What suburb do you live in?								

If enquirer would like to attend record name: _____

Record which focus group attending: _____

Contact email /telephone number for reminder call:

THANK YOU FOR YOUR TIME

APPENDIX B

Question Plan

(Adapted for each group accordingly)

1. Introduction

Introduction of moderator

Explain how focus groups work:

Please help yourself to refreshments throughout the session

More in depth than questionnaires

No right or wrong answers

Ok to feel / think differently from others

We want as many different points of view as possible

Moderator is neutral

Assure confidentiality

Explain guidelines so that focus group runs smoothly: want you to interact but as this is taped, please don't all talk at once, don't start side conversations, don't hold the floor -give others a chance.

Before explaining the purpose of the focus groups do introductions and Paper/Pencil exercises.

2. Warm-up

Ask each group member to introduce himself/herself and say a little about themselves, e.g. whether married, working, children etc...

3. Paper and Pencil Exercises

Tell the group that they are to write down their responses to each question. After each question they should draw a line to separate their responses.

What social issues concern you the most? How do you feel about them?

What environmental issues concern you the most? How does it make you feel personally?

List all the people you feel should be looking after the environment.

On a scale of 1-to-10 how well do you think Australia is looking after the environment?

On the whole do you think the environment is getting better or worse?

I want to now ask you about your first impressions about the following things. Just write down any thoughts, feelings or images that come to mind when I say: 1)waste, 2) recycling.

What motivated you to start recycling, reducing or reusing? Why did you start? (Omit for Community Non-Activists)

4. Purpose

The purpose of this focus group is to discuss waste minimization. Generally waste minimization can involve recycling what we use, reusing what we have already used, and reducing our overall consumption.

5. INFORM EVERYONE YOU ARE GOING TO START TAPE.

6. Go over the paper and pencil questions as a group - go around in a circle and get everyone to share their answers.
7. Focus Group Questions Begin

A: KNOWLEDGE

1. What are some of the things you can do to protect the environment?
2. How do you feel about waste? (Do we have a waste problem in WA?)
3. Where does most of our waste go?
4. How do you feel about land filling (rubbish tips/dumps)? (Are there any advantages or disadvantages?)
5. What does recycling mean to you?
6. What if I said “recycling is easy” - how do you feel about this comment?
7. What can you recycle?
8. What can you not recycle?
9. What does the word consumption mean to you in 2003?
10. What sorts of things can you reuse?

B: SELF-EFFICACY

1. Tell me how you feel about your ability to recycle? Reduce? or reuse? (Tell me about how confident you
2. What about external things? Do they make a difference to your ability? (For example if the Council stopped providing recycling bins)
3. At what point do these things become too complicated or difficult? (What makes it hard for you to recycle, reuse or reduce?)
4. Can you tell me how strongly you feel about your ability? What about if it is inconvenient to you? (What about your convictions or your conscience....how do they make you feel)

5. If you forget to recycle or reuse something or perhaps other members in your household wont do these things, how does this make you feel? Will you keep trying?

C: SOLUTION EFFICACY

1. Lets know talk about how confident you are that your own actions will help to reduce waste in W.A? What about making a difference - can you do this on your own?
2. As an individual, how do you feel about your efforts being worthwhile?

D: COLLECTIVE EFFICACY - GROUP (Group Activists only)

1. As a member of Earth Carers how do you feel about the group's ability to recycle/reuse/reduce?
2. How would you feel about the ability of the group if you knew another Earth Carer wasn't recycling, reusing or reducing?
3. How do you think other Earth Carers feel about recycling, reducing or reusing? What do you think makes it hard for them? Do you think they have convictions about reducing waste?
4. Think back to before you were a member of Earth Carers (if you can) -how did you feel about your ability to recycle, reuse, or reduce?
5. Again, think back to before you were an Earth Carer - what did you think about the abilities of others to do these things?

E: COLLECTIVE EFFICACY - COMMUNITY

1. As a member of the your community how do you feel about the communities ability to recycle/reuse/reduce?
2. How do you feel about other people (perhaps in WA)? What do you think about their abilities to recycle, reduce or reuse. Do you think they are capable of doing their bit?
3. How do you think they feel about doing these things? What do you think makes it hard for them? Do you think they have convictions about reducing waste?
4. What about a single mum with kids, teenagers, or the elderly. Lets talk about if they will be able to recycle, reduce or reuse?

F: COLLECTIVE-OUTCOME EFFICACY - GROUP (Group Activists only)

1. If everyone in the Earth Carers' group is "doing their bit" tell me how you feel about being able to reduce waste in WA?
2. If you think that someone in the Earth Carers' group isn't "doing their bit" how does this make you feel about making a difference?
3. Tell me how confident you are that most people in the Earth Carers' group "do their bit"?

G: Collective-Outcome Efficacy - Community

1. If everyone works together tell me how you feel about being able to reduce waste in WA?
2. Tell me about how confident you are that most people “do their bit” as part of the community?
3. What about the future? Tell me what your thoughts are on people working together to reduce waste? When might this happen?

F: Other issues that might affect solution efficacy or outcome-efficacy

1. Are there any rewards for you personally by doing these things? If so, how do they make you feel?
2. Are there any negative consequences that might result from doing these things? If so, how do they make you feel?
3. How many people on your street use recycle bins? Or how many people do you know on your street that recycle, reduce or reuse.
4. What do you see as the rewards/benefits of everyone working together to reduce waste?
5. ** (For community non-active groups only) What would it take to make you more active?

8. Conclude

Thank everyone for coming and for their comments.
Make sure everyone is given their reimbursement.

APPENDIX C

Flyer for Community Activists

DO YOU CARE ABOUT THE ENVIRONMENT?

If so, then you're invited to a special discussion group that will allow you to have your say about an important environmental issue. This is so I can complete my Masters degree at ECU - so you would be contributing to a worthwhile project!

WHY BOTHER COMING?

Share your ideas with like-minded people.

Benefit from listening to other ideas.

Receive \$30 to cover your expenses for coming along.

Enjoy the refreshments provided.

Help me complete my Masters degree!

FOCUS GROUP FOR MEN @ _

FOCUS GROUP FOR WOMEN @ _

Phone Leesa on _

APPENDIX D

Flyer for Community Non-activists

Residents needed for Discussion Group

Are you the sort of person who cares about the environment but just doesn't do much about it?

Perhaps you've never thought about the environment before or you just don't know what to do! If so, then you're invited to a special discussion group that will allow you to have your say. This is so I can complete my Masters degree at ECU - so you would be contributing to a worthwhile project!

WHY BOTHER COMING?

Share your ideas with like-minded people.

Benefit from listening to other ideas.

Receive \$30 to cover your expenses for coming along.

Enjoy the refreshments provided.

Help me complete my Masters degree!

FOCUS GROUP FOR WOMEN @ _

FOCUS GROUP FOR MEN @ _

Phone Leesa on _

APPENDIX E

Adapted Flyer for Community Non-activists

Residents needed for Discussion Group

You're invited to a special discussion group that will allow you to have your say about an interesting topic. This is so I can complete my Masters degree at ECU - so you would be contributing to a worthwhile project!

WHY BOTHER COMING?

Share your ideas with like-minded people.

Benefit from listening to other ideas.

Receive \$30 to cover your expenses for coming along.

Enjoy the refreshments provided.

Help me complete my Masters degree!

FOCUS GROUP FOR WOMEN @ _


FOCUS GROUP FOR MEN @ _

Phone Leesa on _

APPENDIX F

Advertisement for Community Non-activists

Residents are needed for a **research discussion group**. Participants will receive \$30. Phone Leesa on



APPENDIX G

Cover Letter and Consent Form

Edith Cowan University
Joondalup Campus
100 Joondalup Drive, Joondalup
Western Australia 6027
Telephone: (08) 9400 5891
Facsimile: (08) 9400 5573

Dear Participant

Thank you for agreeing to attend our focus group where you will be able to express your thoughts and feelings about environmental issues. By participating you will be contributing to an important research project that will help us to understand more about looking after the environment in Western Australia. Specifically, our research looks at the different types of perceptions people have about reducing waste in their homes. The results of the research will be used to construct a report on waste minimization in Western Australia and may also be used to design campaigns that educate people about reducing their household waste.

The focus groups will run for an hour (or thereabouts) and only a small number of people will be participating in each group. You will be reimbursed \$30 for expenses associated with attending a focus group and you may withdraw from the focus group at any time.

The focus groups will be audio recorded and then erased once the dialogue has been transcribed to paper. However, rest assured that all your comments will be recorded under a code number and you will not be identifiable. Your name will not be used in any report or publication from this research. All material associated with the focus group will be kept in a locked filing cabinet and then destroyed five years after the research is completed.

Any questions concerning this research can be directed to Dr. Nadine Henley on __ or Leesa Boniface on __. If you have any concerns about the project and would like to talk to an independent person, you may contact the Executive Ethics Officer on __.

Please complete the consent form on the following page that will indicate your permission to participate in the focus group.

Thank you

Dr. Nadine Henley Edith Cowan University Telephone: Email:	Leesa Boniface Telephone:
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CONSENT FORM (To be kept by the Researcher)

I _____ have read the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this activity, realizing I may withdraw at any time. I agree that the research data gathered for this study may be published provided I am not identifiable. I understand that I will be participating in a focus group and that the focus group will be audio recorded. I also understand that the recording will be erased once the interview is transcribed.

Participant's Signature _____ Date _____

Investigator's Signature _____ Date _____

Please also complete the following section, which will assist in the organisation of the research. Again, this information is held in the strictest confidence.

Please tick the boxes for all of the of the waste minimising activities that you currently perform

- Recycle cans/bottles
- Recycle plastics/paper
- Compost kitchen waste
- Worm Farm
- Reuse jars/ice-cream containers
- Reuse plastic bags
- Purchase packages that can be refilled
- Buy products with minimal packaging
- Switch off lights
- Reuse 'grey' water
- Turn Trash into Treasure
- Other _____

(Tick ✓ appropriate box)

Please indicate your age range 18-21 22-25 26-30 31-35 36-45 46-55 56-65 65 +

Indicate your gender	MALE	FEMALE
What suburb do you live in?		

THANKYOU